



**TRANSPORTATION, WATER &
INFRASTRUCTURE COMMITTEE**

February 11, 2019

9:00 A.M.

651 Pine Street, Room 101, Martinez

Supervisor Karen Mitchoff, District IV, Chair
Chair Supervisor Candace Andersen, District II, Vice Chair

**Agenda
Items:**

Items may be taken out of order based on the business of the day and preference of the Committee

1. Introductions
2. Public comment on any item under the jurisdiction of the Committee and not on this agenda (speakers may be limited to three minutes).
3. **Administrative Items, if applicable.** (John Cunningham, Department of Conservation and Development)
4. **REVIEW record of meeting for November 8, 2018, Transportation, Water and infrastructure Committee Meeting.** This record was prepared pursuant to the Better Government Ordinance 95-6, Article 25-205 (d) of the Contra Costa County Ordinance Code. Any handouts or printed copies of testimony distributed at the meeting will be attached to this meeting record. (John Cunningham, Department of Conservation and Development).
5. **REVIEW, REVISE as appropriate, and ADOPT the 2019 Calendar.** (John Cunningham, Department of Conservation and Development)
6. **CONSIDER referrals to the Committee for 2019 and SUBMIT recommendations to the full Board of Supervisors for approval.** (John Cunningham, Department of Conservation and Development)
7. **CONSIDER report on Local, Regional, State, and Federal Transportation Related Legislative Issues and take ACTION as appropriate.** (John Cunningham, Department of Conservation and Development)
8. **RECEIVE yearly update on the County's IPM Program from the IPM Coordinator, receive report on status of public comment/concerns and take ACTION as appropriate.** (Tanya Drlik, IPM Coordinator)

9. **RECEIVE Review of SunPower/Contra Costa County PV Portfolio Summary technical and economic pro-forma, and DIRECT staff as appropriate.** (Frank Di Massa, Public Works)

10. **CONSIDER report to the Board of Supervisors on the status of items referred to the Committee for 2018, and take ACTION as appropriate.** (John Cunningham, Department of Conservation and Development)

11. **RECEIVE Communication, News, Miscellaneous Items of Interest to the Committee and DIRECT staff as appropriate.** (John Cunningham, Department of Conservation and Development)

12. The next meeting is currently scheduled for Monday, March 11, 2019.

13. Adjourn

The Transportation, Water & Infrastructure Committee (TWIC) will provide reasonable accommodations for persons with disabilities planning to attend TWIC meetings. Contact the staff person listed below at least 72 hours before the meeting.

Any disclosable public records related to an open session item on a regular meeting agenda and distributed by the County to a majority of members of the TWIC less than 96 hours prior to that meeting are available for public inspection at the County Department of Conservation and Development, 30 Muir Road, Martinez during normal business hours.

Public comment may be submitted via electronic mail on agenda items at least one full work day prior to the published meeting time.

For Additional Information Contact:

John Cunningham, Committee Staff
Phone (925) 674-7833
john.cunningham@dcd.cccounty.us

Glossary of Acronyms, Abbreviations, and other Terms (in alphabetical order): Contra Costa County has a policy of making limited use of acronyms, abbreviations, and industry-specific language in meetings of its Board of Supervisors and Committees. Following is a list of commonly used abbreviations that may appear in presentations and written materials at meetings of the Transportation, Water and Infrastructure Committee:

AB Assembly Bill	HOT High-Occupancy/Toll
ABAG Association of Bay Area Governments	HOV High-Occupancy-Vehicle
ACA Assembly Constitutional Amendment	HSD Contra Costa County Health Services Department
ADA Americans with Disabilities Act of 1990	HUD United States Department of Housing and Urban Development
ALUC Airport Land Use Commission	IPM Integrated Pest Management
AOB Area of Benefit	ISO Industrial Safety Ordinance
BAAQMD Bay Area Air Quality Management District	JPA/JEPA Joint (Exercise of) Powers Authority or Agreement
BART Bay Area Rapid Transit District	Lamorinda Lafayette-Moraga-Orinda Area
BATA Bay Area Toll Authority	LAFCo Local Agency Formation Commission
BCDC Bay Conservation & Development Commission	LCC League of California Cities
BDCP Bay-Delta Conservation Plan	LTMS Long-Term Management Strategy
BGO Better Government Ordinance (Contra Costa County)	MAC Municipal Advisory Council
BOS Board of Supervisors	MAF Million Acre Feet (of water)
CALTRANS California Department of Transportation	MBE Minority Business Enterprise
CalWIN California Works Information Network	MOA Memorandum of Agreement
CalWORKS California Work Opportunity and Responsibility to Kids	MOE Maintenance of Effort
CAER Community Awareness Emergency Response	MOU Memorandum of Understanding
CAO County Administrative Officer or Office	MTC Metropolitan Transportation Commission
CCTA Contra Costa Transportation Authority	NACo National Association of Counties
CCWD Contra Costa Water District	NEPA National Environmental Protection Act
CDBG Community Development Block Grant	OES-EOC Office of Emergency Services-Emergency Operations Center
CEQA California Environmental Quality Act	PDA Priority Development Area
CFS Cubic Feet per Second (of water)	PWD Contra Costa County Public Works Department
CPI Consumer Price Index	RCRC Regional Council of Rural Counties
CSA County Service Area	RDA Redevelopment Agency or Area
CSAC California State Association of Counties	RFI Request For Information
CTC California Transportation Commission	RFP Request For Proposals
DCC Delta Counties Coalition	RFQ Request For Qualifications
DCD Contra Costa County Dept. of Conservation & Development	SB Senate Bill
DPC Delta Protection Commission	SBE Small Business Enterprise
DSC Delta Stewardship Council	SR2S Safe Routes to Schools
DWR California Department of Water Resources	STIP State Transportation Improvement Program
EBMUD East Bay Municipal Utility District	SWAT Southwest Area Transportation Committee
EIR Environmental Impact Report (a state requirement)	TRANSPAC Transportation Partnership & Cooperation (Central)
EIS Environmental Impact Statement (a federal requirement)	TRANSPLAN Transportation Planning Committee (East County)
EPA Environmental Protection Agency	TWIC Transportation, Water and Infrastructure Committee
FAA Federal Aviation Administration	USACE United States Army Corps of Engineers
FEMA Federal Emergency Management Agency	WBE Women-Owned Business Enterprise
FTE Full Time Equivalent	WCCTAC West Contra Costa Transportation Advisory Committee
FY Fiscal Year	WETA Water Emergency Transportation Authority
GHAD Geologic Hazard Abatement District	WRDA Water Resources Development Act
GIS Geographic Information System	
HBRR Highway Bridge Replacement and Rehabilitation	



Contra Costa County Board of Supervisors

Subcommittee Report

TRANSPORTATION, WATER & INFRASTRUCTURE COMMITTEE

3.

Meeting Date: 02/11/2019

Subject: Administrative Items, if applicable.

Department: Conservation & Development

Referral No.: N/A

Referral Name: N/A

Presenter: John Cunningham, DCD

Contact: John Cunningham
(925)674-7833

Referral History:

This is an Administrative Item of the Committee.

Referral Update:

Staff will review any items related to the conduct of Committee business.

Recommendation(s)/Next Step(s):

CONSIDER Administrative items and Take ACTION as appropriate.

Fiscal Impact (if any):

N/A

Attachments

No file(s) attached.



Contra Costa County Board of Supervisors

Subcommittee Report

TRANSPORTATION, WATER & INFRASTRUCTURE COMMITTEE

4.

Meeting Date: 02/11/2019

Subject: REVIEW record of meeting for November 8, 2018, Transportation, Water and Infrastructure Meeting.

Submitted For: TRANSPORTATION, WATER & INFRASTRUCTURE COMMITTEE,

Department: Conservation & Development

Referral No.: N/A

Referral Name: N/A

Presenter: John Cunningham, DCD

Contact: John Cunningham
(925)674-7833

Referral History:

County Ordinance (Better Government Ordinance 95-6, Article 25-205, [d]) requires that each County Body keep a record of its meetings. Though the record need not be verbatim, it must accurately reflect the agenda and the decisions made in the meeting.

Referral Update:

Any handouts or printed copies of testimony distributed at the meeting will be attached to this meeting record. Links to the agenda and minutes will be available at the TWI Committee web page: <http://www.cccounty.us/4327/Transportation-Water-Infrastructure>

Recommendation(s)/Next Step(s):

Staff recommends approval of the attached Record of Action for the November 8, 2018, Committee Meeting with any necessary corrections.

Fiscal Impact (if any):

N/A

Attachments

[11-08-18 TWIC Minutes DRAFT](#)

[11-08-18 Sign-In Sheet - TWIC](#)

[10-31-18 COCO support letter final pdf](#)

DRAFT



TRANSPORTATION, WATER & INFRASTRUCTURE COMMITTEE

November 8, 2018
9:00 A.M.
651 Pine Street, Room 101, Martinez

Supervisor Karen Mitchoff, Chair
Supervisor Candace Andersen, Vice Chair

Agenda Items:

Items may be taken out of order based on the business of the day and preference of the Committee

Present: Karen Mitchoff, Chair
Candace Andersen, Vice Chair

1. Introductions
2. Public comment on any item under the jurisdiction of the Committee and not on this agenda (speakers may be limited to three minutes).
3. CONSIDER Administrative items and Take ACTION as appropriate.
4. Staff recommends approval of the attached Record of Action for the October 8, 2018, Committee Meeting with any necessary corrections.

The Committee unanimously APPROVED the meeting record.

5. CONSIDER a proposed ban of polystyrene food and beverage containers and the policy implications and objectives of a ban, PROVIDE staff with policy direction to develop a draft ordinance, and, if necessary, FORWARD the recommended policy direction to the full Board for consideration and concurrence.

The Committee unanimously APPROVED the recommendation with further direction to staff in the event the Board of Supervisors approves the ordinance: 1) ensure the Public Information Officer is involved in implementation, and 2) return to the BOS with an implementation status report six months to one year after the ban goes in to effect.

Dominic Williams (Save the Bay) testified in support of the ordinance.

6. RECEIVE and consider public comments on the Plan, ACCEPT the Plan, and RECOMMEND the Board of Supervisors, as the governing board of the District, adopt the Plan.

The Committee RECEIVED the Draft Flood Control Capital Improvement Plan and unanimously APPROVED the recommendations.

There was no public comment.

7. CONSIDER report on Local, Regional, State, and Federal Transportation Related Legislative Issues and take ACTION as appropriate.

The Committee RECEIVED the report.

8. RECEIVE updates on referrals to the Transportation, Water, and Infrastructure Committee, and DIRECT staff as appropriate.

The Committee RECEIVED the report and indicated they would follow up with the County Administrator's Office regarding the status of the County's effort to establish a Taxi Ordinance.

9. The next meeting is currently scheduled for Monday, December 10th, 9am.

10. Adjourn

The Transportation, Water & Infrastructure Committee (TWIC) will provide reasonable accommodations for persons with disabilities planning to attend TWIC meetings. Contact the staff person listed below at least 72 hours before the meeting.

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Public comment may be submitted via electronic mail on agenda items at least one full work day prior to the published meeting time.

John Cunningham, Committee Staff

Transportation, Water and Infrastructure Committee Meeting November 08, 2018

SIGN-IN SHEET

Signing in is voluntary. You may attend this meeting without signing in. (If front is filled, please use back.)

Name	Representing	Phone	EMAIL
Dominic Williams	Save the Bay	925-858-2519	baysmartfellow@savethebay.org
Paul Detjeus	CCC Flood Control	on file	on file
Gus Amerighni	" " "	" "	" "
Mark Seedell	CCWD	925 688 8119	mseedell@ccwater.com
Mitch Avalon	CCCFCO	925-313-2203	mitch.avalon.cccounty.us
Dana d'Angelo	CCCFCO		Dana.d'Angelo ^{mn} .cccount.us
Tim Jensen	CC County PWD		
Mike Carlson	CC County PWD		
Lia Bristol	Sup. Mitchoff	925-521-7100	lia.bristol@bos.cccounty.us
Jody London	BCB		



October 31, 2018

Contra Costa County Transportation, Water, and Infrastructure Committee
30 Muir Road
Martinez, CA 94553

Dear Chair Mitchoff and Vice Chair Andersen:

On behalf of thousands of Save the Bay supporters in Contra Costa County and around the Bay Area, I urge you to move forward with a ban on the distribution and sale of expanded polystyrene products as soon as possible. Many local jurisdictions have enacted similar or more stringent bans, including Alameda County, Concord, El Cerrito, and Lafayette. In fact, in California alone, there are currently 117 local ordinances banning the sale and/or use of expanded polystyrene. We urge you to join these cities, including those within your county, in taking strong action against this polluting and unsustainable material.

Polystyrene, specifically polystyrene foam, is one of the biggest culprits in clogging municipal storm drains and is a major litter item that is suffocating our creeks, wetlands, and the Bay. Polystyrene never biodegrades; it will remain in the environment for thousands of years, harming wildlife and polluting our shores. Because polystyrene foam is lightweight, it easily blows into storm drains and waterways, where it readily breaks apart and is often ingested by fish, birds and other wildlife.

Polystyrene foam has no appreciable recycling market. Less than one half of one percent of polystyrene food service packaging – and less than one percent of all polystyrene – is actually recycled in California. The rest ends up in landfills and as litter in our streets and waterways.

The dramatic increase in alternative food ware is being driven by consumer demand. While the quality of alternative food ware is increasing, the cost is steadily decreasing; complying with a ban could cost as little as \$150 per year, according to San Mateo County. Currently, hundreds of Bay Area restaurants and businesses are complying with polystyrene bans – if they can do it, Contra Costa businesses can also adapt.

Finally, Contra Costa County, like many other Bay Area cities and counties, are required to achieve ambitious stormwater pollution reductions under the Municipal Regional Stormwater Permit. By 2022, the county must reduce the amount of trash in its stormwater by 100 percent; an 80 reduction must be achieved by 2019. Contra Costa can take a strong step toward meeting these goals by eliminating commonly littered products, such as polystyrene food ware.

Now is the time to stop plastic pollution in our Bay and waterways. Save The Bay respectfully urges Contra Costa County to ban expanded polystyrene products. We look forward to working with you on this issue.

Sincerely,

David Lewis
Executive Director



Contra Costa County Board of Supervisors

Subcommittee Report

TRANSPORTATION, WATER & INFRASTRUCTURE COMMITTEE

5.

Meeting Date: 02/11/2019

Subject: REVIEW, REVISE as appropriate, and ADOPT the 2019 Calendar.

Submitted For: TRANSPORTATION, WATER & INFRASTRUCTURE
COMMITTEE,

Department: Conservation & Development

Referral No.: N/A

Referral Name: N/A

Presenter: John Cunningham, DCD

Contact: John Cunningham
(925)674-7833

Referral History:

REVIEW, REVISE as appropriate, and ADOPT the 2019 Calendar. (John Cunningham, Department of Conservation and Development)

Referral Update:

The Committee should review, revise if appropriate, and adopt the 2019 draft calendar.

(In acknowledgement of Veteran's Day, please note the changed date and time.)

Recommendation(s)/Next Step(s):

REVIEW, REVISE as appropriate, and ADOPT the 2019 Calendar.

Fiscal Impact (if any):

N/A

Attachments

2019 TWI Committee Schedule DRAFT



TRANSPORTATION, WATER & INFRASTRUCTURE COMMITTEE

Supervisor Karen Mitchoff, District IV, Chair Supervisor
Candace Andersen, District II, Vice Chair

2019 Meeting Schedule

DATE	ROOM	TIME
February 11	651 Pine Street, Room 101, Martinez	9:00 to 10:00 a.m.
March 11	651 Pine Street, Room 101, Martinez	9:00 to 10:00 a.m.
April 08	651 Pine Street, Room 101, Martinez	9:00 to 10:00 a.m.
May 13	651 Pine Street, Room 101, Martinez	9:00 to 10:00 a.m.
June 10	651 Pine Street, Room 101, Martinez	9:00 to 10:00 a.m.
July 08	651 Pine Street, Room 101, Martinez	9:00 to 10:00 a.m.
August 12	651 Pine Street, Room 101, Martinez	9:00 to 10:00 a.m.
September 09	651 Pine Street, Room 101, Martinez	9:00 to 10:00 a.m.
October 14	651 Pine Street, Room 101, Martinez	9:00 to 10:00 a.m.
**November 14	651 Pine Street, Room 101, Martinez	**1:00 to 2:00 p.m.
December 09	651 Pine Street, Room 101, Martinez	9:00 to 10:00 a.m.

****In acknowledgement of Veterans Day, note the changed date and time.**

The TWIC Committee meets the second Monday of each month, unless otherwise noted**. The Agenda Packets will be mailed out prior to the meeting dates.

For Additional Information Contact:

John Cunningham, Committee Staff
Direct Line: 925-674-7833
Main Transportation Line: 925-674-7209
John.Cunningham@dcd.cccounty.us



Contra Costa County Board of Supervisors

Subcommittee Report

TRANSPORTATION, WATER & INFRASTRUCTURE COMMITTEE

6.

Meeting Date: 02/11/2019
Subject: CONSIDER Referrals to the Committee for 2019, REVISE as necessary, and take ACTION as appropriate.
Submitted For: TRANSPORTATION, WATER & INFRASTRUCTURE COMMITTEE,
Department: Conservation & Development
Referral No.: N/A
Referral Name: This is an annual administrative item of the Committee.
Presenter: John Cunningham, DCD **Contact:** John Cunningham
(925)674-7833

Referral History:

This is an annual Administrative Item of the Committee.

Referral Update:

See attached recommended referrals to the Committee for 2019.

Discussion of recommended revisions:

#24: Monitor the County's conversion to solar/distributed energy systems.

Conversations between Public Works (PWD) and TWIC staff resulted in the recommendation that new referral #24 (above) be included in the TWIC standing list of referrals. As PWD accelerates their installation of solar and distributed energy infrastructure, the need to have a structured process to oversee the implementation became apparent.

Recommendation(s)/Next Step(s):

CONSIDER recommendations on referrals to the Committee for 2019, REVISE as necessary, and DIRECT staff to bring the list to the full Board of Supervisors for approval.

Fiscal Impact (if any):

There is no fiscal impact.

Attachments

DRAFT TWIC Referrals 2019

DRAFT 2019 Referrals to the Transportation, Water and Infrastructure Committee

(Submitted to TWIC at their February 11, 2019 Meeting.)

1. Review legislative matters on transportation, water, and infrastructure.
2. Review applications for transportation, water and infrastructure grants to be prepared by the Public Works and Conservation and Development Departments.
3. Monitor the Contra Costa Transportation Authority including efforts to implement Measure J.
4. Monitor EBMUD and Contra Costa Water District projects and activities.
5. Review projects, plans and legislative matters that may affect the health of the San Francisco Bay and Delta, including but not limited to conveyance, flood control, dredging, climate change, habitat conservation, governance, water storage, development of an ordinance regarding polystyrene foam food containers, water quality, supply and reliability, consistent with the Board of Supervisors adopted *Delta Water Platform*.
6. Review and monitor the establishment of Groundwater Sustainability Agencies and Groundwater Sustainability Plans for the three medium priority groundwater basins within Contra Costa County as required by the Sustainable Groundwater Management Act.
7. Review issues associated with County flood control facilities.
8. Monitor creek and watershed issues and seek funding for improvement projects related to these issues.
9. Monitor the implementation of the Integrated Pest Management policy.
10. Monitor the status of county park maintenance issues including, but not limited to, transfer of some County park maintenance responsibilities to other agencies and implementation of Measure WW grants and expenditure plan.
11. Monitor and report on the East Contra Costa County Habitat Conservation Plan.
12. Monitor the implementation of the County Complete Streets Policy.
13. Monitor and report on the Underground Utilities Program.
14. Monitor implementation of the Letter of Understanding with PG&E for the maintenance of PG&E streetlights in Contra Costa.
15. Freight transportation issues, including but not limited to potential increases in rail traffic such as that proposed by the Port of Oakland and other possible service increases, safety of freight trains, rail corridors, and trucks that transport hazardous materials, the planned truck route for North Richmond; freight issues related to the Northern Waterfront (and coordinate with the Northern Waterfront Ad Hoc Committee as needed), and the deepening of the San Francisco-to-Stockton Ship Channel.
15. Monitor the Iron Horse Corridor Management Program.
16. Monitor and report on the eBART Project.
17. Review transportation plans and services for specific populations, including but not limited to County Low Income Transportation Action Plan, Coordinated Human Services Transportation Plan for the Bay Area, Priorities for Senior Mobility, Bay Point Community Based Transportation Plan, and the Contra Costa County Accessible Transportation Strategic Plan.
18. Monitor issues of interest in the provision and enhancement of general transportation services, including but not limited to public transportation, taxicab/transportation network companies, and navigation apps.
19. Monitor the statewide infrastructure bond programs.
20. Monitor implementation and ensure compliance with the single-use carryout bag ban consistent with Public Resources Code, Chapter 5.3 (resulting from Senate Bill 270 [Padilla – 2014]).
21. Monitor efforts at the State to revise school siting guidelines and statutes.
22. Monitor issues related to docked and dockless bike share programs.
23. Monitor efforts related to water conservation including but not limited to turf conversion, graywater, and other related landscaping issues.

~~23-24~~. Monitor the County's conversion to solar/distributed energy systems.



Contra Costa County Board of Supervisors

Subcommittee Report

TRANSPORTATION, WATER & INFRASTRUCTURE COMMITTEE

7.

Meeting Date: 02/11/2019

Subject: CONSIDER report on Local, State, and Federal Transportation Related Issues: Legislation, Studies, Miscellaneous Updates, take ACTION as Appropriate

Department: Conservation & Development

Referral No.: 1

Referral Name: REVIEW legislative matters on transportation, water, and infrastructure.

Presenter: John Cunningham, DCD

Contact: John Cunningham
(925)674-7883

Referral History:

This is a standing item on the Transportation, Water, and Infrastructure Committee referral list and meeting agenda.

Referral Update:

In developing transportation related issues and proposals to bring forward for consideration by TWIC, staff receives input from the Board of Supervisors (BOS), references the County's adopted Legislative Platforms, coordinates with our legislative advocates, partner agencies and organizations, and consults with the Committee itself.

This report includes four sections, 1: LOCAL, 2: REGIONAL, 3: STATE, and 4: FEDERAL.

1. LOCAL

1.1: Update/Discussion regarding the Contra Costa Transportation Authority's Strategic Planning Workshop

2. REGIONAL

No written report in February.

3. STATE

3.1: Legislative Report

The February State legislative report from the County's advocate, Mark Watts, is attached. The report covers the following issues:

- Governor Newsom Appointments
- State Budget
- Legislation of note

3.2 Specific Legislation

Assembly Bill [#pending]: Salas (Kern/King Counties) Transportation: Seniors and Disabled Individuals Access to Transportation to Medical Services.

A representative from the California Senior Legislature approached TWIC staff with a request for support regarding the attached proposal. The title of the proposal generally describes what is being funded and the revenue source is the Greenhouse Gas Reduction Fund (GGRF). Eligible areas are restricted to "rural, desert, mountain" areas, it isn't clear that Contra Costa County would benefit. The proposal could undermine the County's effort to access the GGRF for our own comprehensive proposal to fund this type of transportation statewide without geographic restrictions

3.3 Housing Strategy

Discussion regarding the County's approach/process to engage in the housing dialog which will evolve in 2019.

3.4 Other

The California State Association of Counties requested information from County staff regarding policy proposals relative to school siting.

4. FEDERAL

No written report in February.

See article in "Communication & News" regarding comments from Representative Peter DeFazio (Oregon) on the earmark ban.

Recommendation(s)/Next Step(s):

CONSIDER report on Local, Regional, State, and Federal Transportation Related Legislative Issues and take ACTION as appropriate.

Fiscal Impact (if any):

There is no fiscal impact.

Attachments

TWIC State Transportation Leg Report for Feb 2019

CA Sr. Legislature - Trans Leg Proposal

Smith, Watts & Hartmann, LLC.

Consulting and Governmental Relations

February 1, 2019

MEMORANDUM

TO: CONTRA COSTA COUNTY: TRANSPORTATION, WATER, AND INFRASTRUCTURE COMMITTEE

FROM: MARK WATTS

SUBJECT: REPORT FOR FEBRUARY TWIC MEETING

Governor Newsom

Key Staff appointments

Governor Newsom has announced several key leadership appointments including, Ann O'Leary as Chief of Staff and Lindsey Cobia serving as Deputy Chief of Staff. Additionally, Ana J. Matosantos as Cabinet Secretary, Jason Elliott as Chief Deputy Cabinet Secretary for Executive Branch Operations, and Angie Wei as Chief Deputy Cabinet Secretary for Policy Development.

State Budget

The proposed state budget introduced on January 10th includes a \$144 billion general fund, marking a 4 percent increase over the \$138 billion spending plan former Gov. Jerry Brown signed in June.

This year's total budget — including money for special fund expenditures — exceeds \$209 billion. Much of the increased spending would go to one-time projects.

The Governor has indicated that his administration is preparing for a recession and are developing plans to continue setting aside money in reserves. State budget reserves currently amount to a projected \$16 billion that could help the state in the face of a recession. The Legislative Analyst's Office projects the state will have an additional \$14.8 billion surplus that the Legislature and Governor could use on practically anything

Transportation Budget Proposals

The Governor proposes to continue the implementation of the SB 1, the Road Repair and Accountability Act, which provides stable, long-term funding for both state and local transportation infrastructure.

Smith, Watts & Hartmann, LLC.

Consulting and Governmental Relations

SB 1 provides an average of \$5.4 billion per year over the next ten years for state and local transportation projects:

To this end, the Budget provides \$4.8 billion in new SB 1 funding:

- \$1.2 billion is available to all 479 cities and 58 counties for local road repairs,
- \$1.2 billion for the repair and maintenance of the state highway system.
- \$400 million is to be available to repair and maintain the state's bridges and culverts,
- \$307 million is available to improve trade corridors,
- \$250 million is available to increase throughput on congested commute corridors.
- \$458 million for local transit operations and \$386 million for capital improvements for transit, commuter, and intercity rail.

SB 1 also provides annual funding for other local transportation priorities, including:

- \$200 million for Local Partnership projects,
- \$100 million for Active Transportation Program (ATP) projects
- \$25 million for expansion of freeway service patrols, and
- \$25 million in local planning grants.

Infrastructure

The Governor indicated his administration would release a Five-Year Infrastructure Plan to spell out the state's priorities for investments in the state's infrastructure later this year.

Linking Housing to Transportation funds

Finally, in spite of the good news on SB 1 appropriations, the governor seeks to withhold SB 1 allocations to cities and counties that do not achieve their housing (RHNA) goals). His budget document calls for formation of a stakeholder working group to address this concept.

Cap and Trade

The budget proposes a \$1 billion Cap and Trade Expenditure Plan, separate from the 60% continuously appropriated directly to specified programs such as Affordable Housing and Sustainable Communities (AHSC). This new plan is targeting support programs that reduce or sequester greenhouse gases, including programs that benefit disadvantaged and low-income communities, and support training and apprenticeships necessary to transition the state's workforce to a low carbon economy.

Legislature

In the intervening period since the Legislature reconvened in December 2018, legislators have introduced nearly 500 bills, including several constitutional amendments.

SB 137 (Dodd) - This bill reduces duplicative federal transportation permitting and environmental review by expanding the State's existing program to exchange federal surface transportation revenues for state transportation revenues.

Smith, Watts & Hartmann, LLC.

Consulting and Governmental Relations

The Self-Help County Coalition and CSAC are supporting this measure. Staff recommends that the Authority consider a Support position, too.

AB 252 (Daly) – This bill would permanently allow Caltrans to assume the role of the US Department of Transportation for NEPA decision making on projects within California. The Self-Help counties are strongly supporting this program extension and staff recommends the Authority consider a Support position, too.

Other notable bills introduced so far include the following:

1. SB 127 by Senator Scott Wiener which would require the creation of a division of active transportation within CalTrans; also, it would require the department's asset management plan used for the SHOPP to establish performance measures for pedestrian and bicycle facilities for each project; finally, the bill would require including bicycle, pedestrian, and transit facilities in many SHOPP projects.
2. SB 128 by Senator Jim Beall which would provide that bonds may be sold under an enhanced infrastructure financing district (EIFD) without a vote of the public. Current law requires such bonds to have approval by a 55% majority of voters within the district before they can be sold.
3. AB 185 by Assemblymembers Tim Grayson and Sabrina Cervantes which would add the Department of Housing and Community Development (HCD) to meetings between the Air Resources Board (CARB) and the California Transportation Commission (CTC) currently required to be held twice a year.

INTRODUCED BY SENIOR ASSEMBLY MEMBER WARREN

(COAUTHORS: SENIOR ASSEMBLY MEMBERS BRANSON AND ROLFE)

LEGISLATIVE COUNSEL'S DIGEST

**AP 2: TRANSPORTATION: SENIORS' AND DISABLED INDIVIDUALS' ACCESS TO
TRANSPORTATION TO MEDICAL SERVICES.**

THE CALIFORNIA GLOBAL WARMING SOLUTIONS ACT OF 2006 DESIGNATES THE STATE AIR RESOURCES BOARD AS THE STATE AGENCY CHARGED WITH MONITORING AND REGULATING SOURCES OF EMISSIONS OF GREENHOUSE GASES. THE ACT AUTHORIZES THE STATE BOARD TO INCLUDE THE USE OF MARKET-BASED COMPLIANCE MECHANISMS. EXISTING LAW REQUIRES ALL MONEYS, EXCEPT FOR FINES AND PENALTIES, COLLECTED BY THE STATE BOARD AS PART OF A MARKET-BASED COMPLIANCE MECHANISM TO BE DEPOSITED IN THE GREENHOUSE GAS REDUCTION FUND. EXISTING LAW CONTINUOUSLY APPROPRIATES A CERTAIN AMOUNT OF MONEYS FROM THE FUND FOR THE LOW CARBON TRANSIT OPERATIONS PROGRAM TO PROVIDE OPERATING AND CAPITAL ASSISTANCE FOR TRANSIT AGENCIES TO REDUCE THE EMISSIONS OF GREENHOUSE GASES AND IMPROVE MOBILITY, WITH A PRIORITY ON SERVING DISADVANTAGED COMMUNITIES.

EXISTING LAW ESTABLISHES THE AIR QUALITY IMPROVEMENT PROGRAM THAT IS ADMINISTERED BY THE STATE BOARD FOR THE PURPOSES OF FUNDING PROJECTS RELATED TO, AMONG OTHER THINGS, THE REDUCTION OF CRITERIA AIR POLLUTANTS AND IMPROVEMENT OF AIR QUALITY. EXISTING LAW ESTABLISHES THE CARL MOYER MEMORIAL AIR QUALITY STANDARDS ATTAINMENT PROGRAM THAT IS ADMINISTERED BY THE STATE BOARD TO PROVIDE GRANTS TO OFFSET THE INCREMENTAL COST OF ELIGIBLE PROJECTS THAT REDUCE EMISSIONS FROM COVERED VEHICULAR SOURCES.

THIS MEASURE WOULD MEMORIALIZE THE LEGISLATURE AND THE GOVERNOR TO ENACT LEGISLATION THAT WOULD AUTHORIZE THE USE OF MONEYS IN THE ELECTRIC PROGRAM INVESTMENT CHARGE TO FUND GRANT PROGRAMS IN COUNTIES TO PROVIDE TRANSPORTATION TO NONEMERGENCY MEDICAL SERVICES FOR THE SENIOR AND DISABLED POPULATIONS LOCATED IN RURAL, DESERT, AND MOUNTAIN AREAS THROUGH THE USE OF ENERGY RENEWABLE VEHICLES.

VOTE MAJORITY.

AP 2: RELATING TO TRANSPORTATION

WHEREAS, CALIFORNIA HAS MANY SENIORS AND PEOPLE WITH DISABILITIES OR WHO SUFFER FROM CHRONIC, SERIOUS ILLNESSES OR MENTAL IMPAIRMENTS

THAT LIMIT THEIR MOBILITY AND WHO LIVE IN RURAL, MOUNTAIN, OR DESERT COMMUNITIES THROUGHOUT THE STATE; AND

WHEREAS, RESOURCES FOR NON-EMERGENCY MEDICAL TRANSPORTATION ARE LIMITED IN THOSE COMMUNITIES, AND, WHERE THEY ARE AVAILABLE, MANY VEHICLES USED IN THOSE COMMUNITIES USE FUELS THAT CONTRIBUTE TO AIR POLLUTION IN THOSE COMMUNITIES; AND

WHEREAS, NONEMERGENCY MEDICAL SERVICES INCLUDE SCHEDULED MEDICAL APPOINTMENTS, RETURN TRIPS FROM HOSPITAL EMERGENCIES, AND TRANSFERS BETWEEN HOSPITALS; AND

WHEREAS, FOR TRANSPORTATION-DISADVANTAGED INDIVIDUALS, SUCH AS PERSONS WITHOUT A DRIVER'S LICENSE OR WITH MOBILITY IMPAIRMENTS, TRANSPORTATION ACCESS CAN BE A BARRIER TO RECEIVING MEDICAL CARE; AND

WHEREAS, THE LACK OF TRANSPORTATION TO MEDICAL SERVICES IS A PRIME CONCERN BECAUSE OF THE LONG DISTANCES TO SPECIALIZED HEALTH CARE FACILITIES, WHICH ARE PRIMARILY OUTSIDE RURAL, MOUNTAIN, AND DESERT COMMUNITIES; AND

WHEREAS, MISSING MEDICAL APPOINTMENTS CAN LEAD TO WORSENING OF HEALTH CONDITIONS AND INCREASED HEALTH CARE COSTS; AND

WHEREAS, FOR EXAMPLE, THE COUNTIES OF LAKE AND MENDOCINO WITH A COMBINED AREA OF 7,320 SQUARE MILES HAVE A POPULATION OF 40,227 SENIOR CITIZENS, ABOUT 70 PERCENT OF THE COMBINED TOTAL POPULATION OF THOSE COUNTIES; AND

WHEREAS, OF THE POPULATION OF LAKE COUNTY, 55 PERCENT IS LOW INCOME; AND

WHEREAS, THE AREA AGENCY ON AGING OF THE COUNTIES OF LAKE AND MENDOCINO, PLANNING AND SERVICE AREA (PSA) 26, PROVIDES NO FUNDING FOR TRANSPORTATION BECAUSE ITS FUNDING IS DEDICATED FOR THE SUPPORT OF SENIOR CENTERS; AND

WHEREAS, TRANSPORTATION FOR SENIORS IS PRIMARILY PROVIDED BY COUNTY TRANSIT AGENCIES; AND

WHEREAS, IN THE COUNTY OF LAKE, LAKE TRANSIT HAS BEEN MAKING A STRONG EFFORT TO EXPAND SENIOR TRANSPORTATION THROUGH GRANTS FROM THE FEDERAL GOVERNMENT TO EXPAND ITS FLEDGLING VOLUNTEER DRIVER PROGRAM; AND

WHEREAS, LAKE TRANSIT HAS ALSO BEGUN TO PROVIDE TRANSPORTATION TO OUT-OF-COUNTY NONEMERGENCY MEDICAL FACILITIES AND EXPANDING ITS COORDINATION WITH HOSPITALS AND OTHER NONPROFIT ORGANIZATIONS RELATED TO MEDICAL SERVICES; AND

WHEREAS, THE COUNTY OF SAN BERNARDINO'S 307,000 SENIOR AND DISABLED POPULATION IS SITUATED IN AN AREA THAT IS OVER 20,000 SQUARE MILES OF RURAL, DESERT, OR MOUNTAIN AREAS; AND

WHEREAS, TRANSPORTATION SERVICES FOR SENIORS AND DISABLED INDIVIDUALS IN THE COUNTY ARE PROVIDED THROUGH A VOLUNTEER DRIVER PROGRAM, WHICH IS NOT FUNDED BY THE AREA OFFICE ON AGING FOR THAT

COUNTY, IN WHICH PARTICIPANTS OF THE PROGRAM HAVE TO RECRUIT THEIR DRIVERS; AND

WHEREAS, IT IS EQUALLY CHALLENGING FOR THE FOR MORE THAN 117,000 SENIOR AND DISABLED POPULATION IN THE COUNTY OF STANISLAUS, WHICH IS APPROXIMATELY 1,515 SQUARE MILES, TO ACCESS TRANSPORTATION TO NONEMERGENCY MEDICAL SERVICES BECAUSE THERE ARE NO TRANSPORTATION SERVICES SPONSORED BY THE DEPARTMENT OF AGING AND ADULT SERVICES FOR THAT COUNTY; AND

WHEREAS, TRANSPORTATION PROBLEMS IN THESE COUNTIES, AS WELL AS MANY OTHER SIMILARLY SITUATED COUNTIES, STEM FROM THE RURAL, LOW-DENSITY POPULATION BASE, SEPARATED BY MANY MILES AND GEOGRAPHIC FEATURES, SUCH AS MOUNTAINS AND LAKES; AND

WHEREAS, MANY SENIORS IN THESE COUNTIES NEED ACCESS TO TRANSPORTATION TO NONEMERGENCY MEDICAL SERVICES, SUCH AS SPECIALIZED TREATMENT, WHICH ARE OFTEN PROVIDED IN FAR-OFF LOCATIONS, SUCH AS MORE URBAN AREAS, AND TRANSPORTATION BETWEEN THE SENIORS' RESIDENCES AND MEDICAL FACILITIES IS OFTEN NONEXISTENT BECAUSE OF THE DISTANCES INVOLVED AND THE COSTS ASSOCIATED WITH PROVIDING TRANSPORTATION; AND

WHEREAS, CALIFORNIA, THROUGH THE ENACTMENT OF THE CALIFORNIA GLOBAL WARMING SOLUTIONS ACT OF 2006 (DIVISION 25.5 (COMMENCING WITH SECTION 38500) OF THE HEALTH AND SAFETY CODE), HAS ESTABLISHED A STATE POLICY TO REDUCE THE EMISSION OF GREENHOUSE GASES IN THE STATE; AND

WHEREAS, THE DEPARTMENT OF FINANCE, IN ITS 3-YEAR INVESTMENT PLAN, IS REQUIRED TO ALLOCATE 25 PERCENT OF THE AVAILABLE MONEYS IN THE GREENHOUSE GAS REDUCTION FUND TO PROJECTS THAT PROVIDE BENEFITS TO DISADVANTAGED COMMUNITIES, IDENTIFIED BY THE OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT, AND 10 PERCENT TO PROJECTS LOCATED IN THOSE COMMUNITIES; AND

WHEREAS, THE DEPARTMENT OF TRANSPORTATION IS TARGETING INVESTMENTS OF MONEYS FROM THE GREENHOUSE GAS REDUCTION FUND TO IMPROVE PUBLIC HEALTH, QUALITY OF LIFE, AND ECONOMIC OPPORTUNITY IN CALIFORNIA'S MOST BURDENED COMMUNITIES AND AT THE SAME TIME TO REDUCE THE EMISSIONS OF GREENHOUSE GASES; AND

WHEREAS, THE LOW CARBON TRANSIT OPERATIONS PROGRAM (PART 3 (COMMENCING WITH SECTION 75230) OF DIVISION 44 OF THE PUBLIC RESOURCES CODE), FUNDED BY MONEYS IN THE GREENHOUSE GAS REDUCTION FUND, PROVIDES OPERATING AND CAPITAL ASSISTANCE FOR TRANSIT AGENCIES TO REDUCE THE EMISSIONS OF GREENHOUSE GASES AND IMPROVE MOBILITY, WITH A PRIORITY ON SERVING DISADVANTAGED COMMUNITIES; AND

WHEREAS, THE AIR QUALITY IMPROVEMENT PROGRAM (ARTICLE 3 (COMMENCING WITH SECTION 44274) OF CHAPTER 8.9 OF PART 5 OF DIVISION 26 OF THE HEALTH AND SAFETY CODE), THE CARL MOYER MEMORIAL AIR QUALITY STANDARDS ATTAINMENT PROGRAM (CHAPTER 9 (COMMENCING WITH SECTION 44275) OF PART 5 OF DIVISION 26 OF THE HEALTH AND SAFETY CODE), AND OTHER

SIMILAR PROGRAMS ADMINISTERED BY THE STATE AIR RESOURCES BOARD PROVIDE FINANCIAL INCENTIVES FOR THE PURCHASE OF CLEAN VEHICLES; NOW, THEREFORE, BE IT

RESOLVED, BY THE SENIOR ASSEMBLY AND THE SENIOR SENATE, JOINTLY, THAT THE SENIOR LEGISLATURE OF THE STATE OF CALIFORNIA AT ITS 2018 REGULAR SESSION, A MAJORITY OF THE MEMBERS VOTING THEREFOR, THAT THE LEGISLATURE AND THE GOVERNOR ENACT LEGISLATION TO AUTHORIZE THE CALIFORNIA DEPARTMENT OF AGING TO ALLOCATE AT LEAST ONE PERCENT OF THE MONEYS THE DEPARTMENT IS APPROPRIATED FROM THE GREENHOUSE GAS REDUCTION FUND AND THE AIR QUALITY IMPROVEMENT FUND TO COUNTY DEPARTMENTS OF AGING AND ADULT SERVICES FOR GRANT PROGRAMS TO PROVIDE TRANSPORTATION FOR NONEMERGENCY MEDICAL SERVICES FOR THE SENIOR AND DISABLED POPULATIONS LOCATED IN RURAL, DESERT, AND MOUNTAIN AREAS OF THOSE COUNTIES THROUGH THE PURCHASE, LEASE, AND MAINTENANCE OF SEVEN-, 12-, OR 15-PASSENGER ZERO OR NEAR-ZERO EMISSION VEHICLES; AND BE IT FURTHER

RESOLVED, THAT THE SENIOR LEGISLATURE OF THE STATE OF CALIFORNIA RESPECTFULLY MEMORIALIZES THE LEGISLATURE AND THE GOVERNOR OF THE STATE OF CALIFORNIA TO ENACT APPROPRIATE LEGISLATION THAT WOULD ADDRESS THE CONCERNS SET FORTH IN THIS MEASURE; AND BE IT FURTHER

RESOLVED, THAT A COPY OF THIS MEASURE BE TRANSMITTED TO THE SPEAKER OF THE ASSEMBLY, THE PRESIDENT PRO TEMPORE OF THE SENATE, AND THE GOVERNOR OF THE STATE OF CALIFORNIA.



Contra Costa County Board of Supervisors

Subcommittee Report

TRANSPORTATION, WATER & INFRASTRUCTURE COMMITTEE

8.

Meeting Date: 02/11/2019

Subject: Integrated Pest Management Report

Submitted For: TRANSPORTATION, WATER & INFRASTRUCTURE
COMMITTEE,

Department: Conservation & Development

Referral No.: 9

Referral Name: Monitor the implementation of the Integrated Pest Management policy.

Presenter: Tanya Drlik, IPM Coordinator

Contact: Tanya Drlik
(925)335-3214

Referral History:

The TWI Committee has asked the Integrated Pest Management Coordinator to update the Committee yearly on the County's integrated pest management program, unless serious public concern issues arise.

Referral Update:

The IPM Coordinator will present the IPM Annual Report to TWI (see attached annual report and report on public concerns).

Recommendation(s)/Next Step(s):

Accept Integrated Pest Management report, and take ACTION as appropriate.

Fiscal Impact (if any):

None.

Attachments

2018 Annual IPM Report

1-29-19 County Staff Responses

Appendix D

Appendix E

Contra Costa County Integrated Pest Management Advisory Committee

2018 Annual IPM Program Status Report

to the

Transportation, Water, and Infrastructure Committee of the Contra Costa Board of Supervisors

Table of Contents

Executive Summary 3

History of the IPM Advisory Committee 5

Background on the IPM Advisory Committee 5

IPM Advisory Committee Priorities for 2018 5

2018 Accomplishments of the IPM Advisory Committee 6

2018 Recommendations to the Board of Supervisors from the IPM Advisory Committee 7

2018 Accomplishments of the IPM Coordinator 8

2018 Recommendations to the Board of Supervisors from the IPM Coordinator 9

2018 Department IPM Program Highlights and Challenges 11

Pesticide Use by Contra Costa County Operations 26

Departmental Integrated Pest Management Priorities For 2019 30

Appendix A. Decision-Making Subcommittee Report and Final Documents 33

Appendix B. Outreach Subcommittee Report and Pest Management Articles 59

Appendix C. Pesticide Posting Task Force Recommendations 73

Appendix D. San Francisco’s RFQ for Bed Bug Cleaning Services 79

Contra Costa County Integrated Pest Management Advisory Committee

2018 Annual IPM Program Status Report

to the

Transportation, Water, and Infrastructure Committee of the Contra Costa Board of Supervisors

Executive Summary

Work of the IPM Advisory Committee

This year, the IPM Advisory Committee reviewed the County's pesticide use posting policy, delivered a pest management awareness training to around 235 County in-home visitors, and developed a series of articles on IPM for distribution to local media outlets.

In 2012, the Committee developed a form for documenting pest management decisions. Since then, the Departments have been using this form to systematically document management decisions for the pests they work with. This year, with review from the Committee, the Public Works Department finalized documents for vegetation management along roadsides and flood control channels. In conjunction with the Agriculture Department, the Committee is reviewing the decision document for managing ground squirrels around critical infrastructure.

Pesticide Use Reduction by County Operations

Since FY 00-01, County operations have reduced their pesticide use by 79%. During the same time period, they have reduced their use of "Bad Actor" pesticides by 90.5%.

Departmental IPM Programs

Agriculture Department. The Department of Agriculture continues to concentrate its invasive weed program on contracted work for parkland and municipalities within the County.

Facilities Division. A new species, the three-lined cockroach, began invading County buildings a couple of years ago. Unlike other cockroaches, this species does not feed on human food and garbage. This makes controlling the three-lined cockroach with commercial baits very difficult because the insect is not interested in the food attractants in currently available cockroach baits. In 2017, Pestec, the County's IPM contractor, spent several days thoroughly sealing Building 500 at 255 Glacier in Martinez. This process appears to have worked very well, and no complaints about this cockroach have been lodged this year. Pest exclusion is successful because this insect lives outside in the mulch and leaf litter around the building.

Pestec and the Facilities Division worked hard this summer to exclude the rats that were plaguing the West County Children's Mental Health Clinic. The Spanish tile roof overhang where the rodents were getting in was stripped off, rat and bird debris was removed and the area sanitized, all entry holes were plugged, and the overhang was re-roofed with tar and gravel.

Special Districts. Over the summer last year, the owl box installed in Livorna Park in Alamo housed its first owl family. The box was cleaned in the fall of 2017 to ready it for new occupants, and it appears that owls did come back to use the nest box this summer. When the box was cleaned this fall, only a few feathers and an unhatched and dried up egg were found. It's unclear what might have happened to the family. We hope for a better outcome next year.

Vegetation Management. The Roadside and Flood Control Maintenance Division continues to incorporate grazing into its vegetation management program. This past fiscal year the Division used goats to abate weeds on approximately 224 acres, mostly on flood control facilities.

History of the IPM Advisory Committee

From 2002 to 2009, an informal IPM Task Force met to coordinate implementation of the IPM Policy that was adopted by the Board of Supervisors in November 2002. The Integrated Pest Management (IPM) Advisory Committee, a formal body, was created by the Board of Supervisors in November 2009. This report is the ninth annual status report from the IPM Coordinator and the IPM Advisory Committee.

Background on the IPM Advisory Committee

Purpose of the IPM Advisory Committee

The purpose of the Committee is to:

1. Protect and enhance public health, County resources, and the environment
2. Minimize risks and maximize benefits to the general public, staff, and the environment as a result of pest control activities conducted by County staff and contractors
3. Promote a coordinated County-wide effort to implement IPM in the County in a manner that is consistent with the Board-adopted IPM Policy
4. Serve as a resource to help the Agriculture and Public Works Departments and the Board of Supervisors review and improve existing pest management programs and the processes for making pest management decisions
5. Make policy recommendations upon assessment of current pest issues and evaluation of possible IPM solutions
6. Provide a forum for communication and information exchange among members in an effort to identify, encourage, and stimulate the use of best or promising pest management practices

Members of the IPM Advisory Committee

Currently the Committee has a total of 13 seats consisting of voting and non-voting members. In 2017, a seat for the County's Sustainability Commission replaced the seat for the Public and Environmental Health Advisory Board, which was abolished in 2016.

The 8 voting members include:

- One representative from Contra Costa Health Services
- One representative from the County Storm Water Program
- One representative from the County Sustainability Commission
- One representative from the County Fish and Wildlife Committee
- One representative from an environmental organization
- Three at-large members of the public

The 4 non-voting members include

- A representative from the Agriculture Department
- Two representatives from the Public Works Department (Facilities Division and Maintenance Division)
- One representative from the County's pest management contractor

The Committee also has one public member alternate who only votes if one or more of the three at-large public members, the Sustainability representative, or the Fish and Wildlife representative is absent from a meeting.

IPM Advisory Committee Priorities for 2018

The IPM Advisory Committee focused on the following three IPM program features:

- A. IPM decision-making—documenting pest management decisions in County IPM programs
- B. Outreach and education—reviewing and/or creating educational pieces for the public and County staff
- C. Pesticide use posting—reviewing and making recommendations on the policy and the sign

The Committee formed three subcommittees to work on these priorities, the Decision-Making subcommittee, the Outreach subcommittee, and the Posting Task Force.

2018 Accomplishments of the IPM Advisory Committee

Accomplishments of the IPM Committee

The IPM Advisory Committee (the Committee) held six regular meetings in 2018. The three subcommittees held a total of 17 meetings to address the above priorities. The Committee also developed a policy and procedure for deciding on topics and speakers for presentations to the full committee.

The IPM Coordinator serves as staff to the Committee and any subcommittees. According to the wishes of the Committee, the IPM Coordinator arranged for speakers for four of the six regular Committee meetings held during 2018. The following were the topics and presenters:

1. Ground Squirrel Control—History, Biology, and Implementing IPM, presented by Dr. Sheila Barry, U.C. Cooperative Extension Director, Santa Clara County
2. Investigating Rodenticide Pathways: a Research Update, presented by Dr. Niamh Quinn, Human-Wildlife Interactions Advisor, U.C. South Coast Research and Extension Center
3. Restoring Balance, Anacapa 10 years later (regarding rat eradication from the island), presented by Bruce Badzik, IPM Coordinator, National Park Service, Golden Gate National Recreation Area
4. Efficacy of a Steam Weeder in a Park Setting, presented by Dr. Cheryl Wilen, Area IPM Advisor, U.C. Cooperative Extension

In 2018, at the request of Supervisor Burgis the Committee developed a policy for choosing presentation topics and speakers. The Committee voted unanimously to approve the following policy:

IPM Advisory Committee Policy on Choosing Topics and Speakers for Meeting Presentations

- The Committee welcomes the participation of the public in suggesting topics for presentations. At either the November or January meeting, the Committee will discuss possible topics and solicit ideas from the public.
- Suggested topics and/or speakers can be sent to the IPM Coordinator throughout the year.
- The Committee prefers topics that further the work of the Committee or its subcommittees, but this does not preclude other topics of interest to the Committee.
- The Committee chair and the IPM Coordinator will work together to choose the appropriate number of presentations for the year taking into consideration the Committee's work schedule.
- The Committee chair and the IPM Coordinator will work together to choose suitable topics from among the suggestions from the Committee and the public, keeping in mind the mission statement in the Committee's bylaws. They will also choose speakers for each topic endeavoring to find presenters with the appropriate level of expertise.
- The ultimate decisions about topics and speakers will rest with the Committee Chair and the IPM Coordinator who will endeavor to follow the priorities set by the Committee.

Work of the subcommittees

Priority A: IPM Decision-Making

Through the work of the Decision-Making subcommittee, the IPM Advisory Committee

1. Continued to gain a better understanding of the complexities involved in pest management along the County's road and flood control rights-of-way
2. Continued to gain a better understanding of the challenges and complexities involved in the funding mechanisms for road maintenance
3. Reviewed, provided suggestions for improvement to, and approved two decision-making documents (a third document on ground squirrel management is still under review):
 - a. Vegetation management along County roadsides and road rights-of-way (Public Works Roadside and Flood Control Channel Vegetation Management Division)
 - b. Vegetation management along flood control channels (Public Works Roadside and Flood Control Channel Vegetation Management Division)

The detailed decision-making documents follow a form devised by the IPM Coordinator and previous members of the Decision-Making subcommittee. Decision-making documents are considered current as of the date on the document and may be updated in the future.

See Appendix A for the Decision-Making subcommittee's final report and the two final vegetation management documents.

Priority B: Outreach and Education

This year, the subcommittee chose to resume its focus on the County's most vulnerable populations through continuing outreach to in-home visitors with the goals of

1. Informing County staff of the public health risks of having pests in the home
2. Helping staff to recognize pest problems in their clients' homes
3. Making staff aware of the resources available for their clients

Using the pest management awareness PowerPoint created last year, subcommittee members and the IPM Coordinator provided training for a total of about 235 County employees. The presentations were uniformly well-received and participants said the information was very useful.

The subcommittee also chose to create a series of articles for the general public on IPM for common pests. These are being published in a variety of local media outlets.

See Appendix B for the Outreach subcommittee's final report and the outreach articles.

Priority C: Pesticide Use Posting Policy and Posting Sign

The Posting Task Force reviewed the County's posting policy and the posting sign with full input at each meeting from the public. The Task Force made recommendations for changes to both documents. The documents have been forwarded to the Public Works Department for their review.

See Appendix C for the Posting Task Force's recommended changes to the two documents.

2018 IPM Advisory Committee Attendance

The full committee achieved a quorum at each of its six meetings during the year. The subcommittees achieved quorums at all but one of their 17 meetings.

All seats on the full committee were filled until September when Jim Cartan, the chair, left to take a job in Alameda County. The terms for his seat (Environmental Organization representative), Public Member 3, and Public Member Alternate all end December 31, 2018. The IPM Coordinator recruited for these seats throughout the fall.

2018 Recommendations to the Board of Supervisors from the IPM Advisory Committee

The IPM Committee makes the following recommendations to the Board:

Regarding pest management:

1. Have County Departments continue to evaluate new and existing weed management tactics, considering efficacy, cost, impacts to the environment, and impacts to the public
2. Have County Departments include the Pest Management Flow Chart created by Public Works staff and the IPM Coordinator within all annual IPM and pesticide safety training programs for County staff
3. Allocate funding to the departmental IPM programs to enable pilot testing and evaluation of emerging and innovative pest management strategies and tactics

Regarding the posting policy and posting sign:

1. Revise the County's posting sign as indicated in Appendix C
2. Revise the County's posting policy as indicated in the tracked-changes document in Appendix C

3. Investigate posting on flood control channel access roads where people frequently walk, or on other rights-of-way that are frequently used as walking paths
4. Investigate the feasibility of erecting permanent signs and determine the most useful placement for those signs
5. Investigate a way for people to make a complaint online about pesticide use
6. Investigate a way for pesticide treatment notifications to be sent to people who sign up for email notices

2018 Accomplishments of the IPM Coordinator

In addition to staffing the IPM Advisory Committee and working on the three subcommittees, the IPM Coordinator worked on the issues listed below.

Bed Bugs

The common bed bug continues to be one of the most serious pests in the County, a pest that has provoked citizens to misuse pesticides to an alarming extent. Pesticides do not solve the problem, and in many cases make the problem worse. We increasingly see bed bugs affecting the citizens of Contra Costa who have the fewest resources to combat them.

Answering bed bug calls from citizens

The IPM Coordinator records each bed bug complaint, but it is unclear how many calls other staff in the County are receiving that are not forwarded to the IPM Coordinator. We also have no way of knowing how many calls city staff receive. In 2018, the IPM Coordinator investigated by telephone 51 bed bug calls (compared to 69 last year) and provided assistance to the callers. The IPM Coordinator also met in person with a number of citizens to answer questions about bed bugs and provide information on prevention and management.

Complaints come from all over the County. This year there were a number of callers from health clinics, dialysis clinics, and nursing homes asking for information on how to deal with patients that bring bed bugs with them.

Educating County staff and the public about bed bugs

The IPM Coordinator

- Continued to organize and staff the County's Bed Bug Task Force. The Task Force meets every two months and advocates for increasing public awareness of bed bug problems and for developing sound bed bug management policy throughout the County
- Maintained the County's bed bug website and added more information specific to various audiences. From July 1, 2017 through June 30, 2018, there were a total of 33,550 visits to the site from 14,925 unique visitors (County staff visits were excluded from this tally in order to obtain a closer approximation of the public use of the site). The total number of visits is around 4300 more than last fiscal year.
- Provided bed bug awareness training for the following:
 - John Muir Home Health program, for in-home visitors and their supervisors
 - Veterans Administration, Martinez Office, 2860 Howe Rd., for staff and clients
 - Riverhouse apartments in Martinez, for staff and managers
 - Behavioral Health staff
 - New Beginnings Clinic in Antioch (also spoke about lice and scabies), for staff
 - CVH Care in San Ramon, for staff
 - City of Berkeley Public Health staff
- With the assistance of Pestec, provided bed bug awareness and prevention training for managers at the Concord and Brookside Shelters and Calli House Youth Shelter.

Healthy Schools Act compliance for County Head Starts

In 2015, the IPM Coordinator worked to help the County's Head Start program come into compliance with new provisions of California's Healthy Schools Act. The IPM Coordinator developed an IPM plan for the Head Start program that includes identifying responsible parties for the provisions of the Act. The IPM Coordinator updates this plan each year. The IPM Coordinator provided staff with templates for pesticide application posting and for parent and staff notification of pesticide use.

The IPM Coordinator continues to oversee compliance with the Healthy Schools Act.

Advice and Outreach on IPM

The IPM Coordinator

- Worked as a cooperator on a grant awarded to the University of California Extension called "Bed Bug IPM Education to Support Multi-unit Housing;" the Principal Investigator is Andrew Sutherland who is a member of the IPM Advisory Committee
- Participated in the County's Sustainability Exchange and the Sustainability Exchange Steering Committee
- Attended bi-annual meetings of the Head Start Health and Nutrition Services Advisory Committee to report on bed bug and pest management issues
- Responded to a number of requests for pest management information from County staff and citizens
- Researched and compiled a notebook of information on herbicide alternatives to glyphosate for the Public Works and Agriculture Departments
- Provided the annual IPM update to the County's Fish and Wildlife Committee
- Provided the regular IPM program update to the Board of Supervisors through their Transportation, Water and Infrastructure Committee

Conferences and Trainings Attended

- IPM workshop in Oakland organized by East Bay Regional Parks
- Two meetings of the Bay Area IPM Coordinators' group (helped to organize the meetings)
- Field day on sampling for pesticides in water organized by Blankinship and Associates (Blankinship and Associates is the Public Works contractor for water sampling)
- IPM webinar—A Simple Solution to Problem Pests in Elderly and Disabled Public Housing, organized by Stop Pests in Housing

2018 Recommendations to the Board of Supervisors from the IPM Coordinator

The IPM Coordinator makes the following recommendations to the Board:

1. Fill the position of Public Works Vegetation Management Supervisor. There has not been a qualified person in this role for a year, and the IPM Coordinator is seriously worried about deterioration in the quality of the vegetation management program for roadsides and flood control channels without a knowledgeable and dedicated supervisor.
2. Fill other vacant positions on the Public Works Vegetation Management Crew, particularly the two Senior Vegetation Management techs. The crew has been decimated and cannot perform their vegetation management responsibilities. This is a dangerous situation for the County, especially considering the current wildfire threat in California. As the crew gets farther and farther behind in their work, the risk of fire and the length of time it takes to catch up on work both increase.
3. Fill vacant positions at the Grounds Division. The Division has 3 vacant gardener positions, a vacant pest specialist position, and a vacant irrigation tech position. The Division has 16 staff members now. In 1999, the Division had 26 regular staff, 6 to 8 seasonal temps, 2 irrigation techs, and 2 pest specialists. Although the Division does not manage all the land it did in 1999, it is struggling to accomplish current work with existing staff. Some staff are working 6 to 7 days a week, and this is not sustainable.

4. Provide funding and staff to explore alternatives to the herbicide glyphosate (Roundup). A recent lawsuit over glyphosate in San Francisco may raise the liability risk for the County. County Counsel and Risk Management are both aware of the lawsuit. If the Board is seriously interested in reducing the amount of glyphosate used on County property, it is imperative that staff determine what works best in various situations and what the additional cost will be. Staff in both the Grounds Division and the Public Works Maintenance Division are stretched very thin and would have great difficulty accomplishing current work *and* performing field trials.

Unfortunately, there is no one chemical and no one non-chemical weed management technique that will replace glyphosate. Many of the alternative chemicals and all of the non-chemical methods will require significantly more time, energy, and funds to maintain County property close to the safety and aesthetic standards we have now. This is the conclusion not only of the Contra Costa IPM Program, but of all jurisdictions around the Bay. There are trade-offs with the available alternatives. Some are more hazardous for staff to use, and without a conversion to battery-powered equipment, increased use of the mechanical weed management methods will have green house gas impacts. We are well aware of all the alternatives, and we continue to network with other counties and municipalities to understand how they are reducing their glyphosate use, the efficacy of the alternatives they are testing, and the extra costs incurred. However, the County must experiment with various chemicals and techniques on its own in order to determine how they will work in the Contra Costa climate and with County staff. With the increasing threat of catastrophic wildfires in the state, it would be prudent to carefully consider the implications of an increase in unmanaged weeds on County property.

5. Consider a program to help low-income elderly and disabled residents to prepare for bed bug treatments. San Francisco recently sent out a request for qualifications for exactly such a program to be administered through Adult Protective Services. See Appendix D for San Francisco's RFQ.

This vulnerable population is incapable of complying with many of the preparation requirements that most pest control companies insist on before proceeding to treatment. If preparation is not completed satisfactorily, the companies refuse to conduct the treatment. These people often have no relatives or friends who can help them, and the County has no program. Without help, this population is doomed to live with more and more serious bed bug infestations which rapidly spread to their neighbors and out into the community. As these serious infestations grow and proliferate throughout the County, people coming from such infested homes are much more likely to spread bed bugs to public transit, taxis, ambulances, clinics, waiting rooms, theaters, and friends and family.

The IPM Coordinator worked with staff from Behavioral Health this summer in an attempt to form a team to help tenants at Riverhouse in Martinez to clean and prepare for bed bug treatments. Because of a chronic infestation, Riverhouse residents have already carried bed bugs to County clinics. However, it became apparent that the enormity, difficulty, and hazards of the task were far beyond the scope of what Behavioral Health staff could be expected to do.

2018 Department IPM Program Highlights and Challenges

General Information about the Departments

Each Department has been working with the IPM Decision-Making subcommittee to create documents that record how pest management decisions are made for various pests and pest situations. Between 2010 and 2013, each Department also created an IPM Plan that covers their pest management goals, sites under management, general decision-making processes, key pests and best management practices, environmental stewardship, and training requirements.

In order to help new IPM Committee members understand the working of each department, the IPM Coordinator developed Department Overviews that cover department responsibilities in general, and pest management responsibilities in particular; funding sources and budget; pests under management and the methods used to manage them; and department challenges.

Each of the County's pest management programs must keep records of pesticides used and submit a report monthly to the County's Agriculture Department for transmission to the state Department of Pesticide Regulation. Once a year, the IPM Coordinator collates and analyzes this information for the annual report.

Agriculture Department

IPM Program Highlights

- Subcommittee work
The Department participated as a member of the Decision-Making and Posting subcommittees.
- Invasive weed program
The Department concentrates their efforts on contracted work for parkland and municipalities within the County. The Department has successfully reduced artichoke thistle and purple starthistle to a level at which private landowners can now manage these weeds on their own. To encourage ranchers to maintain a weed management program, the Department continues to recommend that landowners who lease property to cattlemen include invasive weed control in their lease agreements.

The Department's invasive weed treatments include hand removal, mechanical removal, and targeted treatment with low toxicity herbicides. With rare exception, pesticide treatment involved highly focused spot spraying using backpack sprayers.

- Artichoke thistle (*Cynara cardunculus*)
The Department surveys and treats properties under contract for East Bay Regional Park District, Mt. Diablo State Park, Town of Moraga Open Space, and other municipalities. In 2017, the department surveyed 41,714 acres at 44 sites, treating 45 net acres of infested rangeland. In 2018, the department surveyed 31,439 acres at 41 sites and treated 97 acres of infested rangeland.

Artichoke thistle is a highly invasive, non-native perennial weed that displaces herbaceous plants and annual grasses, decreasing the value of agricultural land, open space, and wildlands. Horses and cattle will not consume this thistle, and at high densities, the formidable spines on the leaves and stems and on the bracts around the flowers make it impossible for animals or people to walk through stands of the weed.

In 1979 Contra Costa County was identified as one of the most heavily infested counties in the state. At that time, at least 100,000 acres of land were infested with artichoke thistle. In that year, the Department began their management program in cooperation with property owners by using ground rigs and



Rangeland infested with artichoke thistle

helicopters to spray large swaths of land. The artichoke thistle infestation has been reduced so much that staff primarily spot treat individual plants using a backpack sprayer. Because seedlings form deep, fleshy taproots within the first year, mechanical or hand removal (digging out the plants) is not an option. Mowing and burning are neither practical nor effective.

- Japanese dodder (*Cuscuta japonica*)
Four years have passed since any of this “A” rated weed has been found in the County. Japanese dodder is officially considered eradicated in Contra Costa County; however, the Department continues to monitor previously infested sites to prevent the dodder from flaring up again.

Japanese dodder is an aggressive parasitic plant that has the potential to severely alter the composition and function of riparian areas. It also affects ornamental plantings and agricultural crops. Japanese dodder is native to Southeast Asia and was first discovered in the county in 2005.



First Japanese dodder find in CCC, 2005



Red Sesbania

- Red sesbania (*Sesbania punicea*)

This was the thirteenth year of red sesbania removal at the primary infestation site of Kirker Creek, Dow Wetlands. Staff surveyed 10 acres there and removed around 520 plants, down from 800 in 2017. All plants were removed by hand. Two full bags of seed pods were collected and disposed of.

Red sesbania is a small tree that has a high potential for environmental damage by displacing native plants and wildlife in riparian areas. Red sesbania is native to South America and is poisonous to humans, livestock, and many native vertebrates. It has been invading riparian areas locally. Red sesbania was first detected in California about fifteen years ago.

- Kangaroo thorn (*Acacia paradoxa*)
The County has one site infested with kangaroo thorn—the Mira Vista Golf Course in El Cerrito. The first removal of the existing infestation in 2005 involved 52 hours of staff time. At that time the infestation covered a little less than one net acre. Currently the infestation occupies only a fraction of that area. This year the new golf course superintendent had his staff remove most of the plants. Agriculture Department staff visited to monitor the site and removed another 53 plants by hand.



Kangaroo Thorn

- Purple starthistle (*Centaurea calcitrapa*)
Under contract to the East Bay Regional Park District, the Department surveyed 19 sites covering 2,538 acres and treated 5.81 net acres for purple starthistle in 2017. In 2018, the department surveyed 3,557 acres at 16 sites and treated 13 net acres of infested rangeland.



Purple Starthistle

This weed is a highly invasive non-native biennial that displaces annual grasses, desirable vegetation, and wildlife and decreases the production value of agricultural land. The plant also has allelopathic properties, which means it produces chemicals that inhibit the growth of other vegetation. Its large spines and high densities can form an impenetrable barrier to wildlife and livestock in open rangeland and to horses and hikers in parkland. Seeds can remain viable in the soil for ten or more years.

Purple starthistle in Contra Costa County is not as widespread as artichoke thistle. However, being a prolific seed producer, it has the potential to become as large scale a problem as artichoke thistle. Early identification and eradication of isolated populations is key to preventing its establishment in uninfested agricultural lands.

- Managing ground squirrels to protect critical infrastructure

The Department manages ground squirrels to protect critical infrastructure including levees, earthen dams, railroad beds, and roadways. The goal is to maintain a 100 linear foot buffer around the infrastructure to reduce ground squirrel damage to a tolerable level. Ground squirrel burrowing is the single biggest threat to California levees. Burrowing can compromise the earthen embankments and create pathways for water leakage that can undermine the structural integrity of levees, as well as earthen dams and railroad embankments. Burrowing and the resulting pathways for water erosion can also cause damage to, or sudden failure of, roadsides and other structures.

The Department has been taking steps to reduce the amount of rodenticide it uses for ground squirrel control in the County in order to mitigate harm to endangered and other non-target species. In 2013 the Department modified its broadcast baiting treatment procedure for safety and efficiency. Staff are applying bait more precisely and have reduced the number of bait applications in an area from three to two. Staff initially spread untreated rolled oats to draw out squirrels and make it easy to find areas of squirrel activity. Treatments are carried out by a team of two staff members so that one person can concentrate on driving while the other operates the bait spreader to apply bait only where ground squirrel activity is observed.

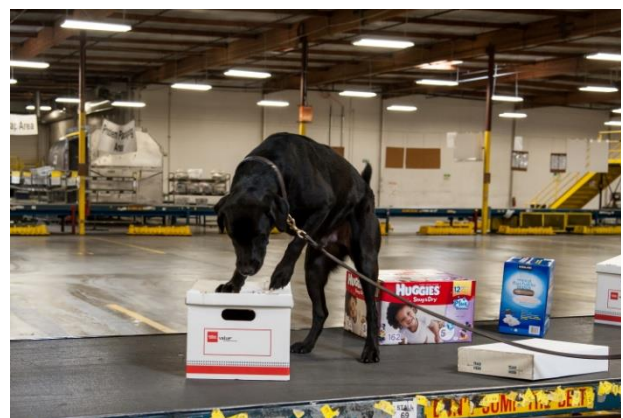
This year the Department has been working with the Decision-Making subcommittee to revise and enhance the Ground Squirrel Decision-Making Document. This will be completed next year.

- Exotic pest prevention

The Agriculture Department is the County's first line of defense against invading pests including insects, plants, and plant diseases. Every day staff perform inspections on incoming shipments at destination points, including nurseries, the post office, and express carriers (UPS, FedEx and others) to look for quarantined plants as well as pests that can hitchhike unnoticed on plant material and other items such as household goods.

In 2006, the Department was the first in the state to incorporate dog teams into parcel inspection.

Since then a number of other counties have followed Contra Costa's lead. The dogs greatly speed inspections and have significantly increased detections of quarantined plants and exotic pests. The dog teams are a shared resource with other Bay Area counties that do not have the expertise or resources



Cairo inspecting packages at UPS

to maintain an active surveillance program; therefore, as a result of Contra Costa's initiative, pest detections in those counties have increased.

This past year the Department inspected 9,900 shipments and rejected 123 after finding various pests.

The Department also deploys and services numerous traps for the purpose of early detection of 11 different serious insect pests. This past year the Department deployed 6,567 traps, and staff serviced those traps 93,906 times.

- Pesticide use
This year the Department used 94 lbs. of active ingredient as opposed to 68 lbs. in FY 16-17. This was due to an increase in the amount of herbicide used in the invasive weed program.

Agriculture Department Challenges

- Ground squirrel control alternatives
The department continues to search for alternatives to treated grain bait. Unfortunately, raptor perches and live trapping of ground squirrels have proved to be ineffective and/or too costly. Ground squirrels are native to this area and will never be eradicated. Since the Department aims to create a fairly narrow buffer zone around infrastructure, it is inevitable that in areas with ground squirrel pressure outside of the 100 ft buffer, the animals will eventually move back into the burrows left vacant by the squirrels that have been poisoned, although this happens slowly. This leads to a yearly management program. Altering the environment to prevent ground squirrel burrowing is difficult because of the extent of the infrastructure that must be protected and because the squirrels favor human-built infrastructure as sites for their burrows.
- Invasive weed management on private land
The Department budget, labor pool, and other mandates have curtailed invasive weed management on private land. Without diligent landowners who include invasive weed control in their land management, invasive weeds will proliferate throughout the County.

Public Works Facilities Division

IPM Program Highlights

- Area under management
The Facilities Division manages 147 sites that comprise almost 3.3 million sq. feet.
- Subcommittee work
A representative from Pestec, the County's structural pest management provider participated as a member of the County's Bed Bug Task Force and a member of the Outreach subcommittee. Pestec staff provided text and illustrations for several of the articles created by the Outreach subcommittee.
- New cockroach causing problems in County buildings
In 2015, the three-lined cockroach (*Phyllodromica trivittata*) began invading buildings across the County. Pest exclusion seems to be the only solution for this cockroach because no effective commercial baits exist for this insect.

In 2017, Pestec spent several days meticulously sealing all holes they could find on the exterior of Building 500 at 255 Glacier in Martinez. Building 500 had had the most numerous complaints about the cockroach. The three-lined cockroach is small and the holes were numerous. Pestec staff worked more than 51 person hours to complete this task. Since completion, there have been no complaints about three-lined cockroach from the building occupants. Pestec



Three-lined cockroach (*Phyllodromica trivittata*)

continues to monitor at the site for this and other insects with sticky traps. In 2017 they counted 105 three-lined roaches in their traps and in 2018, only 22.

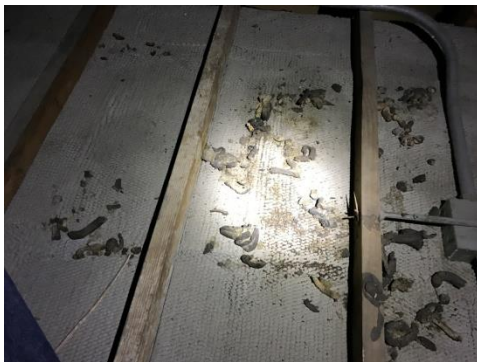
The three-lined cockroach is native to the Mediterranean and was first submitted for identification to the California Department of Food and Agriculture (CDFA) in September 2009. The samples were collected by Dr. William Shepard of the University of California at his residence in Pinole. Although this was the first official submission of this cockroach to CDFA, this insect was known to be in Marin County as early as 2004. In Europe and North Africa this cockroach is found in leaf litter and plant debris in dry habitats around the Mediterranean. This corresponds to the habitat in which the cockroach is found in Contra Costa.

- Roof repair and rodent exclusion at the West County Children’s Mental Health Clinic

This clinic in Richmond had been experiencing serious vertebrate pest problems for some time. Pestec had been trapping rats there, but it became apparent that the problem could not be solved without removing the Spanish tile roof overhang where the rats were getting into the building. Raccoons, opossums, birds, and probably cats had been entering the attic void under the tiles. If Spanish tiles on a roof are not blocked, rodents and other creatures can crawl into the holes created by



Roof tiles moved to reveal rodent access behind



Droppings and debris in the attic void

the curved tiles and gain access to voids and attic spaces, and from there, access to the building interior.

This summer Pestec worked with the Facilities Division to pest proof the attic void behind the roof overhang after the tiles were removed. Facilities had

the void sanitized and then County staff re-roofed the overhang with tar and gravel. Pestec sealed the few remaining gaps and holes after the roofing was completed.

There have been no complaints about rodents at the clinic since the repairs and pest proofing were completed. This is another example of permanent pest control being achieved through pest proofing and proper construction.

- Other pest exclusion jobs in the County

In April, Pestec completed bat-proofing at Employment and Human Services, 1650 Cavallo in Antioch. Pestec used approximately 976 ft of Xcluder Pest Block on the top ridge of the roof to keep bats out. Xcluder Pest Block is a stainless steel and poly mesh that can be stuffed into gaps to block entry for bats, rodents, and other creatures.

At the West County Detention Facility in Richmond, small birds were entering some of the modular housing units and dropping feces on the lenses of the security cameras. Pestec installed Bird Barrier Optical Gel disks on the tops of the cameras in January this year and the problem has been solved. Bird Barrier says the Optical Gel disks give off infrared light that looks like flames to a bird. The gel is made with citronella and peppermint oil as repellent, and the gel is sticky in case a bird actually lands on a disk. The disks are supposed to last 2 to 4 years and can be used in difficult situations where traditional bird barriers cannot be installed.

- Increased ant infestations in County buildings

For the third year in a row, County buildings experienced serious and repeated Argentine ant invasions, especially in the late summer and early fall. The worst problems are mainly in dry, hot East County. The problem is not so much that people are leaving food and garbage out that attract ants, but that any small amount of water in the surrounding landscape, from irrigation or other sources, is an ant magnet. Ants establish large nests near these water sources and then easily move into buildings to wander around and annoy people.

Pestec has been using various ant baits, mainly with the active ingredient boric acid or borate. They have supplemented the baiting with spraying a botanical oil insecticide on ant trails, in cracks and crevices, and on any nests they can find. Pestec experimented over the summer with the boric acid concentration in the baits and tried 1%, 2.5%, and 5%. The 1% bait was well accepted by the ants, but spoiled too quickly in the heat, and was not controlling the ants fast enough. The 5% bait seemed to be less attractive to the ants, and the concern with such a high percentage is that the ants will die before they get to the nest and feed the bait to their nest mates to kill the nest. The 2.5% was attractive, but Pestec was still having difficulty controlling the ants with that bait.

- Cockroach cleanout at Brookside Shelter

Pestec performed an extensive treatment of the Brookside Homeless Shelter in Richmond to remove a large cockroach population, mostly on the men's side of the building.

- Structural IPM program pesticide use

In FY 17-18, 10 lbs. of pesticide active ingredients were used in and around the approximately 2.75 million square feet of County buildings that Pestec is contracted to manage. This is 7 lbs. less than last fiscal year. Ant baits and soap solution accounted for 68% of the pesticide used. Pestec continues to successfully manage rats and mice exclusively with traps, sanitation, and pest proofing.

- Bed bugs in County buildings

In January and February, Pestec and the IPM Coordinator visited the Brookside and Concord Shelters to provide staff with refresher trainings in managing bed bugs.

There were 19 calls from County staff about bed bugs this year, but only 4 were confirmed to actually be bed bugs.

- Pittsburg Health Clinic found a bed bug in a waiting room in February. Pestec inspected the area and dusted the baseboards with Cimexa (silica aerogel). EVS cleaned the floor and the chairs. Pestec left sticky traps, and no more bed bugs have been found in the monitors or seen by staff.
- In February the Concord Homeless Shelter had a small bed bug outbreak, but shelter staff cleaned, disinfected, and steamed the 21 affected beds. From time to time since, bed bugs have been found on beds, but staff have been diligent about cleaning beds and preventing an infestation.
- The Brookside Shelter found bed bugs on one bed this year, but staff disinfected and steamed the bed without needing Pestec's help.
- Concord Adult Mental Health found a bed bug on a wall in March. Pestec inspected and confirmed the identification and left sticky monitors. Staff was instructed to clean thoroughly and no bed bugs have been found since.

Facilities Division Challenges

- Pest exclusion in County buildings

This will always be a challenge, but the Facilities Division is doing a good job addressing the issues Pestec finds during inspections of County buildings. The Division's first priority is to address health, safety, and access issues. As can be seen this year, pest proofing has a significant impact on reducing pest problems.

- Ant baiting
Pestec continues to review the products used for baiting along with their baiting strategy in order to try to provide better control for the very large ant populations seen in the last three years. They continue to work on a proprietary bait station that they hope will be more effective in the County.
- Bed bugs in County buildings
The biggest challenge with bed bugs continues to be in the County shelters. This year we had one small bed bug outbreak at the Concord shelter, but staff handled the situation well. Keeping staff up-to-date on their bed bug prevention training is the key to keeping bed bugs as occasional invaders of shelters and not permanent infestations.

Public Works Grounds Division

IPM Program Highlights

- Premium mulch from pallets and dead trees
This year the Grounds Division ground about 800 cubic yards of woodchips from pallets, trees downed in storms, and trees killed by the drought. Considering that high quality wood chips cost at least \$32/cu. yd. delivered, this represents around \$25,600 worth of mulch for the County.



Woodchips stockpiled at the Grounds Corporation Yard



Logs awaiting chipping

The County's tree removal contract includes transport back to the Grounds Corporation Yard so the logs can be easily chipped. PGE, Davey Tree, and the Public Works tree crew deliver logs to the Corporation Yard that are too big for their chippers. Pallets come from a number of sources.

Staff continue to spread this woodchip mulch at numerous sites throughout the County for weed prevention and water conservation. They have spread approximately 400 cu. yds. (that covers approximately 32,400 sq. ft. at 4 inches deep) so far this year.

Where possible, trees are chipped and used onsite; otherwise chips are hauled from the Corporation Yard. The chips are of very high aesthetic quality because they are a uniform color and don't contain bits of trash or leaf debris. Sites that receive this mulch have been very pleased with the look. This can be important in gaining acceptance for landscaping with fewer plants and more mulch.



Wood chips used for weed suppression and water conservation in a County landscape

- Using recycled water in County landscapes

There are now seven sites using reclaimed water:

1. 2467 Waterbird (Grounds Division offices)
2. 920 Mellus (Sheriff/Coroner)
3. 2530 Arnold (Summit Center--Assessor, Redevelopment, Risk Management)
4. Hemme Station Park in Alamo
5. Livorna Park in Alamo
6. Martinez Detention Facility
7. Pittsburg Health Center

- Irrigation Management

The Division has installed Weather Trak 3, a smart irrigation system at 8 County sites (and 2 more are under consideration). This system can be programmed at the controller or remotely using a mobile device. The system uses weather data, and information about soil type and plants to deliver the right amount of water throughout the year. Staff can monitor irrigation performance from their mobile phones and receive alerts on their phones if there are irrigation problems. Systems can be shut down remotely if a repair is needed, which saves an emergency trip to the site. This system conserves water and grows healthier plants, plants that are more resistant to pests.

- Interfacing with structural pest control

Staff have learned to pay special attention to keeping plants, bushes, and trees away from structures to prevent pest access to buildings.

- Managing gophers with trapping and CO₂

The Division continues to use trapping and CO₂ for gophers in County landscaping. Trapping is the main method. The CO₂ device would be used if there were large areas with extensive infestations.

- Pesticide use in FY 17-18

In 2010, the Grounds Division consciously decided to eliminate the use of any insecticides, miticides, fungicides, or rodenticides in their work. The Division has chosen to manage arthropod pests and plant diseases in County landscapes solely with good horticultural practices. If plants are severely affected, they are removed.

Herbicides are the only pesticide used by the Division, and this fiscal year, staff used 34 more pounds than in FY 16-17. This still represents a 64% reduction in pesticide use compared to FY 00-01 when the County started collating pesticide use records. The Division continues to improve the condition of County properties in order to move away from crisis management and back to preventive maintenance. For a number of years the lack of funding made it impossible to properly manage weed problems around County buildings and in the Special Districts the Division is responsible for. This has changed, but the seeds from plants that went unmanaged for years continue to produce large populations of weeds.

- Where herbicides are *not* used

The Grounds Division does not use pesticides on turf or around any Head Start or school facilities. Weeds at these sites are managed by hand pulling or mechanical means.

Weeds in large open areas that the Division is responsible for are managed mechanically by Bodhaine Discing/Grading and The Landscape Company.

Grounds Division Challenges

- Staffing needs

The Grounds Division now has a Maintenance Supervisor and is in the process of hiring 2 lead gardeners to fill recently vacated positions. They hired 3 new gardeners to fill positions that were vacated earlier this year. They have 1 irrigation specialist presently, but really need 2. The Division is lacking a Pest Specialist but hopes to fill that position soon. They have 1 temporary groundskeeper who they hope will apply for permanent status. Even so, the Division still has 3 vacant gardener positions.

Drought stress in the County

The Division continues to deal with a large number of diseased, stressed, and dying trees, although the death rate is slowing. Many redwoods in the County are partially dead and it could take from 5 to 10 years for them to die completely. Unless failing trees pose a hazard, the Division will take them down over time since it will be easier aesthetically and financially. It has been challenging to try to drought-proof landscapes, but the woodchips the Division is producing play an important role.

Public Works Department Roadside and Flood Control Channel Maintenance Division

IPM Program Highlights

- Subcommittee work
Staff worked with the IPM Coordinator to finalize the decision documentation for vegetation management on County roads and on flood control channels.
- Annual habitat assessment refresher training
This year, Public Works Maintenance employees again attended the annual refresher training on habitat assessment for endangered and threatened species in order to comply with the California Department of Fish and Wildlife (CDFW) Routine Maintenance Agreement (RMA). The RMA stipulates that before any work can commence in an area, an assessment must be conducted to identify endangered species habitat. Crews perform habitat assessments, and as endangered species are identified, they are reported to CDFW, which then provides County staff with guidelines to move forward with work. These guidelines may include full time monitoring of the jobsite by a professional biologist.
- Flood control vegetation and erosion management using California natives
This is the fifth year the County Flood Control District has been partnering with The Restoration Trust, an Oakland-based non-profit organization, in a native planting experiment along Clayton Valley Drain (near Hwy 4 adjacent to Walnut Creek). The study is examining the survival of several California natives:

Clayton Valley Drain, looking west and downstream. The majority of the dark green vegetation is the planted native perennials.



Santa Barbara sedge, (*Carex barbarae*), common rush (*Juncus effusus*), Baltic rush (*Juncus balticus*), field sedge (*Carex praegracilis*), and creeping wild rye (*Leymus triticoides*).

Over the 5 years since the original planting in December 2013, the Contra Costa County Flood Control District, The Restoration Trust, Boy Scout Troop 239, and hundreds of other hardworking volunteers have planted tens of thousands of native grass and sedge plugs, and removed thousands of pounds of trash.

The Public Works Maintenance Division continues, at the request of The Restoration

Trust, to occasionally spray the area for broadleaf weeds to reduce competition and provide the native plants with an advantage. The Division has also been providing weed management by mowing and grazing, as requested.

The native species that were planted spread from underground rhizomes that anchor the soil and provide erosion control. They are perennial species that stay green year around and thus are resistant to fire. The plants are compatible with flood control objectives since they do not have woody stems, and during flood events, they lie down on the slope which reduces flow impedance. They are not sensitive to broadleaf-specific herbicides.

This project has been the focus of considerable effort over the last 5 years, with volunteers planting, and County staff watering, weeding, grazing, and applying herbicides. The natives on the 0.2 mile stretch the project covers have not expanded enough to out-compete the weeds growing in this area. This is an admirable restoration project, but as an alternative to mowing or spraying the 76 miles of flood control channels in the County, establishing native vegetation would take a very long time and would be an arduous and expensive task.

- Barn owl and kestrel boxes on County property

The barn owl box installed at Livorna Park in August 2016 by Boy Scout Troop 815, in cooperation with the County Clean Water Program and the Public Works Special Districts Division, housed its first family of owls in 2017. The box was cleaned in October 2017 to ready it for new occupants. In October 2018, the nest box was inspected and cleaned again. Sadly, only a few feathers and an unhatched, dried egg were found. It appears that a nesting pair did use the box, but were unsuccessful.

Public Works Special Districts, which manages Livorna Park, no longer uses rodenticides in any of its parks and other Special Districts.

In response to drastic population declines of the American kestrel, the Contra Costa County Flood District partnered with a local citizen science group called “The Kestrel Campaign” to monitor reproductive activity in the greater Mount Diablo area, using dozens of nest boxes. Two nest boxes were permitted in the Kubicek Flood Detention Basin in Walnut Creek in 2017. The boxes are strategically placed along ideal habitat in an attempt to collect data for nation-wide research.

The American kestrel is the smallest falcon in North America. This beautiful bird of prey was once abundant in our region but has



American kestrel

declined precipitously by 69% due to loss of habitat, fewer viable nesting cavities, and secondary poisoning due to eating prey affected by rodenticides.

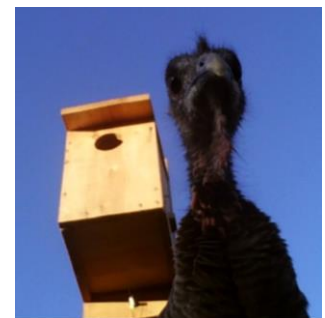
Kestrels did not move into the Kubicek Basin boxes over the spring of 2018; however, three successful boxes just south of our boxes fledged several new falcons each, confirming the flood basin boxes are appropriately placed.



Kestrel box in Kubicek Basin

The Kubicek Basin is situated between the foothills of Mount Diablo and the suburbs of Walnut Creek and is naturally

home to a diverse variety of wildlife, including black-tailed deer, coyote, bobcat, alligator lizard, opossum, raccoon, rabbit, rodents, birds of prey, and so much more. Interestingly enough, a wildlife camera attached to one of the boxes snapped evidence of other feathered visitors to our two nest boxes: northern Flicker woodpeckers took nesting material out of the boxes, an owl frequently used the box as a night hunting perch, and a curious turkey wandered through.



A turkey stops by for a selfie

- Grazing as a vegetation management tool

The Public Works Maintenance Division continues to use grazing as an effective tool for vegetation management, mainly on flood control facilities. Using grazing to manage vegetation is complicated and



Pine Creek before grazing

very dependent on site-specific conditions. Grazing is not appropriate in all situations and could not, for instance, be used on the side of County roads without endangering both the animals and motorists. Many factors raise or lower the cost per acre



Pine Creek after grazing

for grazing, including the size of the parcel (at larger sites the cost of moving the goats in and out is spread over a number of acres), whether the animals can easily enter the site, the amount of fencing necessary, how many times the animals must be moved within the job site coupled with the ease with which that can be done, whether water is available or must be trucked in, and the season in which the animals are being used (costs are lower when demand is lower, e.g., in fall and winter).

Ideal grazing situations for fire prevention

The Division has found that the following situations are ideal for meeting fire prevention standards with grazing:

1. Sensitive sites with endangered or threatened species where mowing could kill animals and where herbicides are restricted
2. Sites where access is difficult for people or machines
3. Sites with steep slopes or uneven terrain that would have to be mowed by hand and that present dangerous working conditions for staff
4. Sites that are too wet for either hand or machine mowing

Areas not suited for grazing

1. One to two acre sites are not economical because of the cost of getting the animals in and out.
2. Unfenced areas along roadsides are not appropriate because of safety issues and because of the cost of fencing off a narrow band of land and continually moving animals along the road.
3. In the winter, grazing animals cannot be used on the rain softened creek banks and the ground adjacent to the banks because of the danger of causing erosion.

Grazing costs

Costs vary widely among sites depending on the factors mentioned above. This year costs ranged from \$2533/acre to graze Pine Creek Dam to \$411/acre to graze Walnut Creek channel.

- Using mulch for weed suppression

The effects of the drought continue to kill thousands of trees in the County. The Division chips prunings and dead trees into mulch that is being used more extensively along fencelines above flood control channels and in empty County parcels. Logs that are too large for the Division's chipper go to the Grounds Division for chipping and use on County landscapes.



Mulch along the access road on Walnut Creek

- Removing beetle infested and damaged trees
This year the Division again spent considerable time removing damaged trees and dead trees infected with pine bark beetles. These trees must be chipped or otherwise disposed of onsite to prevent spread of disease or infestation. These problems have been exacerbated by the prolonged drought of the previous years that stressed and weakened many trees in the County.



Pine bark beetle damage

- Fire fuel reduction challenges in 2018
Fire prevention weed abatement is time-sensitive, and historically the deadline has been July 1. If weed abatement was not completed by that date, the County could incur fines from the fire districts. In FY 17-18, there was a large volume of weeds to be managed. Again, this year fire districts were requiring weed abatement to be completed in some areas by May 30. The Routine Maintenance Agreement with the state Department of Fish and Wildlife stipulates that no work can begin in Contra Costa flood control facilities prior to April 15. Once again, it was impossible for staff to complete all the mowing in the short four to six-week window available before the deadline. Because some flood control channels were mowed so early in the season, crews had to return to mow them a second time because vegetation had grown back.

Along flood control facilities and access roads, the weed abatement crew is applying pre-emergents around gates, fencelines, and flood control structures so that when mowing crews come through, they can spend less time hand mowing which makes it more likely that the County will meet its fire fuel reduction deadlines.

Some of the pre-emergent herbicide applications along roadsides failed because there was not enough rain at the right times to activate the herbicides in the soil. Staff went back to these areas to spot spray weeds that had broken through the pre-emergent treatment.

- Buffer zones for certain pesticides enjoined by the courts
Several lawsuits brought by environmental organizations against the EPA have been temporarily settled by the delineation of buffer zones in and around habitat for a number of endangered or threatened species in the Bay Area. The Department continues to work within the guidelines of the injunctions to assess work sites and implement buffer zones before using any of the enjoined pesticides.

Roadside and Flood Control Maintenance Division Challenges

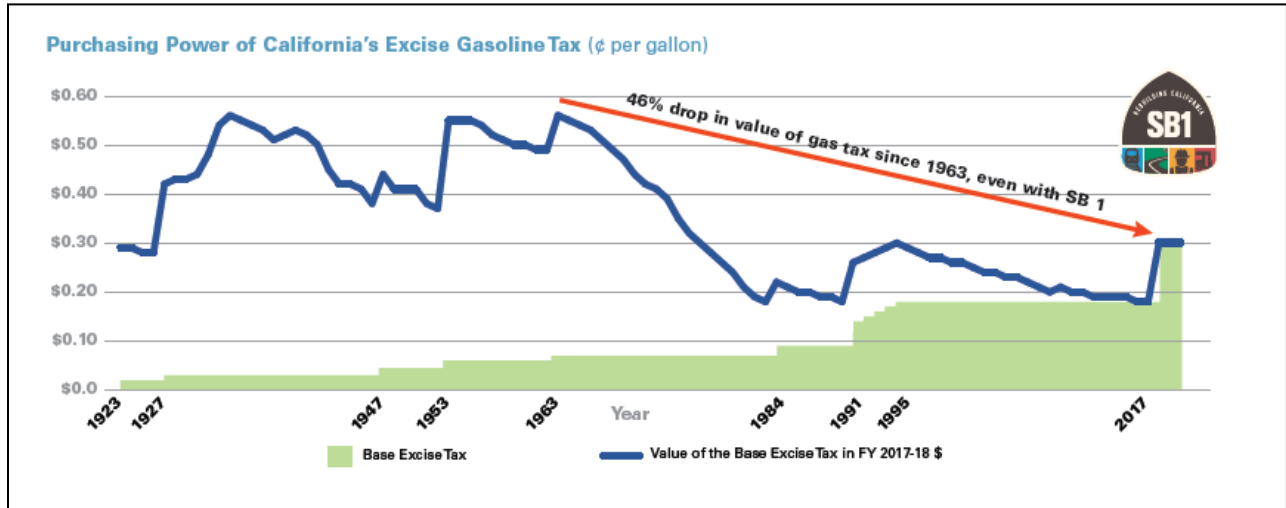
- Lack of staff and a supervisor for the Vegetation Management Crew
 1. The crew has been missing a Vegetation Management Supervisor for a year.
 2. There are 2 Senior Vegetation Management Technician positions. Both are vacant.
 3. There are 3 Vegetation Management Technicians. Two positions are filled and one is vacant
 4. There are 4 Maintenance Worker positions. All 4 positions are filled.

The Division is having considerable difficulty filling the supervisory and staff positions that are open. This seriously impacts the work the crew is able to accomplish.

- Declining funds for road maintenance
Road maintenance, including vegetation management, is funded solely from the gasoline tax. The County does not contribute any money from the General Fund to road maintenance except for a small amount going to specific drainage projects.

Funds coming from the gas tax have been declining for years because the tax had not been increased. At the same time, cars have become much more fuel efficient. In addition, there are many electric vehicles on the road that pay no gas tax for maintenance of the roads on which they drive.

In December 2016 California passed SB 1 (which sustained an attempt at repeal in November 2018) that will help counties with road maintenance; however, funds must first be applied to bring the Average Pavement Condition Index up to 80 (Contra Costa's index is in the 60s) before any money would be available for vegetation management.



- Cost implications of regulations Compliance with Routine Maintenance Agreement (RMA) requirements has considerable effect on the cost of operations. As mentioned above, work within CDFW jurisdiction requires a habitat assessment prior to start of work so that RMA-listed species are not harmed. If crews identify listed species at job sites, consultation with CDFW can result in using alternative work methods that were more costly.

Four years ago, the CalFire increased the safety requirements for mowing, and these measures continue in effect. These measures help prevent fires and injuries to workers but increase the cost of mowing.

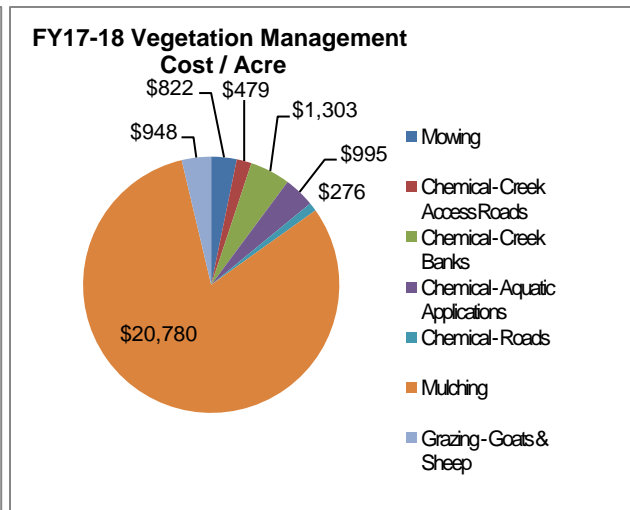
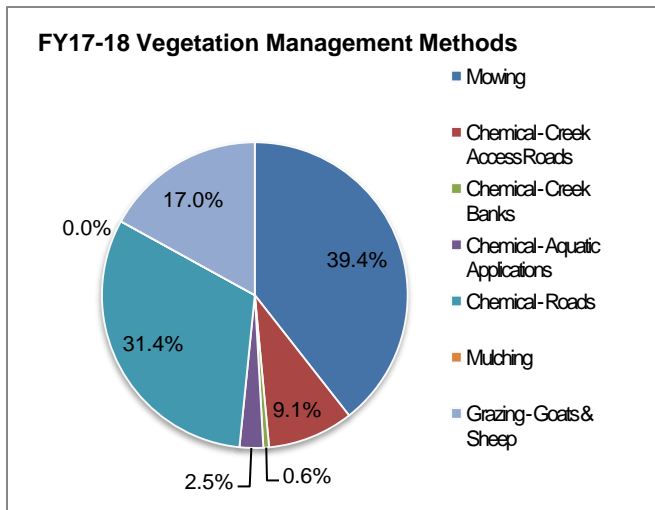
1. Crews must have access to a water truck or a 5-gallon backpack type water fire extinguisher.
2. A worker trained in using the fire-fighting equipment on the truck must be added to a mowing crew to continuously monitor the weather and serve as a lookout.
3. If the height of the vegetation requires that a worker scout the ground ahead of the mower, a separate person must be assigned to perform that function.
4. If the ambient air temperature reaches 80° F, the relative humidity is 30% or lower, or if wind speeds reach 10 mph or higher, mowing cannot begin or must stop immediately.

- Cost implications of various management techniques
 In FY 17-18, 75% of the Division's expenditures on vegetation management was spent on non-chemical treatment methods, on 56% of the total acres treated (see the table below for details).

**A Cost* Comparison of Vegetation Management Methods for Roadsides and Flood Control Channels
Fiscal Year 2017-18**

Vegetation Management Method	Acres Treated	% of Total Acres Treated	Total Cost for all acres treated	Cost/ Acre	% of Total Cost for all acres treated
Chemical Treatment - Roads	415	31.4%	\$114,365	\$276	13.3%
Right of Way Mowing (mainly flood control facilities)	521	39.4%	\$428,384	\$822	49.9%
Chemical Treatment – Flood Control Access Roads	120	9.1%	\$57,539	\$479	6.7%
Chemical Treatment – Flood Control Banks	8	0.6%	\$10,421	\$1303	1.2%
Grazing (mainly Flood Control facilities)	224.4	17.0%	\$212,800	\$948	24.9%
Chemical Treatment - Aquatic Applications	33	2.5%	\$32,848	\$995	3.8%
Mulching (flood control access rds & access rd shoulders)	0.1	0.0%	\$2,078	\$20,780	0.2%
Totals	1321.5		\$858,435		

* The cost figures above for each method include labor, materials, equipment costs, contract costs (for grazing), and overhead, which includes training, permit costs, and habitat assessment costs. Licensing costs for staff members are paid by the individual and not by the County. The cost of the Vegetation Management Supervisor when he supervises work is not included in any of the figures, but is comparable among the various methods.



Note: The legend to the right of the pie chart identifies slices starting from 12 o'clock and continuing clockwise.

With limited budget, staff, and equipment, the Division must make strategic decisions about where to deploy their resources in order to meet their mandates of managing vegetation for fire and flood prevention and for road safety. The Division is managing weeds in a biological system, and factors such as weather, rainfall, weed growth patterns, timing for optimum weed susceptibility to the treatment method, and threatened and endangered species issues must also be factored into management decisions. The pie charts above further illustrate the cost of various management techniques and show how the Division has allocated resources.

- **Weather**

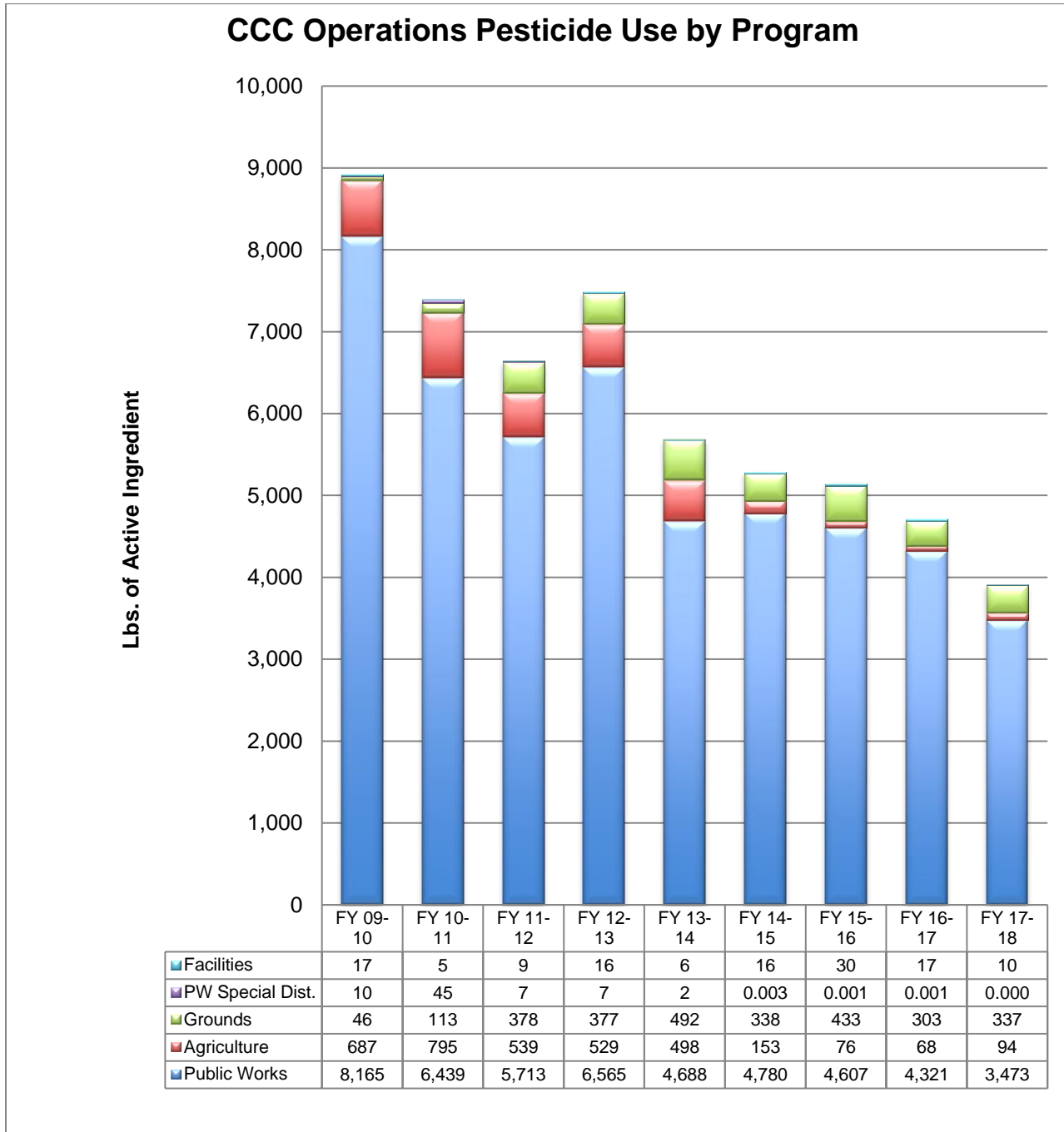
Mowing, as well as the application of herbicides, is highly dependent upon weather conditions. Weather can affect when herbicides can or must be applied and can also affect when mowing can or should occur. Weather can substantially alter the size and type of the weed load or its distribution over time and space. The Department has a limited capacity to use mowing because of a number of factors including vacancies in vegetation management staff, the Department’s limited budget for weed abatement, and the limited number of tractor mowers (two). The Department faces a continued challenge of balancing the use of

herbicides to control weed growth with the Department's capacity to mow or to graze with goats or sheep within the confines of the budget and the timeline to prevent fires.

Using mowers during hot, dry weather also poses a hazard of its own: sparks caused by the metal mower blades striking rocks or metal debris can ignite tinder-dry grass.

Pesticide Use by Contra Costa County Operations

Starting in FY 00-01, the IPM Task Force annually reported pesticide use data to the Transportation, Water, and Infrastructure Committee for the County departments involved in pest management. The IPM Coordinator has continued this task. Below is a bar chart of pesticide use over the last 9 years. For information on how pesticide use is reported in California and for more detailed pesticide use data including total product use, see Appendix E and the separate County Pesticide Use Spreadsheet.



Decrease in Pesticide Use by County Operations

Since FY 00-01, the County has reduced its use of pesticide by 79%. Note that Departmental pesticide use fluctuates from year to year depending on many factors.

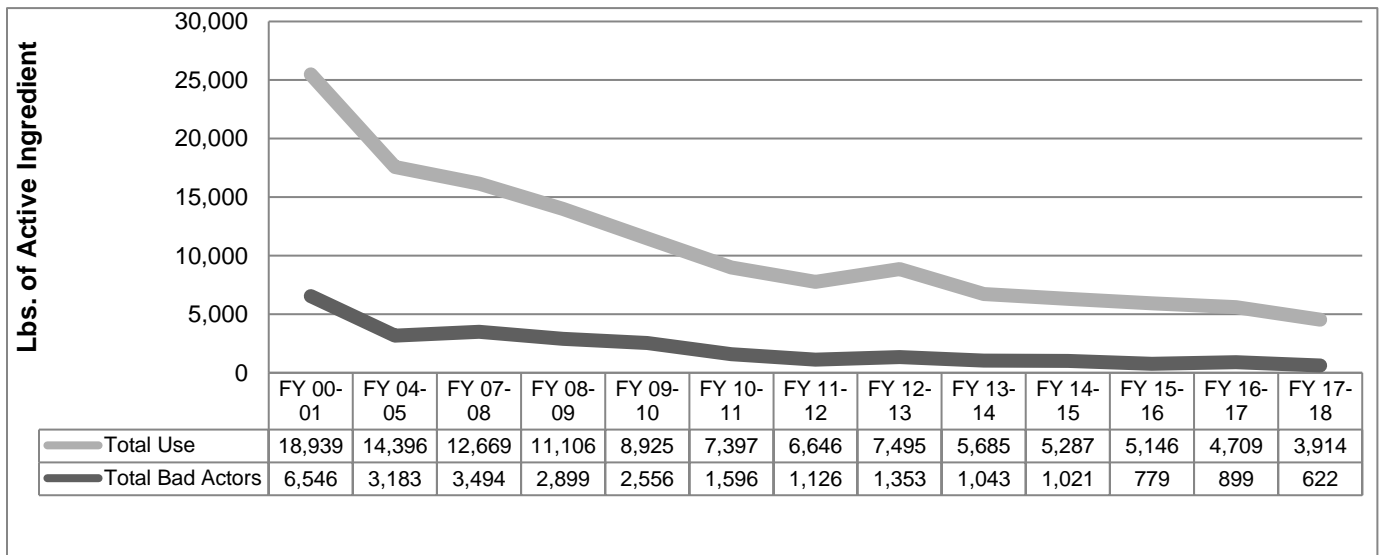
Concern about “Bad Actor” Pesticides

There has been concern among members of the public and within the County about the use of “Bad Actor” pesticides by County departments. “Bad Actor” is a term coined by the Pesticide Action Network (PAN) and Californians for Pesticide Reform to identify a “most toxic” set of pesticides. These pesticides are at least one of the following: known or probable carcinogens, reproductive or developmental toxicants, cholinesterase inhibitors, known groundwater contaminants, or pesticides with high acute toxicity.

Parents for a Safer Environment has requested that additional pesticides be reported as “Bad Actors”, but in 2013 after studying this request and consulting Dr. Susan Kegley, who was instrumental in developing the PAN pesticide database, the IPM Advisory Committee decided that the County will report as “Bad Actor” pesticides only those that are designated as such in the PAN database.

The County’s use of these particular pesticides has decreased dramatically since FY 00-01 as shown in the graph below. In Fiscal Year 00-01, County operations used 6,546 lbs. of “Bad Actor” active ingredients and this year used 622 lbs, a 90% reduction.

CCC Operations Total Pesticide Use vs. ‘Bad Actor’ Use



Rodenticide Use

The Department of Agriculture uses rodenticide for ground squirrels whose burrowing threatens critical infrastructure in the County, such as roads, levees, earthen dams, and railroad embankments. The amount of rodenticide used by the Department increased by 0.75 lb due to larger ground squirrel populations. This is probably caused by the wet winter in 2016-17 and the average rainfall in 2017-18 that produced abundant vegetation. Ground squirrels feed on green vegetation and later in the year on seeds and nuts. The increased availability of food undoubtedly allowed more ground squirrels to survive and breed.

The Grounds Division and Special Districts have eliminated the use of rodenticides and manage vertebrate pests with trapping and CO₂.

“First generation” vs. “second generation” anticoagulant rodenticides

Anticoagulants prevent blood from clotting and cause death by internal bleeding. In small doses they are used therapeutically in humans for a number of heart ailments. Vitamin K₁ is the antidote for anticoagulant poisoning, and is readily available. (There are some types of rodenticides for which there is no antidote.)

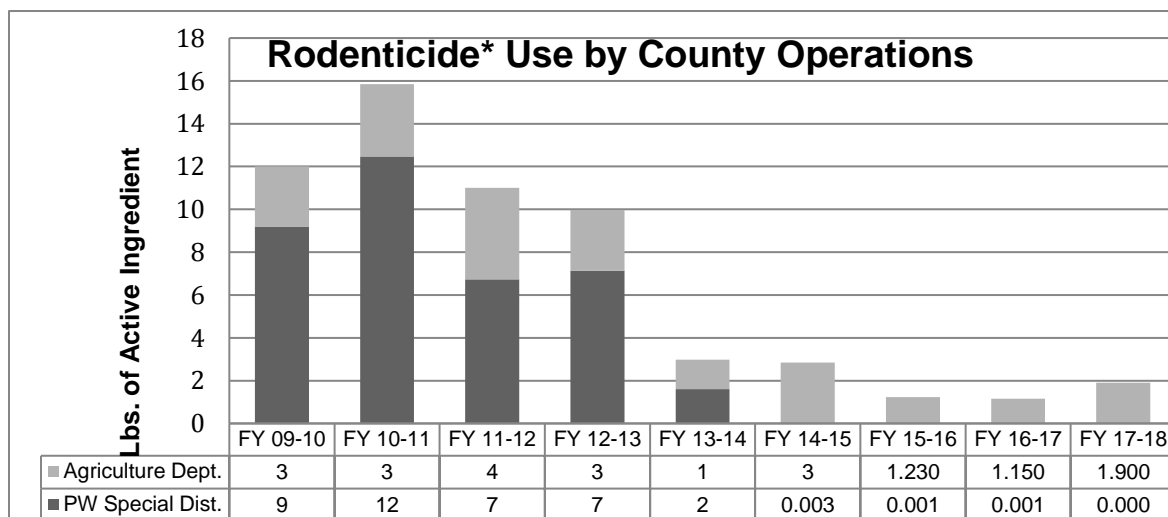
When anticoagulant rodenticides are necessary, the County uses first generation anticoagulant baits. First generation anticoagulants require multiple feedings over several days to a week to kill.

Second generation anticoagulants are designed to kill after a single feeding and pose a greater risk to animals that eat poisoned rodents. If the rodent continues to feed on a second generation anticoagulant after it eats a toxic dose at the first meal, it may build up more than a lethal dose in its body before the clotting factors run out and the animal dies. Residues of second generation anticoagulants may remain in liver tissue for many weeks. Because rodents poisoned by second generation anticoagulants can carry a heavier load of more toxic poison that persists in their bodies for a long period of time, the risk of death is increased for a predator that eats rodents poisoned by second generation anticoagulants.

The first generation materials are cleared much more rapidly from animal tissues and have a much reduced potential for secondary kill when compared to second generation materials. However, the first generation anticoagulants can also kill animals that eat poisoned rodents.

As noted earlier in this report, the Agriculture Department has revised its ground squirrel baiting procedure to reduce the amount of treated grain used. The Agriculture Department also mitigates the risk of secondary poisoning by performing carcass surveys in all areas treated with anticoagulants whether or not it is required by endangered species restrictions.

Below is a bar chart to illustrate the decline in rodenticide use by the County.



* The Agriculture Department uses primarily diphacinone treated grain bait, but in years past they also used some gas cartridges as fumigation agents.

From FY 14-15 to FY 16-17, Special Districts used only diphacinone, but in years past, their use was more than 99% aluminum phosphide, which is a fumigant and not an anticoagulant rodenticide. Special Districts no longer uses any rodenticides. All vertebrate pest management is accomplished by trapping.

Trends in Pesticide Use

A change in pesticide use from one year to the next does not necessarily indicate a long-term trend. Long-term trends are more meaningful than short-term changes. It is important to understand that pesticide use can increase and decrease depending on the pest population, the weather, the invasion of new and perhaps difficult to control pests, the use of new products that contain small percentages of active ingredient, the use of chemicals that are

less hazardous but not as effective, the addition or subtraction of new pest management projects in a department's workload, and cuts to budgets or staff that make it difficult or impossible to use alternate methods of control.

The County's pesticide use trend follows a trend typical of other pollution reduction programs. Early reductions are dramatic during the period when changes that are easy to make are accomplished. When this "low-hanging fruit" has been plucked, it takes more time and effort to investigate and analyze where additional changes can be made. Since FY 00-01, the County has reduced its use of pesticide by 79%. If further reductions in pesticide use are to be made, it will require time for focused study and additional funding for implementation.

Departmental Integrated Pest Management Priorities For 2019

Agriculture Department Priorities for 2019

- Continue the County’s highly effective invasive weed program
The Agriculture Department will give priority to weed work under contract with local parks and municipalities. Artichoke thistle and purple starthistle will remain the primary target weeds for the 2019 season. The Department has moved toward a more collaborative role with private landowners and will encourage landowners to take the primary role for weed control on their properties. The Department will continue their surveillance for and removal of any Japanese dodder, red sesbania, and kangaroo thorn.

The Department will continue to respond to any "A rated" weed that enters the county with surveys and treatment.

- Ground Squirrel Management Program

The Agricultural Department will continue to provide information and resources to the County, municipalities, growers, and the general public on the control of ground squirrels. Without effective control measures, ground squirrels will damage crops, and infrastructure such as earthen dams, levees, and highways. The economic and environmental consequences would be substantial.

Over the years the Department has experimented with raptor perches, exclusion techniques, and live trapping as alternatives to traditional baiting. Although some of these methods could provide reasonable control with small, limited infestations of ground squirrels, all of these methods are considerably more costly and less effective on a larger scale. The Department continues to search for the most effective, least toxic, and most economical ways to reduce ground squirrel damage to a tolerable level within our county by consulting with researchers, the University of California Cooperative Extension Service, the California Department of Food and Agriculture, other counties, and with industry.

Public Works Department Priorities for 2019

Facilities Division

- Continue working to fix structural deficiencies in County buildings
- Continue monitoring the bed bug situation in County buildings and providing awareness training if necessary

Grounds Division

- Continue removing hazard trees and trees killed by the drought; where appropriate and where there is funding, trees will be replaced with drought tolerant species
- Continue installing smart irrigation controllers throughout the County, and continue to conserve water as much as possible
- Continue diverting green waste from the landfill by chipping prunings and using the material in place
- Continue chipping large logs from PGE, tree companies, and Public Works Maintenance for mulch—the mulch will be used to suppress weeds wherever possible
- Continue hand weeding wherever and whenever feasible—using mulch facilitates hand weeding
- Continue educating the public to help them raise their tolerance of weeds
- Continue working on the rejuvenation of aging County landscapes
- Continue raising the level of service on County property

Roadside and Flood Control Maintenance Division

- Fill the Vegetation Supervisor position
This position has been vacant for several years. The County has had difficulty in attracting candidates who possess the minimum requirements for the job.
- Fill all other vacant positions
- Work to insure continuity in the vegetation management program
This is extremely important for maintaining the high quality of the vegetation management program, especially considering the current staffing problems.

Appendix A.

- **Report of the Decision-Making Subcommittee to the Contra Costa County IPM Committee**

- **Decision-Making Documents**
 - **Vegetation on Roadsides and Rights-of-Way**
 - **Vegetation on Flood Control Channels**
 - **Contra Costa County General Pest Management Decision Tree**

Report of the Decision-Making Subcommittee to the Contra Costa County IPM Advisory Committee.

Prepared by Andrew M. Sutherland, Subcommittee Chair, and Tanya Drlik, IPM Coordinator

November 2018

Members

Susan Captain

Jim Cartan

Jim Donnelly – vice chair

Andrew Sutherland - chair

Larry Yost

The Decision-Making Subcommittee, as a service to the Contra Costa County IPM Advisory Committee and the residents of the County, works to document situation-specific pest management decision-making processes and to revise existing County decision documents. The subcommittee is charged with making recommendations that may improve the County's pest management processes while preventing or minimizing associated negative impacts.

Since our last report (November 2017), the Decision-Making Subcommittee has met seven times: March 1, April 5, May 10, June 14, August 2, September 6, and November 6, 2018. For this report, recent activities have been grouped into three broad themes below: weed management by the Department of Public Works along rights-of-way, ground squirrel management by the Department of Agriculture, and generalized common elements of decision documents and the decision-making process.

Weed management along rights-of-way

The subcommittee continued review of decision-making for vegetation management by the Department of Public Works along County rights-of-way. This large pest management program was divided into two decision documents: *Weed Management along Roadsides* and *Weed Management along Flood Control Channels*. The revision of the roadsides document began during spring 2017, while revision of the flood control document began during summer 2017. Drafts of both documents were approved by the subcommittee on May 10, 2018. These documents, as approved, are both attached. Key findings from the subcommittee are as follows:

- Funding is the limiting factor for decision making within these vegetation management programs. As explained by Allison Knapp (Public Works) during a presentation in September 2017, virtually all funding for this work is provided by gasoline taxes. The revenue from these taxes has been decreasing steadily due to improvements in vehicle fuel efficiency and increases in electric, hybrid, and alternative fuel vehicles.
- Mowing is considered a viable alternative to herbicide application in some areas, but terrain, endangered species issues, funding, and labor shortages preclude widespread use.
- Grazing using goats is another tactic that is used as extensively as possible.

Ground squirrel control by the Department of Agriculture

The subcommittee began review of this pest management situation and the associated 2013 decision document *Ground Squirrel Management for Critical Infrastructure*. This pest situation is responsible for the largest County use of anticoagulant rodenticides (1.9 lbs of the active ingredient diphacinone in FY 17-18). The nontarget issues surrounding use of anticoagulants continue to be important to the County and its residents. The review process began on April 5, 2018 and is ongoing. Key findings from the subcommittee are as follows:

- The Agriculture Department manages ground squirrels as a service for the Public Works Department and for two other County entities: the West County Detention Facility (WCDF) and the Byron Boys Ranch. The WCDF and the Byron Boys Ranch do not constitute *critical infrastructure* and will be considered within a separate decision document. Work on this document, tentatively entitled *Ground Squirrel Management: On-Call Service*, will begin when the *Critical Infrastructure* document has been completed and approved.

- Some management tactics considered as alternatives to anticoagulants, such as fumigation (gas cartridges, carbon monoxide, carbon dioxide), are most effective when carried out in spring when soil is moist. All Agriculture Department staff are committed to the noxious weed program during spring. This labor shortage presents a major limitation to the adoption and widespread use of these alternatives by the Agriculture Department. Because of this labor limitation, the County has traditionally used diphacinone-treated grain bait to manage ground squirrels around critical infrastructure. Baiting is only effective from around June through October when grasses are dry (ground squirrels prefer green grass over rolled oat bait when grass is available).
- Monitoring for ground squirrels along County roads and flood control channels is carried out by road maintenance and vegetation management crews in the Public Works Department. Monitoring for ground squirrels at the two County airports is done by airport staff. Just prior to treatment, the Agriculture Department monitors sites they have been alerted to by other County staff as well as sites that have historically been infested by ground squirrels to ensure squirrels are present and will consume grain bait. Because Agriculture Department staff are unavailable during the spring, staff could not respond to a sighting of ground squirrel damage at that time unless it were an emergency. For the *on-call services* noted above, the Department may not know about ground squirrel issues until a large population causes problems, precluding the use of effective management tactics only appropriate for smaller populations. The County has transferred the responsibility for monitoring and managing ground squirrels at the WCDF and the Byron Boys Ranch to Pestec, whose staff regularly visit these sites.
- The subcommittee decided to develop a decision tree that will be associated with *Ground Squirrel Management for Critical Infrastructure*. Work on this decision tree has not yet begun.

Generalized common elements of the County's IPM decision-making processes

During discussions associated with review of the pest management situations and decision documents above, several resources, such as decision trees, checklists, and generalized language, were revised or developed that will improve common elements of the County's decision documents and overall IPM program extension:

- A generalized decision tree entitled *Pest Management Flow Chart* was reviewed (beginning in September 2017), revised, and approved on June 14, 2018.
- A discussion on October 12, 2017 about posting requirements, posting policies, public access, and sensitive sites led to the formation of the *Posting Task Force*. This group solidified our understanding of these issues and made its own recommendations to the IPM Advisory Committee.
- A discussion on March 1, 2018 about public information on known hazards associated with pesticide applications led to the development of new language and new resources associated with the decision document section *Chemical Controls*. These new items were incorporated into the rights-of-way decision documents approved during 2018 and noted above.
- A discussion about presence of known aquifers, reservoirs, wells, and infiltration basins on May 10, 2018 led to new language associated with *sensitive sites*.
- A comprehensive checklist that helps users define *sensitive sites* within pest management programs was developed during spring 2018 and approved by the subcommittee on August 2, 2018.

Subcommittee Recommendations

The Decision-Making subcommittee recommends the following:

- The IPM Advisory Committee convene a panel of vegetation managers from neighboring counties to hear about IPM strategies used elsewhere; this would inform the County's existing programs, present available alternatives, and provide recommendations for the future
- The IPM Advisory Committee form an ad hoc subcommittee to arrange the above panel and choose the speakers
- The County continue to evaluate new and existing weed management tactics, considering efficacy, cost, impacts to the environment, and impacts to the community
- The roadside and flood control weed management documents be reviewed every three years, given ongoing development of new methods, changing environmental conditions, and potential changes to budgets

- The sensitive site checklist be included on all County decision documents
- The *Pest Management Flow Chart* be made publicly available on the County's IPM program web pages and that a link be provided within each decision document in the section 'What are the management goals?'
- The *Pest Management Flow Chart* be included within annual IPM and pesticide safety training programs for County staff
- The new language and new resources developed for the roadside and flood control decision documents be included in all County decision documents
- All IPM decision documents, once approved, be made publicly available on the County's IPM program web pages
- The County Board of Supervisors allocate funding to the departmental IPM programs to enable pilot testing and evaluation of emerging and innovative pest management strategies and tactics
- The IPM Advisory Committee make the Decision Making subcommittee a standing subcommittee

Contra Costa County
DECISION DOCUMENTATION for VEGETATION MANAGEMENT
on County Roadsides and Road Rights-of-Way

Date: February 3, 2017 (last revision on 11/29/18)

Department: Public Works Maintenance Division

Location: Unincorporated rural areas

Situation: Vegetation management along roadsides and road rights-of-way

Note that management decisions are site specific for roads. Not every management technique will work equally well at all sites and for all weeds, and the costs of each technique will vary depending on the site. The County has developed a flowchart to aid the decision-making process.

See the CCC General Pest Management Decision Tree for a summary of the decision-making process.

<p>What are the management goals for these sites?</p>	<p><u>To reduce fire risk:</u></p> <p>The County is subject to the regulations of 8 separate fire districts. The following are the districts and the links to their regulations (if available):</p> <ul style="list-style-type: none"> • Contra Costa Fire Protection District (ConFire) http://www.cccfpd.org/pdfs/WA-2-minimum-standards-17.pdf • Crocket-Carquinez Fire Protection District (regulations not apparent on website) • East Contra Costa Fire Protection District (same regs as ConFire) • Kensington Fire Department (same regs as Richmond) • Moraga-Orinda Fire District http://www.mofd.org/literature_196457/Exterior_Hazard_Abatement_Standards • Pinole Fire Department (regulations not apparent on website) • Richmond Fire Department http://www.ci.richmond.ca.us/DocumentCenter/View/38822 • San Ramon Valley Fire Protection District -- http://www.firedepartment.org/civica/filebank/blobload.asp?BlobID=4207 <p>The County manages to the most restrictive regulations of the 8 fire districts, which are described in the County's fire protection ordinance:</p> <p style="padding-left: 40px;">Title 7, Division 722, Section 320.4.1 says, "No person who has any ownership or possessory interest in or control of parcel of land shall allow to exist thereon any hazardous rubbish, weeds, trees, or other vegetation that constitutes a fire hazard."</p> <p style="padding-left: 40px;">Title 7 Division 722, Section 320.4.2.1 says, "The Fire Code Official is authorized to cause areas within 10 feet (3048 mm) on each side of portions of streets which are improved, designed, or ordinarily used for vehicular traffic to be cleared of flammable vegetation and other combustible growth."</p> <p>The Public Works Department tries to maintain an 8 foot strip, where practical, of vegetation-free ground (not including trees, shrubs, or landscaping) along each side of a road. Fire district regulations stipulate that vegetation management must typically be completed by May 1, and at the very latest by July 1, in order to avoid abatement notices from the local fire district. The May 1 deadline is a recent change and makes it more difficult for the crew to perform all the needed work between the time that weather conditions permit work and May 1.</p> <p><u>To maintain road safety:</u></p> <p>The County maintains road safety in accordance with the County's best management practices. The following are some of the management practices:</p> <ul style="list-style-type: none"> • Prevent sight line obstruction of signs, pullouts, ditches on sides of the road, obstacles on sides of the road (California Streets and Highways Code, Sections 1480-1485) • Prevent a perceived narrowing of the roadway from large plants growing close to the side of the road that can force drivers to move to the center of the road • Maintain adequate road drainage (vegetation can clog ditches and drains)
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	<ul style="list-style-type: none"> • Keep pavement intact as long as possible <ul style="list-style-type: none"> ○ Plants next to pavement or growing into cracks in pavement can allow water to move down under the asphalt causing it to buckle and crack more. ○ Weeds growing along the shoulder can hasten the deterioration of the shoulder which can lead to hazardous roadside conditions, especially for bicycles, but also for cars if the drop from the road surface becomes large. <p><u>To reduce liability for the County:</u> Fires, accidents, and law suits against the County are a regular and costly occurrence.</p> <p><u>To prevent the movement of invasive plants along roadway corridors:</u> Invasive plant seeds and parts can be carried far and wide by animals, wind, and water moving along roadsides. Even vehicle tires and undercarriages, bicycle tires, and people's footwear can move weeds from one place to another.</p> <p>With these management goals in mind, the most appropriate management tactics are chosen based on cost, efficacy, impacts to the environment, public health, and other impacts to the public.</p>
Who has jurisdiction over the areas in question?	<p>The County owns the roads and rights-of-way and is responsible for their maintenance. The local fire districts are responsible for insuring that property owners and managers follow their regulations.</p> <p>Note: In general, in unincorporated areas where there are curbs, gutters, and sidewalks, the homeowner is responsible for vegetation management.</p>
Number of road miles under management	<p>The total number of road miles is 660 (a road mile includes both sides of the road).</p> <p>Approximately 325 to 375 road miles are under active vegetation management (the number changes with the weather and other factors from year to year). Not all of the 660 road miles are rural roads, many are in unincorporated residential areas where the Public Works Department does not manage roadside vegetation.</p>
Number of staff available for vegetation management activities	<p>Currently the Division has no Vegetation Management Supervisor; the position has been vacant for a year. There are 2 Senior Vegetation Management Technicians; both positions are vacant. There are 3 Vegetation Management Technicians; 2 positions are filled and the other is vacant. The 4 Maintenance Worker positions are filled.</p>
Source of funding	<p>Road maintenance, including vegetation management, is funded solely from the gasoline tax. The County does not contribute any money from the General Fund except for a small amount going to specific drainage projects.</p> <p>The funds coming from the gas tax have been declining for years because the tax has not been increased, while at the same time cars have become much more fuel efficient. In addition there are many electric vehicles on the road that pay no gas tax for maintenance of the roads on which they drive.</p> <p>With the passage of California Senate Bill 1 in December 2016, the County will see a much needed increase in funds for road maintenance; however, the extra funds must first go to bring the average Pavement Condition Index up to 80 or better. At present, CCC's arterial Pavement Condition Index is in the 60s. Thankfully, SB 1 sustained an attempt at repeal in November 2018.</p> <p>The following are the main provisions of SB 1:</p> <ul style="list-style-type: none"> • \$0.12 increase in gasoline tax/gallon, with inflation adjustment • Increase to the Vehicle License Fee of between \$25 and \$175, with inflation adjustment, depending on the cost of the vehicle • \$0.20 increase in the tax/gallon on diesel • An increase in vehicle registration fee for 2020 and later model zero-emission vehicles of \$100 with inflation adjustment • The bill would impose various requirements on the department and agencies receiving these funds. The bill would authorize a city or county to spend its apportionment of funds under the program on transportation priorities other than those allowable pursuant to the program if the city's or county's average Pavement Condition Index meets or exceeds 80.
How often is the site monitored?	<p>All sites in the county are monitored every few days. The Vegetation Management Supervisor spends part of every day inspecting roadways on a rotating basis. The road crews, the road crew supervisors, and the vegetation management crew are all trained to recognize vegetation issues on roadsides and road rights-of-way and to report them to the Supervisor. Monitoring information is recorded on the Vegetation Management Supervisor's Daily Report.</p> <p>If a new weed species is found, the Supervisor identifies and researches the weed. If he/she cannot identify the specimen, he/she consults the County Department of Agriculture. If a weed on the California Department of Food and Agriculture A-rated list is found, the County Agriculture Department is also consulted.</p>
Weeds have been identified as the following:	<p>Any species that can pose a fire danger or sight obstruction, including volunteer trees and otherwise desirable species, will be managed to maintain the integrity of the road and road shoulder.</p> <p>Key weeds are listed below. The list is continually updated as vegetation changes.</p> <p>Invasive species:</p> <ul style="list-style-type: none"> • Yellow starthistle (<i>Centaurea solstitialis</i>) • Purple starthistle (<i>Centaurea calcitrapa</i>) • Russian thistle, or tumbleweed (<i>Salsola tragus</i>)

	<ul style="list-style-type: none"> • <i>Kochia (Kochia scoparia)</i> • Stinkwort (<i>Dittrichia graveolens</i>) • French broom (<i>Genista monspessulana</i>) • Pepperweed (<i>Lepidium latifolium</i>) • Tree of heaven (<i>Ailanthus altissima</i>) • Algerian ivy (<i>Hedera algeriensis</i>) • Himalayan blackberry (<i>Rubus armeniacus</i>) <p>Other species:</p> <ul style="list-style-type: none"> • Poison oak (<i>Toxicodendron diversilobum</i>) • Poison hemlock (<i>Conium maculatum</i>) • Mare's tail (<i>Conyza canadensis</i>) • Mustard (<i>Brassica</i> spp.) • Mallow or cheeseweed (<i>Malva</i> spp.) • Various grasses <p>The Department does not have a specific invasive weed management program; however, the vegetation management crew is trained to look for invasives when they are out working.</p>																						
Are populations high enough to require control?	<p>The Vegetation Management crew manages vegetation as necessary to meet the management goals noted above.</p> <p>At times, vegetation re-growth may be sparse enough and the fire risk low enough that a decision might be made to leave the re-growth alone.</p>																						
Are these sensitive sites?	<table border="1"> <tr> <td> <p>Are any areas “highly sensitive sites” as defined by PWD Environmental staff? A highly sensitive site contains a known habitat for, or is close to sightings of, endangered or threatened species. Refer to the attached flow chart for an outline of how sensitive sites are determined and handled.</p> </td> <td>No</td> </tr> <tr> <td> <p>Are any areas under the Routine Maintenance Agreement with Fish and Wildlife?</p> </td> <td>It's possible if a road shoulder is under the riparian canopy.</td> </tr> <tr> <td> <p>Are any areas part of the court-ordered injunctions? (see: https://www.epa.gov/endangered-species/interim-use-limitations-eleven-threatened-or-endangered-species-san-francisco-bay)</p> <p>Some areas are included in the red legged frog injunction. 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Areas where people walk are the following:</p> <ul style="list-style-type: none"> • Iron Horse Trail • Clyde Pedestrian Path • Delta De Anza Trail (county only maintains a small portion) </td> <td>Occasionally</td> </tr> <tr> <td> <p>Are they near an above ground drinking water reservoir?</p> </td> <td>Yes, some</td> </tr> <tr> <td> <p>Are they near crops?</p> </td> <td>Yes, in some cases.</td> </tr> <tr> <td> <p>Are they near desirable trees or landscaping?</p> </td> <td>Yes, occasionally</td> </tr> <tr> <td> <p>Is the soil highly permeable, sandy, or gravelly?</p> <p>Yes, in some areas. Hoffman Road is one.</p> </td> <td>Yes</td> </tr> <tr> <td> <p>Is the ground water near the surface?</p> </td> <td>Unknown, other than Hoffman Road</td> </tr> <tr> <td> <p>Are they within a Groundwater Protection Area?</p> </td> <td>No</td> </tr> </table>	<p>Are any areas “highly sensitive sites” as defined by PWD Environmental staff? A highly sensitive site contains a known habitat for, or is close to sightings of, endangered or threatened species. Refer to the attached flow chart for an outline of how sensitive sites are determined and handled.</p>	No	<p>Are any areas under the Routine Maintenance Agreement with Fish and Wildlife?</p>	It's possible if a road shoulder is under the riparian canopy.	<p>Are any areas part of the court-ordered injunctions? 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	Are they within an infiltration basin?	No
<p>What factors are taken into account when determining the management technique(s) for vegetation?</p>	<ul style="list-style-type: none"> • Species of plant • Stage of growth • Plant density • Plant location (accessibility, topography, adjacent properties) • Weather (precipitation, wind, temperature, relative humidity) • Road condition—if a road is in very poor condition, vegetation growing close to the edge can cause more damage than if a road is in good condition. Every 7 to 10 years, the road is scheduled for resurfacing and there must be a clear corridor for the work. • Personnel available to perform the management activities when they are needed • Safety (for the public, staff, wildlife, adjacent property, the general environment) • Proximity to water resources and wildlife • Aesthetics of the site • State and local regulations • Budget available 	
<p>Are special permits required for work?</p>	<p>If the Department were to use Vanquish (dicamba), which is restricted because of volatility, it would need to file with the County Department of Agriculture a Notice of Intent (NOI) to apply the material. Note that the Department has not used Dicamba in 5 years.</p>	
<p>Which cultural controls were considered?</p>	<p>Mulching</p> <ul style="list-style-type: none"> • It is difficult to contain mulch on the side of the road. There is a danger that it could clog drainage ditches and drains, run off into waterways, present road hazards to bicyclists. • Wood chip mulch is combustible and would only add to the fire danger. • The cost of buying and/or spreading mulch along roadsides would be prohibitive and very dangerous for the crew. <p>Weed Barriers</p> <ul style="list-style-type: none"> • Rubber mats can be used around guard rails, but are very expensive. Weeds can grow up through the joints in the mats and on top of the mats in accumulated soil and organic matter. Rubber mats are combustible, and the resulting fire releases noxious fumes. • Fabric barriers are expensive and very costly to install, hard to anchor to the ground, and vehicles can tear them, rendering them ineffective. • Weed seeds can germinate in the organic matter that accumulates on the weed barrier or is intentionally placed there. <p>Planting Desirable Species</p> <ul style="list-style-type: none"> • This has been used in some limited circumstances in Yolo County, but these areas are still managed with mowing, burning, and spot applications of herbicide. • Establishment takes time, money, water, and attention. • The plants must conform to very limiting specifications so as not to be sight hazards, fire hazards, etc. They could not be planted adjacent to the road. <p>CONCLUSIONS:</p> <p>Mulching and weed barriers are problematic on roadsides. The Department has not found any areas where these would be appropriate.</p> <p>Planting desirable species is not used at this time because the Department must maintain a vegetation-free zone next to the road.</p>	
<p>Which physical controls were considered?</p>	<p>Pruning: This is used on large vegetation where needed to meet management goals.</p> <p>Mowing by machine: Mowing is used on French broom to reduce the amount of vegetation before herbicide applications. Mowing is also used for blackberries and for willows in place of, or before, herbicide treatment. Mowing on the Iron Horse Trail is contracted out.</p> <p>Machine mowing is not used more extensively because of the following:</p> <ul style="list-style-type: none"> • Terrain is a limiting factor. Many of the County's rural roads have unimproved shoulders that are very uneven and have trees growing on them. This makes mowing very difficult. • Mowing may not meet fire regulations in many areas. • Mowing in areas with threatened or endangered species can kill these creatures. • Mowing usually requires more than one pass per treatment which increases cost. Depending on the terrain, it may take several passes per treatment to mow down the vegetation. • With mowing there is always the risk of starting a fire when mower blades create sparks from striking rocks or other obstacles. This is a regular occurrence with both machine and hand mowing. • Recent changes in safety regulations for mowing have increased costs and the number of staff needed for each mower. This may have the effect of further limiting the work window. 	

	<ul style="list-style-type: none"> • Mowing can also transport invasive plant seeds and parts from one area to another. • There is a narrow window of time when mowing is most effective for meeting fire regulation deadlines. This is the same window of time in which flood control channels must be mowed. If mowing is done too early, the vegetation can grow back and require mowing a second or even third time to meet fire regulations. The Department does not have enough crew and equipment to complete all work by mowing in that space of time. • It is more costly than herbicide treatment. See Table 1 below. • The County's Climate Action Plan requires a reduction in greenhouse gas emissions, and increasing mowing would substantially increase those emissions. <p>Mowing by hand: This has limited use on roadsides, but it can be useful around guard rails.</p> <ul style="list-style-type: none"> • Mowing by hand (weed whacking) can be particularly dangerous for employees: <ul style="list-style-type: none"> ○ Traffic presents serious hazards. ○ Workers can sustain injuries from slipping on steep or rocky terrain. ○ Workers can sustain injuries from debris being thrown up and onto workers: rocks, glass, barbed wire, pieces of metal and pieces of mower blades. • Hand mowing is even more costly than machine mowing. • There is always a risk of starting a fire. <p>Grazing</p> <ul style="list-style-type: none"> • Logistics and safety on the side of a narrow country road are very difficult. The liability to the County is high. • Grazing animals can distract motorists, which can be a danger to both the animals and motorists. The animals temporarily remove the emergency parking available on the shoulder. • Grazing is costly for this application, especially because grazing a narrow strip necessitates moving the animals frequently, which is expensive. (See Table 1) <p>Burning: Besides being dangerous, this technique could not be used on roadsides because the Bay Area Air Quality Control Board would not allow it.</p> <p>Electrothermal weeding (Ubiquetek): This method uses a probe carrying electricity at a high voltage (3,000 to 5,000 volts) and low amperage (0.5 to 2 amps) to heat plant tissue and kill both roots and above ground plant material. The probe must contact each individual weed. This method is more efficient than steaming or flaming weeds, but would be very slow compared to mowing by machine or hand. High voltage can be lethal, so the device is potentially dangerous to the operator. This method also poses a fire risk because of the intense heat at the point of contact with the plant that can produce sparks and small flames. Currently there have been no independent evaluations of this method. At this time, the Department does not consider this a viable tactic for use on roadsides.</p> <p>Steam weeding (Weedtechnics): This method works by sending water under pressure through a diesel boiler and then out through hoses to an application head. The water comes out at 205 to 218 degrees Fahrenheit. This method is slower than other weed management techniques (it appears that the applicator must drive around 2 mph to treat effectively). A new model (the SW3800KD) is advertised as killing weeds faster. It uses 30 L of water per minute, and with a 1000 L water tank (apparently the largest size available), staff would have to refill the tank about every ½ hour. This tactic should be considered as a contact-only treatment and should not be expected to kill underground portions of the plant. Treatment would have to be repeated periodically during the season. At this time, the Department does not consider this a viable tactic for use on roadsides.</p> <p>Concrete under guard rails or cement treated base for road shoulders: These treatments are long lasting, but very expensive. Currently the County is not installing any new guard rails or shoulders.</p> <p>It is quite difficult to make repairs to concrete slabs if they crack or erode. Once cracks form, weed seeds can sprout in the cracks. Repairing concrete or cement-treated base used on the road shoulder is also very difficult, especially if damage occurs at the edge from erosion. Everything must be torn out and replaced.</p> <p>See Table 1 for more information on costs.</p> <p>CONCLUSIONS: Pruning and machine mowing are used by the Department where they are appropriate. At this time, the other techniques are too dangerous, too costly, or not practical. The County continues to explore new tactics as they emerge.</p>
Which biological controls were considered?	Biological controls are not applicable in this situation unless a particular invasive weed is the target, and it has an available biological control.
Which chemical controls were considered? For more information on pesticides listed here visit the National Pesticide Information Center (NPIC). This is a joint project of Oregon State University and the US	<p>During many years of research, experience, and experimentation, including consulting the literature, researchers, and colleagues about materials that are labeled for, and effective on, weeds in rights-of-way, the Division has chosen the herbicide options listed below. The Department continues to consult researchers and colleagues, as well as new literature, to identify new choices that may be more effective, more environmentally friendly, and of lesser human toxicity.</p> <p>Pesticides may potentially exhibit both acute and chronic toxicity. The Signal Words below refer to acute hazards. For information on chronic toxicity, contact NPIC (info on left).</p> <p>Herbicides and application methods are chosen that prevent or minimize the potential for drift and exposure to humans and wildlife. As with all weed control techniques, herbicides must be reapplied</p>

EPA.

<http://npic.orst.edu/>

You can communicate with an actual person at

[1.800.858.7378](tel:18008587378) or npic@ace.orst.edu

They are open from 8:00AM to 12:00PM Pacific Time, Mon-Fri

periodically to suppress weeds over the long term.

Note that the Weed Science Society of America (WSSA) and the Herbicide Resistance Action Committee (HRAC) both create resistance group designations to help weed managers reduce the likelihood of creating resistant weeds. Every 2 to 3 seasons, the Division rotates herbicide active ingredients according to the resistance group designations from WSSA to limit the buildup of herbicide resistant weeds along the roadsides.

Possible herbicide choices (These product names are subject to change.)

Pre-emergent Herbicides

Esplanade, Gallery, and Resolute are pre-emergent herbicides that are used in the buffer zone next to the road to maintain bare ground. They each belong to a different resistance management group and are used in rotation to prevent herbicide resistance. The Division uses pre-emergent herbicides to reduce the amount of post-emergent herbicides that are needed.

Indaziflam (Esplanade®): This pre-emergent herbicide controls a broad spectrum of weeds if applied before germination. It does not generally control weeds after they have emerged. For maximum weed control, the herbicide needs to reach the soil surface and be activated by rainfall or adequate soil moisture. It is applied in the fall to control winter germinating weeds and in the spring to control spring germinating weeds.

Signal Word (indicates acute, or immediate, toxicity): CAUTION

Rate: 3 to 5 oz/acre

Timing: Before weeds sprout in either fall or spring near the time rain is expected.

Cost to apply (includes material cost): \$125/acre

Herbicide Resistance Management Group: 29

On Ground Water Protection list (b): potential to contaminate ground water, but not yet found in groundwater

Isoxaben (Gallery® S.C.): This pre-emergent controls certain broadleaf weeds.

Signal Word (indicates acute, or immediate, toxicity): CAUTION

Rate: 20 to 30 oz/acre

Timing: Before weeds sprout in either fall or spring near the time rain is expected.

Cost to apply (includes material cost): \$210/acre

Herbicide Resistance Management Group: 21

On Ground Water Protection list (b): potential to contaminate ground water, but not yet found in groundwater

Prodiamine (Resolute® 65 WDG): This pre-emergent herbicide controls grass and broadleaf weeds by preventing the growth and development of newly germinated weed seeds. Weed control is most effective when the product is activated by at least ½" of rainfall or irrigation, or shallow (1" to 2") incorporation before weed seeds germinate and within 14 days following application.

Signal Word (indicates acute, or immediate, toxicity): CAUTION

Rate: 1 to 2 lbs/acre

Timing: Before fall weeds or spring weeds germinate, and close to the time rain is expected.

Cost to apply (includes material cost): \$97/acre

Herbicide Resistance Management Group: 3

Post emergent (contact) herbicides

Glyphosate (Roundup® Pro Concentrate): Glyphosate is a systemic herbicide (it is absorbed into the plant and circulates to kill the entire plant) that will kill most types of vegetation—grass, broadleaf, vines, brush, etc. Roundup is used as a contact herbicide for emerged grasses on road shoulders.

Signal Word (indicates acute, or immediate, toxicity): CAUTION

Rate for spot spraying on roadsides using a boom mounted on a truck: 2 pts in 20 gal of water/acre

Rate for spot spraying by pulling hose with a handgun attached: 6 pts in 100 gal of water/acre

This method is used mostly for parcels where a crew must walk rather than drive.

Timing: Varies depending on the location, the weather, the weed growth, the work load

Cost to apply (includes material cost):

- \$135/acre for Roundup application from a boom mounted on a truck
- \$673/acre for Roundup application from a hose with a handgun

Herbicide Resistance Management Group: 9

**Enjoined for red legged frog

On Ground Water Protection list (b): potential to contaminate ground water, but not yet found in groundwater

Triclopyr TEA (Garlon® 3A): Garlon 3A is specific for woody plants and broadleaf weeds (but not grasses) and is used for spot treatments. It is usually tank mixed with Roundup.

Signal Word (indicates acute, or immediate, toxicity): DANGER (for eye damage to mixer/loader and applicator)

Rate for spot spraying on roadsides using a boom mounted on a truck: 2 to 4 pts in 20 gal of water/acre

Rate for spot spraying by pulling hose with a handgun attached: 4 to 6 pts in 100 gal of water/acre

This method is used mostly for parcels where a crew must walk rather than drive.

Timing: Varies depending on the location, the weather, the weed growth, the work load

Cost to apply (includes material cost):

- \$146/acre for Garlon 3A application from a boom mounted on a truck
- \$714/acre for Garlon 3A application from a hose with a handgun

Herbicide Resistance Management Group: 4

**Enjoined for red legged frog

On Ground Water Protection list (b): potential to contaminate ground water, but not yet found in groundwater

Herbicides with both Pre- and Post-Emergent Activity

Chlorsulfuron (Telar® XP): Telar XP is both a pre-emergent and post-emergent herbicide for the control of many invasive and noxious broadleaf weeds. Warm, moist conditions following application enhance the effectiveness of Telar XP since moisture carries the herbicide into weed roots and prevents them from developing. Weeds hardened off by drought stress are less susceptible to this herbicide. Telar is used primarily for control of difficult broadleaf weeds such as pepperweed.

Signal Word (indicates acute, or immediate, toxicity): CAUTION

Rate: 1.6 oz/acre

Timing: Before fall weeds or spring weeds germinate and close to the time rain is expected.

Cost to apply (includes material cost): \$113/acre

Herbicide Resistance Management Group: 2

On Ground Water Protection list (b): potential to contaminate ground water, but not yet found in groundwater

Dicamba diglycolamine salt (Vanquish®): Vanquish is used selectively as a spot treatment for difficult to control broadleaf weeds, but it has not been used in the County for 3 years. It is registered for selective broadleaf and brush control and has both pre- and post-emergent qualities. Dicamba is a systemic herbicide that acts as a plant growth regulator, and is a federally restricted material due to the potential for harm to non-target plants. It can volatilize when temperatures are high. A special permit must be obtained from County Ag, and the applicator must notify County Ag in advance of the application. If the application is cancelled, County Ag must be notified.

Signal Word (indicates acute, or immediate, toxicity): CAUTION

Rate: 1 to 2 pts/acre

Timing: Best when weeds are small

Cost to apply (includes material cost): \$95/acre

Herbicide Resistance Management Group: 4

Not on any injunction list

On Ground Water Protection list (b): potential to contaminate ground water, but not yet found in groundwater

Aminopyralid (Milestone®): Milestone is a systemic herbicide with both pre- and post-emergent properties that controls broadleaf weeds without affecting grasses. Milestone is used for the more woody and thick-stemmed weeds on road shoulders.

Signal Word (indicates acute, or immediate, toxicity): CAUTION

Rate: 5 to 7 oz/acre

Timing: Between fall and spring before seeds germinate, but it is a more flexible chemical because it also has contact properties

Cost to apply (includes material cost): \$96/acre

Herbicide Resistance Management Group: 4

Not on any injunction list

On Ground Water Protection list (b): potential to contaminate ground water, but not yet found in groundwater

Sulfometuron methyl (Oust XP®): This pre-emergent and early post-emergent herbicide controls many annual

	<p>and perennial grasses and broadleaf weeds. The Department rarely uses this on roadsides.</p> <p>Signal Word (indicates acute, or immediate, toxicity): CAUTION</p> <p>Rate: 3.6 to 4.8 oz/acre</p> <p>Timing: Before or just after weeds germinate in the fall or spring.</p> <p>Cost to apply (includes material cost): \$95/acre</p> <p>Herbicide Resistance Management Group: 2</p> <p>On Ground Water Protection list (b): potential to contaminate ground water, but not yet found in groundwater</p> <p>CONCLUSIONS: When the IPM process calls for the use of herbicides, the products described above are used where most suitable considering cost, efficacy, the environment, human communities, and resistance management.</p>
<p>Which herbicide application methods are available for these chemicals?</p>	<p>The Department's current equipment allows for 3 methods of application:</p> <ul style="list-style-type: none"> • broadcast application or spot treatment from a boom attached to a truck • spot treatment from a handgun attached to a hose connected to a truck-mounted tank • and spot treatment with a backpack. <p>Factors considered in choosing the method of application:</p> <ol style="list-style-type: none"> 1. The size of the area to be treated <ol style="list-style-type: none"> a. If the area is large and requires a large quantity of herbicide, the large truck is used because it can hold more material b. If the area is small, and requires a small quantity of herbicide, the small truck may be used. c. If the weeds are limited and close to the road edge, the handgun may be used to spot spray from the cab of the truck. d. If a median island is being treated, a backpack sprayer would be used. 2. The amount of weed growth to be treated <ol style="list-style-type: none"> a. If weed growth is abundant, more herbicide will be needed and the larger truck would be used. b. If weed growth is less abundant, the smaller truck may be used. 3. The characteristics of the weeds/sites to be treated <ol style="list-style-type: none"> a. If cut stumps are to be treated, the squirt bottle would be used b. If a stand of poison oak 100 ft. from the road edge is being treated, the handgun and hose would be dragged to the poison oak. c. As noted above, if weed growth is limited and near the edge of the road, the handgun may be used. d. If large swaths of contiguous weed growth are to be treated, a truck, large or small, would be used. 4. The distance from a site where the truck can be reloaded <ol style="list-style-type: none"> a. There are a number of sites in the County where a Public Works truck could reload herbicide: Byron Airport; Brentwood, Martinez, and Richmond Corp. Yards; and fire stations. b. The distance of the work site from one of the reloading sites is taken into consideration when choosing the application method. c. It takes time and burns more fuel to drive back and forth to reload in the field d. The crew must carry undiluted product, which is more dangerous if there is an accident. 5. Safety <ol style="list-style-type: none"> a. The large truck is safer in the event of an accident. b. Not having to reload in the field is safer, since undiluted product is not being carried in the truck. c. Using a backpack on a median island is safer than dragging hose across the road. 6. Cost effectiveness <ol style="list-style-type: none"> a. For environmental reasons and for cost effectiveness, the minimum amount of pesticide needed to do the job should always be used. Therefore the application method should be carefully matched to the job. b. Driving back and forth multiple times to treat a site wastes time, money and fuel and should be avoided. <p>CONCLUSIONS: The terrain, proximity to water, potential human or non-target exposure, kind of weed species, and goal of the treatment dictate the application method.</p>
<p>What weather concerns must be checked prior to application?</p>	<p>The Vegetation Management Supervisor takes into consideration the pesticide label and all site specific factors. Each day, the Vegetation Manager checks the weather when he/she arrives at work at 6:00 AM. Rain can prevent application of some herbicides because of the danger of runoff. For most pre-emergent herbicides, rain is needed after application in order for the herbicide to be effective. The Vegetation Manager must also consider wind speed (generally it should be <7 mph) and possible temperature inversions to avoid herbicide drift. Crews carry wind meters in their trucks. Crews measure and record weather factors prior to and during application. Excessive heat or cold makes plants shut down, and herbicide applications at that time could be ineffective. The Vegetation Manager uses these factors to write Pest Control recommendations for the crew to follow on the days that spraying takes place.</p>
<p>Cost Comparisons for</p>	<p>See Table 1, below.</p>

various mgmt methods on both roadsides and flood control channels	
Changes in management methods since the previous iteration of this document	<p>Since FY 12-13, the Department:</p> <ul style="list-style-type: none"> • Decreased acres of roadsides treated with chemicals by 61% • Increased acres mowed on flood control channels by 25% • Decreased acres of access road shoulder and fenceline treatments by 37% • Decreased acres treated with chemicals on flood control banks by 92% • Increased acres grazed by goats by 151% • Decreased acres of aquatic chemical treatments by 31%
Recommendations from the IPM Advisory Committee	<ul style="list-style-type: none"> • Continue to review all vegetation management methods available for flood control channels and access roads considering efficacy, cost, impacts to the environment, and to the human community. • Encourage investigation into, and experimentation with, new methods. • Review this document every 3 years.

Table 1. Methods, Acres Treated, and Cost* for Vegetation Management along Contra Costa Roadsides and Flood Control Channels, Averaged over Two Years (2016-2018)[§]

Vegetation Management Method	Avg # of Acres Treated	% of Total Acres Treated	Avg. Total Cost for all acres treated	Avg Cost/Ac	% of Total Cost for all acres treated	% Change in Total Acres Treated from FY 12-13
Chemical Treatment - Roads	714.5	48%	\$137,896	\$193	18%	-61%
Right of Way Mowing (mainly flood control facilities)	318	22%	\$348,856	\$1097	47%	25%
Chemical Treatment – Flood Control Access Roads	144.5	10%	\$50,065	\$346	7%	-37%
Chemical Treatment – Flood Control Banks	14.5	1%	\$7,467	\$515	1%	-92%
Grazing (flood control facilities)	240.7	16%	\$158,355	\$658	21%	+151%
Chemical Treatment - Aquatic Applications	41	3%	\$37,686	\$919	5%	-31%
Mulching (flood control fence-lines and access road shoulders)	0.65	0.04%	\$6,642	\$10,218	1%	-89%
Totals	1473.75		\$746,967			-31%

*Table lists the most accurate costs available and is not necessarily specific to roadsides. The cost figures above for each method include labor, materials, equipment costs, contract costs (for grazing), and overhead (includes training, permit costs, and habitat assessment costs). Licensing costs for staff members are paid by the individual and not by the County. The cost of the Vegetation Management Supervisor when he supervises work is not included in any of the figures, but is comparable among the various methods.

[§]Table is updated each year in the IPM Annual Report. See cchealth.org/ipm.

Contra Costa County
DECISION DOCUMENTATION for WEED MANAGEMENT
on County Flood Control Channels

Date: October 2, 2017 (last revision on 7/2/18)

Department: Public Works Roadside and Flood Control Channel Vegetation Management Div.

Location: Flood Control Channels

Situation: Vegetation management along 76 miles of flood control channels and creek banks; this includes areas ranging from unimproved natural creeks to concrete-lined channels, along with levies that are certified by the Army Corps of Engineers

Note that management decisions are site specific for flood control channels. Not every management technique will work equally well at all sites and the costs of each technique will vary depending on the site.

See the CCC General Pest Management Decision Tree for a summary of the decision-making process.

<p>What are the management goals for the site?</p>	<p>To maintain vegetation along flood control channels and creek banks so that</p> <ul style="list-style-type: none"> • erosion of the banks does not occur • vegetation does not impede the flow of water in a flood • vegetation does not collect silt and debris that could obstruct the passage of water • vegetation does not hide problems on banks such as ground squirrel burrows, erosion, beaver activity, etc. • vegetation does not pose a fire hazard • vegetation remains a mix of small herbaceous plants and grasses • homeless encampments cannot flourish unnoticed • waterways do not become a conduit for the spread of noxious weeds throughout the county • waterways provide habitat for wildlife • maintenance is performed in accordance with the Routine Maintenance Agreement (RMA) with the state Department of Fish and Wildlife • maintenance is performed in accordance with the regulations from the Army Corps of Engineers and the Regional Water Quality Control Boards (San Francisco and San Joaquin) <p>Vegetation is also managed along flood control access roads to maintain the integrity of the roads and ease of access for equipment.</p> <p>With these management goals in mind, the most appropriate management tactics are chosen based on cost, efficacy, impacts to the environment, public health, and other impacts to the public.</p>
<p>How often is the site monitored?</p>	<p>All sites in the county are monitored every few days to every few weeks. The Vegetation Management Supervisor spends part of every day inspecting waterways on a rotating basis. The road crews, the flood control supervisors, and the vegetation management crew are all trained to recognize vegetation issues on flood control channels and creeks and to report them to the Supervisor. Monitoring information is recorded on the Vegetation Management Supervisor's Daily Report.</p> <p>If a new weed species is found, the Supervisor identifies and researches the weed. If he/she cannot identify the specimen, he/she consults the County Department of Agriculture. If a weed on the California Department of Food and Agriculture A-rated list is found, the County Agriculture Department is also consulted.</p>
<p>Weeds have been identified as the following: Note that this is not a complete list, but a list of the main problem plants.</p>	<p>Various grasses, including</p> <ul style="list-style-type: none"> • Harding grass (<i>Phalaris aquatica</i>) • Johnsongrass (<i>Sorghum halepense</i>) • Reed canarygrass (<i>Phalaris arundinacea</i>) • Wild oats (<i>Avena fatua</i>) • Quack grass (<i>Elymus repens</i>) <p>Various broadleaf weeds including</p>

	<ul style="list-style-type: none"> • Mustard (<i>Brassica</i> spp.) • Cocklebur (<i>Xanthium</i> sp.) • Poison hemlock (<i>Conium maculatum</i>) • Wild carrot (<i>Daucus carota</i>) • Stinging nettle (<i>Urtica</i> sp.) • Himalayan blackberry (<i>Rubus armeniacus</i>) <p>Invasive weeds such as</p> <ul style="list-style-type: none"> • Perennial pepperweed (<i>Lepidium latifolium</i>) • Purple loosestrife (<i>Lythrum salicaria</i>) • Red sesbania (<i>Sesbania punicea</i>) <p>On some engineered channels, cattails (<i>Typha</i> sp.) and trees (willow—<i>Salix</i>, walnut—<i>Juglans</i>, ash—<i>Fraxinus</i>) are considered weeds.</p> <p>The Maintenance Division’s vegetation management crew is trained to look for invasives when they are out working and report them to the Vegetation Manager who consults with the Agriculture Department about what action to take.</p>																
Are populations high enough to require control?	The Vegetation Management crew manages vegetation as necessary to meet the goals above.																
Is this a sensitive site?	<table border="1"> <tr> <td> <p>Is this a “highly sensitive site” as defined by PWD Environmental staff? A highly sensitive site contains a known habitat for, or is close to sightings of, endangered or threatened species. Refer to the attached flow chart for an outline of how sensitive sites are determined and handled.</p> <p>Some sites fit in this category.</p> </td> <td>Yes</td> </tr> <tr> <td> <p>Is this under the Routine Maintenance Agreement with Fish and Wildlife?</p> <p>All creeks are covered under the Routine Maintenance Agreement.</p> </td> <td>Yes</td> </tr> <tr> <td> <p>Is this part of any of the court-ordered injunctions? (see: https://www.epa.gov/endangered-species/interim-use-limitations-eleven-threatened-or-endangered-species-san-francisco-bay)</p> <p>Some areas are included in one or more injunctions. The injunctions specify buffer zones around designated habitat for certain species for particular pesticides, but they do not preclude the use of those pesticides outside the buffer zones.</p> </td> <td>Yes</td> </tr> <tr> <td> <p>Is this a known or potential habitat for any endangered or threatened species?</p> <p>Yes, some sites contain habitat for various sensitive species including salmonids, red legged frog, various nesting birds, dusky footed woodrat, salt marsh harvest mouse. Before any kind of work can be done in channels, each site must be assessed by a biological monitor (a trained Public Works staff member) or a Certified Biologist.</p> </td> <td>Yes</td> </tr> <tr> <td> <p>Is it on or near an area where people may walk or children may play?</p> <p>The Division does not manage pests on established (paved) trails. These trails are mainly under the management of the East Bay Regional Park District. In cases where established trails exist along flood control channels (some areas of Walnut Creek, Marsh Creek, and Wildcat Creek) they are situated above the creek slopes. Access roads along flood control channels are County property and are posted “No Trespassing.” The public should not be on the access roads and enter at their own risk. In general, the public is not allowed access to the slopes or waterway within these environments.</p> <p>Despite these prohibitions to public access, people may continue to visit these areas, and their presence should be noted when preparing to apply pesticides. Any person observed in the treatment area should be notified of the impending treatment and should be requested to vacate the area. Treatment should be suspended while people are present.</p> </td> <td>Yes</td> </tr> <tr> <td> <p>Is it near an above ground drinking water reservoir?</p> <p>None of the flood control channels that the Division maintains is near a reservoir.</p> </td> <td>No</td> </tr> <tr> <td> <p>Is it near crops?</p> <p>There are areas of Marsh Creek, Sand Creek, and Dry Creek that are near crops.</p> </td> <td>Yes</td> </tr> <tr> <td> <p>Is it near desirable trees or landscaping?</p> </td> <td>Yes</td> </tr> </table>	<p>Is this a “highly sensitive site” as defined by PWD Environmental staff? A highly sensitive site contains a known habitat for, or is close to sightings of, endangered or threatened species. 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Treatment should be suspended while people are present.</p>	Yes	<p>Is it near an above ground drinking water reservoir?</p> <p>None of the flood control channels that the Division maintains is near a reservoir.</p>	No	<p>Is it near crops?</p> <p>There are areas of Marsh Creek, Sand Creek, and Dry Creek that are near crops.</p>	Yes	<p>Is it near desirable trees or landscaping?</p>	Yes
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	There are some flood control access roads that are near residences.	
	Is the soil highly permeable, sandy, or gravelly? Yes, in some areas.	Yes
	Is it within a Groundwater Protection Area?	No
	Is it within an infiltration basin?	No
What factors are taken into account when determining the management technique(s) for vegetation?	<ul style="list-style-type: none"> • Species of plant • Stage of growth • Plant density • Plant location (in water/on land, accessibility, topography, adjacent properties) • Weather (precipitation, wind, temperature, relative humidity) • Personnel available to perform the management activities when they are needed • Safety (for the public, staff, wildlife, adjacent property, the general environment) • Proximity to water resources and wildlife • State and local regulations • Budget available 	
Are special permits required for work?	In some instances, depending on the kind of work to be done, it could be necessary to obtain a take permit from the US Fish and Wildlife Service. This would be coordinated through the environmental staff at Public Works.	
Which cultural controls were considered?	<p>Mulching: Woodchips are used on flood control access roads where appropriate to prevent and suppress weeds. Creek banks cannot be mulched.</p> <p>Weed Barrier/Sheet Mulching: This cannot be used on the creek banks, and for the access roads, it would be an added and unnecessary expense since a deep cover of woodchips serves the same purpose.</p> <p>Planting Desirable Species: The County Flood Control District is partnering with The Restoration Trust, an Oakland-based non-profit organization promoting habitat restoration and stewardship, in a native planting experiment along Clayton Valley Drain (near Hwy 4 adjacent to Walnut Creek). The study is examining the survival of several California natives: Santa Barbara sedge, (<i>Carex barbara</i>), common rush (<i>Juncus effusus</i>), Baltic rush (<i>Juncus balticus</i>), field sedge (<i>Carex praegracilis</i>), and creeping wild rye (<i>Leymus triticoides</i>).</p> <p>The original planting occurred in December 2013, and in December 2014 and each year since, volunteers have replaced plants and planted new plugs. Originally, Santa Barbara sedge, common rush, Baltic rush, and field sedge were planted on the lower terrace near the creek and the creeping wild rye was planted on the slopes of the channel.</p> <p>These species spread from underground rhizomes and will anchor the soil to provide erosion control. They are all perennial species that stay green year around and are resistant to fire. The plants are compatible with flood control objectives since they do not have woody stems, and during flood events, they lie down on the slope, thereby reducing flow impedance. They are not sensitive to broadleaf-specific herbicides, and unlike non-native annuals, they provide carbon sequestration and remove as much as ½ ton of carbon per acre per year. Native grasses and sedges can potentially out-compete non-native broadleaf weeds and annual grasses, but they do require maintenance assistance from herbicides.</p> <p>The Division, at the request of The Restoration Trust, manages weeds to reduce competition and provide the native plants with an advantage.</p> <p>The Restoration Trust will monitor these plots through 2018 to assess native plant survival, the degree to which they compete with the non-native annual species, and the relative success of seeding versus planting plugs.</p> <p>CONCLUSIONS: Mulching can be and is used along flood control access roads where the mulch will not drift into the creek. The Public Works Department is experimenting with planting desirable species to out-compete weedy species. This is an IPM technique the Public Works Department is interested in exploring further. However, establishment of desired species takes considerable time, money, and attention and may require water and/or continued use of herbicide to prevent invasion of undesirable species.</p>	
Which physical controls were considered?	<p>Pruning: Trees are pruned for equipment clearance and for line of sight along access roads. Trees that sprout in engineered channels on the slopes or in creek channels are cut down in order to comply with Army Corps of Engineers regulations. The top of the stump is generally painted with an herbicide to ensure control.</p> <p>Mowing by machine: Many creek slopes are mowed by tractor for fire prevention, as required by the Fire District. The channels are mowed along the top of the slope and a minimum of 6 ft. down the side of the slope. Mowing works best on open spaces without a lot of trees.</p> <p>Mowing by hand: Areas that are not mowed by machine or grazed by animals are usually mowed by a crew with weed whackers.</p> <p>Grazing: Grazing is used where the presence of endangered species, such as the red legged frog, make it difficult to mow, for example, on Pine Creek Dam. Grazing is also used in areas such as Pine Creek and Ygnacio Valley Drain where the creek sides are steep and dangerous for human workers. Although goats are more</p>	

	<p>expensive than hand mowing, their use can help avoid incurring indirect costs such as staff injuries in potentially hazardous locations. The County continues to use goats as a management technique wherever appropriate.</p> <p>For detailed information on how grazing is used in the County, see the decision document for weed management entitled Using Grazing Animals for Weed Abatement.</p> <p>Burning: This technique was used in the past but is no longer because the Bay Area Air Quality Control Board allows burning only in very limited circumstances.</p> <p>Electrothermal weeding (Ubiquetek): This method uses a probe carrying electricity at a high voltage (3, 000 to 5,000 to volts) and low amperage (0.5 to 2 amps) to heat plant tissue and kill both roots and above ground plant material. The probe must contact each individual weed. This method is more efficient than steaming or flaming weeds, but would be very slow compared to mowing by machine or hand. High voltage can be lethal, so the device is potentially dangerous to the operator. This method also poses a fire risk because of the intense heat at the point of contact with the plant that can produce sparks and small flames. Currently there have been no independent evaluations of this method. At this time, the Department does not consider this a viable tactic for use on flood control channels.</p> <p>Steam weeding (Weedtechnics): This method works by sending water under pressure through a diesel boiler and then out through hoses to an application head. The water comes out at 205 to 218 degrees Fahrenheit. This method is slower than other weed management techniques (it appears that the applicator must drive around 2 mph to treat effectively). A new model (the SW3800KD) is advertised as killing weeds faster. It uses 30 L of water per minute, and with their 1000 L water tank, staff would have to refill the tank about every ½ hour. This tactic should be considered as a contact-only treatment and should not be expected to kill underground portions of the plant. Treatment would have to be repeated periodically during the season. At this time, the Department does not consider this a viable tactic for use on flood control channels.</p> <p>See Table 1 for more information on costs.</p> <p>CONCLUSIONS: Each of these techniques, except burning and electrothermal and steam weeding, is used by the Department where appropriate. The County continues to explore new tactics as they emerge.</p>
<p>Which biological controls were considered?</p>	<p>Biological controls are not applicable in this situation unless a particular invasive weed is the target, and it has a biological control available.</p>
<p>Which chemical controls were considered?</p> <p>For more information on pesticides listed here visit the National Pesticide Information Center (NPIC). This a joint project of Oregon State University and the US EPA.</p> <p>http://npic.orst.edu/</p> <p>You can communicate with an actual person at 1.800.858.7378 or npic@ace.orst.edu</p> <p>They are open from 8:00AM to 12:00PM Pacific Time, Mon-Fri</p>	<p>During many years of research, experience, and experimentation, including consulting the literature, researchers, and colleagues about materials that are labeled for, and effective on, weeds in rights-of-way, the Division has chosen the herbicide options listed below. The Department continues to consult researchers and colleagues, as well as new literature, to identify new choices that may be more effective or more environmentally friendly.</p> <p>Pesticides may potentially exhibit both acute and chronic toxicity. The Signal Words below refer to acute hazards. For information on chronic toxicity, contact NPIC (info on left).</p> <p>Herbicides and application methods are chosen to prevent or minimize the potential for drift and exposure to humans and wildlife. As with all weed control techniques, herbicides must be reapplied periodically to suppress weeds over the long term.</p> <p>Note that the Weed Science Society of America (WSSA) and the Herbicide Resistance Action Committee (HRAC) both create resistance group designations to help weed managers reduce the likelihood of creating resistant weeds. The designations below are from WSSA. Herbicide resistance groups are rotated every 2 to 3 seasons to limit the buildup of herbicide resistant weeds along the roadsides.</p> <p><u>Possible herbicide choices (These product names are subject to change):</u></p> <p><u>Pre-emergent Herbicides</u></p> <p>Esplanade and Resolute 65 WDG are pre-emergent herbicides that are used only on flood control access roads to prevent weed emergence. They each belong to a different resistance management group and are used in rotation to prevent creating herbicide-resistant weeds. The Department uses pre-emergent herbicides to reduce the amount of post-emergent herbicides that are needed. In some areas, it is very difficult to mow either by hand or by machine, and grazing would be too costly. Those areas are treated with herbicide.</p> <p>Indaziflam (Esplanade®): This pre-emergent herbicide controls a broad spectrum of weeds if applied before germination. It does not generally control weeds after they have emerged. For maximum weed control, the herbicide needs to reach the soil surface and be activated by rainfall or adequate soil moisture. It is applied in the fall to control winter germinating weeds and in the spring to control spring germinating weeds. Indaziflam can be used on flood control access roads, but not on creek banks or in water.</p> <p>Signal Word (indicates acute, or immediate, toxicity): CAUTION</p> <p>Rate: 3 to 5 oz/acre</p> <p>Timing: Before weeds sprout in either fall or spring near the time rain is expected.</p> <p>Cost to apply (includes material cost): \$125/acre</p> <p>Herbicide Resistance Management Group: 29</p>

On Ground Water Protection List (b): potential to contaminate ground water, but not yet found in ground water

Prodiamine (Resolute® 65 WDG): This pre-emergent herbicide controls grass and broadleaf weeds by preventing the growth and development of newly germinated weed seeds. Weed control is most effective when the product is activated by at least ½" of rainfall or irrigation, or shallow (1" to 2") incorporation before weed seeds germinate and within 14 days following application. Prodiamine can be used on flood control access roads, but not on creek banks or in water.

Signal Word (indicates acute, or immediate, toxicity): CAUTION

Rate: 1 to 2 lbs/acre

Timing: Before fall weeds or spring weeds germinate, and close to the time rain is expected.

Cost to apply (includes material cost): \$97/acre

Herbicide Resistance Management Group: 3

Post emergent (contact) herbicides

Glyphosate, which is not a selective herbicide, is used at a regular rate in areas where it is not necessary to maintain a cover of grasses. Glyphosate, at a much reduced rate, is used to chemically "mow", or stunt, vegetation on creek banks where feasible.

Garlon 3A and Renovate 3 are specific for broadleaf weeds and are used where the Department wants to keep a grassy cover on the creek slopes. Renovate is used to control cattail growth in areas not subject to the junctons. Either might be used as a cut stump treatment.

Clearcast is used for spot treating cattails in flood control channels.

Glyphosate (Roundup® Pro Concentrate & Roundup Custom®): Glyphosate is a systemic herbicide (it is absorbed into the plant and circulates to kill the entire plant) that will kill almost any type of vegetation—grass, broadleaf, vines, brush, etc. Roundup Custom is used on creek slopes for many different weeds. Roundup Custom is used at a much reduced rate for chemical "mowing" on creek slopes to stunt vegetation but not kill it. Roundup Custom is registered for use in water so the Department uses that formulation if applications are going to be very near water.

Signal Word (indicates acute, or immediate, toxicity): CAUTION

Rate for spot spraying on access roads using a boom mounted on a truck: 2 pts in 20 gal of water/acre

Rate for spot spraying by pulling hose with a handgun attached: 6 pts in 100 gal of water/acre

This method is used mostly where a crew must walk rather than drive.

Rate for chemical mowing: 1/5 pt in 10 gal of water/acre

Timing: Varies depending on the location, the weather, the weed growth, the work load

Costs to apply (includes material cost):

- \$135/acre for Roundup application from a boom mounted on a truck
- \$673/acre for Roundup application from a hose with a handgun
- \$606/acre for Roundup Custom used for chemical mowing

Herbicide Resistance Management Group: 9

**Enjoined for red legged frog

On Ground Water Protection List (b): potential to contaminate ground water, but not yet found in ground water.

Triclopyr TEA (Garlon® 3A and Renovate® 3): Triclopyr controls woody plants and broadleaf weeds, but not grasses. Garlon 3A is used when needed on flood control access roads. Renovate is registered for use within or adjacent to aquatic sites.

Signal Word (indicates acute, or immediate, toxicity): DANGER (for eye damage to mixer/loader and applicator)

Rate for Garlon 3A or Renovate on access roads using a boom mounted on a truck: 2 pts in 20 gal of water/acre

Rate for use of Garlon 3A or Renovate pulling hose with a handgun attached: 4 pts in 100 gal of water/acre

Rate for cut stump treatment: Undiluted material (using squirt bottle to spray the surface of the stump)

Timing: Varies depending on the location, the weather, the weed growth, the work load

Cost to apply (includes material cost):

- \$146/acre for Garlon 3A application from a boom mounted on a truck
- \$714/acre for Garlon 3A application from a hose with a handgun
- \$130/acre for Renovate application from a boom mounted on a truck
- \$647/acre for Renovate application from a hose with a handgun

Herbicide Resistance Management Group: 4

**Enjoined for red legged frog

On Ground Water Protection List (b): potential to contaminate ground water, but not yet found in ground

	<p>water</p> <p>Imazamox (Clearcast®): Imazamox is a post-emergent, slow acting, systemic herbicide for use in and around aquatic and non-cropland sites. Currently, it is only used for spot treating cattails with a hose and handgun in highly sensitive sites.</p> <p>Signal Word (indicates acute, or immediate, toxicity): CAUTION</p> <p>Rate for spot spraying cattails with a hose and handgun: 4 pt./100 gal/acre</p> <p>Timing: Varies depending on the location, the weather, the weed growth, the work load</p> <p>Cost to apply (includes material cost): \$730/acre</p> <p>Herbicide Resistance Group: 2</p> <p>On Ground Water Protection List (b): potential to contaminate ground water, but not yet found in ground water</p> <p><u>Herbicides with both Pre- and Post-Emergent Activity</u></p> <p>Chlorsulfuron (Telar® XP): Telar XP is both a pre-emergent and post-emergent herbicide for the control of many invasive and noxious broadleaf weeds. Warm, moist conditions following application enhance the effectiveness of Telar XP since moisture carries the herbicide into weed roots and prevents them from developing. Weeds hardened off by drought stress are less susceptible to this herbicide. This herbicide is used by the Department mainly for control of perennial pepperweed.</p> <p>Signal Word (indicates acute, or immediate, toxicity): CAUTION</p> <p>Rate: 1.6 oz./acre</p> <p>Timing: Before fall weeds or spring weeds germinate and close to the time rain is expected.</p> <p>Cost to apply (includes material cost): \$113/acre</p> <p>Herbicide Resistance Management Group: 2</p> <p>Imazapyr (Habitat®): Habitat is registered for the control of undesirable vegetation in and around standing or flowing water, and can be used for wetland, riparian, and terrestrial vegetation growing in or around surface water when treatment might inadvertently result in application to surface water. Habitat has both pre- and post-emergent activity and is a systemic herbicide (is absorbed into the plant and circulates to kill the entire plant) that controls grass and broadleaf weeds, brush, vines, etc. It will not control vegetation submerged in water.</p> <p>Habitat is used only as a spot treatment for <i>Arundo</i>, pampas grass, ivy growing on fences and in creeks, and as a cut stump treatment for feral trees (the tree is cut down and the herbicide is immediately applied to the cut stump).</p> <p>Signal Word (indicates acute, or immediate, toxicity): CAUTION</p> <p>Rate: 8 oz./3 gal of water in a backpack for spot treatments and for cut stumps</p> <p>Timing: Timing: Varies depending on the location, the weather, the weed growth, the work load</p> <p>Cost to apply (includes material cost): \$79/backpack load (3 gal)</p> <p>Herbicide Resistance Management Group: 2</p> <p>**Enjoined for red legged frog</p> <p>On Ground Water Protection List (b): potential to contaminate ground water, but not yet found in ground water</p> <p>CONCLUSIONS: When the IPM process calls for the use of herbicides, the products described above are used where most suitable considering cost, efficacy, the environment, human communities, and resistance management.</p>
<p>Which herbicide application methods are available for this chemical?</p>	<p>Methods available:</p> <p>Current Department equipment allows for 4 methods of application: a boom attached to a truck, a handgun attached to a hose connected to a truck-mounted tank, spot treatment with a backpack, and spot treatment with a squirt bottle.</p> <p>The truck with a boom is used wherever possible since it is most efficient. A handgun attached to a hose is used where access is difficult for a truck, the backpack sprayer is used for small spot treatments, and the squirt bottle is used for cut stump treatments.</p> <p>CONCLUSIONS: The terrain, the proximity to the water, the kind of weed, and the goal of the treatment dictate the application method.</p>
<p>What weather concerns must be checked prior to application?</p>	<p>The Vegetation Manager takes into consideration the pesticide label and all site specific factors. Each day, the Vegetation Manager checks the weather when he/she arrives at work at 6:00 AM. Rain can prevent application of some herbicides because of the danger of runoff. For most pre-emergent herbicides, rain is needed after application in order for the herbicide to be effective. The Vegetation Manager must also consider wind speed (generally it should be <7 mph) to avoid herbicide drift. Crews carry wind meters in their trucks. Excessive heat or cold makes plants shut down, and herbicide applications at that time would be ineffective. The Vegetation Manager uses these factors to write Pest Control recommendations for the crew to follow on the days that spraying takes place.</p>

Cost Comparisons for various management methods	See Table 1, below.
Changes in management methods since the previous iteration of this document	<p>Since FY 12-13, the Department:</p> <ul style="list-style-type: none"> • Decreased acres of roadsides treated with chemicals by 61% • Increased acres mowed on flood control channels by 25% • Decreased acres of access road shoulder and fenceline treatments by 37% • Decreased acres treated with chemicals on flood control banks by 92% • Increased acres grazed by goats by 151% • Decreased acres of aquatic chemical treatments by 31%
Recommendations from the IPM Advisory Committee	<ul style="list-style-type: none"> • Continue to review all vegetation management methods available for flood control channels and access roads considering efficacy, cost, impacts to the environment and to the human community. • When improved wellhead location information becomes available in the future, the Committee recommends that the County consider that information during the pest management decision making process. • Encourage investigation into, and experimentation with, new methods. • Review this document every 3 years.

Table 1. Methods, Acres Treated, and Cost* for Vegetation Management along Contra Costa Roadsides and Flood Control Channels, Averaged over Two Years (2016-2018)[§]

Vegetation Management Method	Avg # of Acres Treated	% of Total Acres Treated	Avg. Total Cost for all acres treated	Avg Cost/Acre	% of Total Cost for all acres treated	% Change in Total Acres Treated from FY 12-13
Chemical Treatment - Roads	714.5	48%	\$137,896	\$193	18%	-61%
Right of Way Mowing (mainly flood control facilities)	318	22%	\$348,856	\$1097	47%	25%
Chemical Treatment – Flood Control Access Roads	144.5	10%	\$50,065	\$346	7%	-37%
Chemical Treatment – Flood Control Banks	14.5	1%	\$7,467	\$515	1%	-92%
Grazing (flood control facilities)	240.7	16%	\$158,355	\$658	21%	+151%
Chemical Treatment - Aquatic Applications	41	3%	\$37,686	\$919	5%	-31%
Mulching (flood control fence-lines and access road shoulders)	0.65	0.04%	\$6,642	\$10,218	1%	-89%
Totals	1473.75		\$746,967			-31%

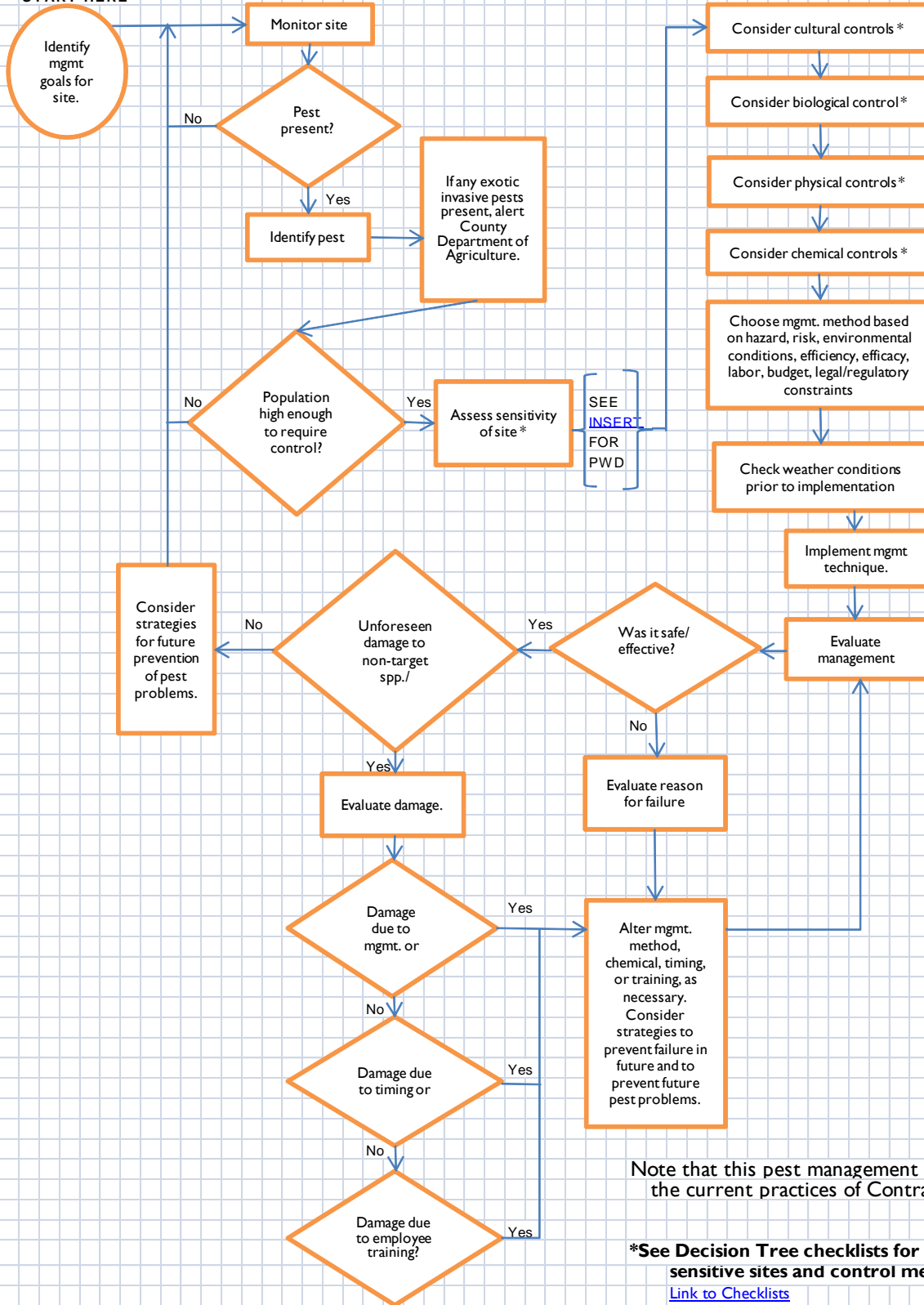
*Table lists the most accurate costs available. The cost figures above for each method include labor, materials, equipment costs, contract costs (for grazing), and overhead (includes training, permit costs, and habitat assessment costs). Licensing costs for staff members are paid by the individual and not by the County. The cost of the Vegetation Management Supervisor when he supervises work is not included in any of the figures, but is comparable among the various methods.

[§]Table is updated each year in the IPM Annual Report. See cchealth.org/ipm.

General Integrated Pest Management Decision Tree

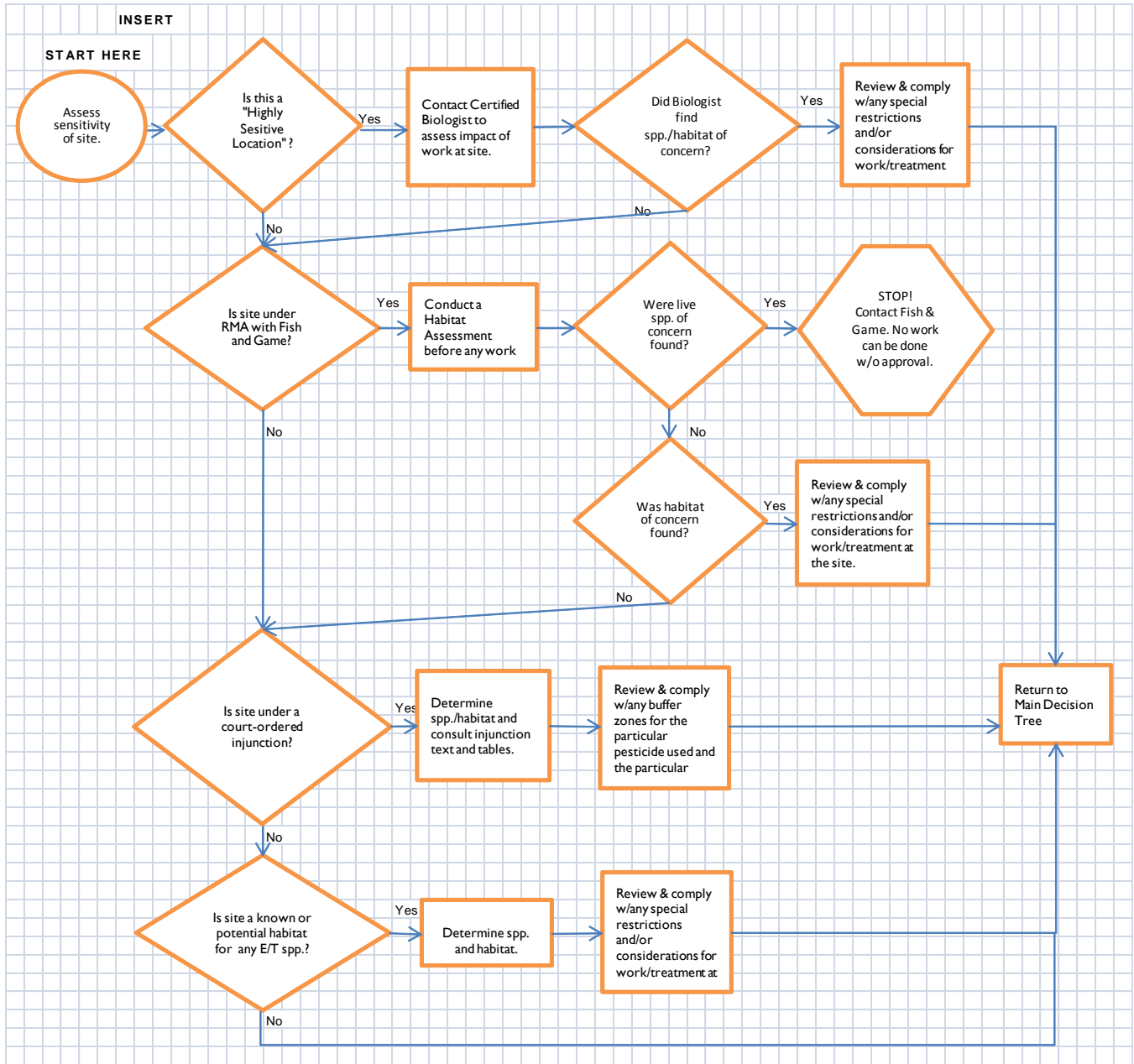
The overall goal of this process is to choose the least-hazardous management method that is effective and economically viable.

START HERE



Note that this pest management decision tree doc the current practices of Contra Costa County s

*See Decision Tree checklists for evaluating sensitive sites and control methods:
[Link to Checklists](#)



Decision Tree Checklists

<p>Check list for Cultural Controls</p> <ul style="list-style-type: none"> • Is it possible to use education to alter sensitivity to or spread of pest problem? • Is it possible to use education to alter habitat and availability of food for pest? • Is it possible to use education to prevent pest entry? • Are the plants with pest problems suitable for landscape site? • Is it possible to alter plant care to reduce or eliminate pests? • Is it possible to replace or completely remove plants with pest problems? • Is it possible to modify the environment to improve plant health? • Is it possible to modify the environment to reduce or eliminate pests? 	<p>Check list for Bio Controls</p> <ul style="list-style-type: none"> • Is an organism available for the target pest? • Is it effective for the target pest (consider theoretical and historical)? • Are there time constraints on the management of the target pest? • How compatible is the organism with other management techniques? • What is the cost of implementation? • Can the budget accommodate this management technique? • Is staff/equipment available for implementation? • What is the proper timing for releasing this organism? 	<p>Things to consider when evaluating management:</p> <ul style="list-style-type: none"> • Were fire regulations met on time? • Did mgmt increase air pollution? • Did mgmt increase/decrease fire/flood hazards? • erosion? • biodiversity? • herbicide resistance? • customer complaints?
<p>Check list for Physical Controls</p> <ul style="list-style-type: none"> • Is it effective for target pest (consider theoretical and historical)? • Is it suitable for the site and life stage of pest? • What are the risks to staff safety of implementing the technique? • Can the budget accommodate this management technique? • Is staff/equipment available for implementation? • Is this technique appropriate for the time of year/weather? • Is there potential for damage to non-target plant spp.? • Is there potential for damage to non-target animal spp.? • Is there endangered spp habitat present and will the technique affect that? • Is there a potential for intro or spread of noxious weeds by using this technique? • Is there a potential for erosion? • Are there time constraints on the management of the target pest? 	<p>Check list for Chemical Controls:</p> <ul style="list-style-type: none"> • Is it effective for target pest (consider theoretical and historical)? • What is the toxicology of the pesticide? • What are the label restrictions? • Is the time of year/weather compatible with use of the chemical? • Is it suitable for the site and life stage of pest? • What is the proximity of sensitive sites, such as water, E/T spp. habitat, parks, schools? • What is the environmental persistence of chemical? • Is there potential for damage to non-target plant spp.? • Is there potential for damage to non-target animal spp.? • Can the problematic aspects of the chemical be mitigated or eliminated? • Are any new chemicals available? • Can the budget accommodate the use of this chemical? • What is the role of chemical in herbicide resistance mgmt? 	
<p>Check list for sensitive sites</p> <ul style="list-style-type: none"> • Is it a "highly sensitive site" as defined by PWD Environmental staff? • Is it under the PWD Routine Maintenance Agreement with Fish and Wildlife? • Is it part of any of the court-ordered injunctions? • Is it a known or potential habitat for any endangered or threatened species? • Is it on or near an area where people may walk or children may play? • Is it near an above ground drinking water reservoir? • Is it near crops? • Is it near desirable trees or landscaping? • Is the soil highly permeable, sandy or gravelly? • Is it within a Groundwater Protection Area? • Is it within an infiltration basin? 	<p>Other factors to consider:</p> <ul style="list-style-type: none"> • Where do physical (and possibly cultural) controls make the most sense? • Where is it most cost effective to use physical controls? • Where can herbicide use be reduced the most by substituting physical controls? • Where can grazing save wear and tear on employees? • Are there areas where using physical controls makes it possible to treat a larger area more efficiently than with chemicals? • Where and under what conditions is it most dangerous for employees to work? <p>Note that these choices are evaluated for planning purposes as much as 1 or 2 yrs. in advance. Some things require considerable lead time.</p>	

Appendix B.

- Report from the IPM Outreach Subcommittee to the Contra Costa County IPM Advisory Committee
- Pest Management Articles

Report from the IPM Outreach Subcommittee to the Contra Costa County IPM Advisory Committee

Prepared by Tanya Drlik, IPM Coordinator, November, 2018

Members

Carlos Agurto
Jim Cartan
Susan Heckly
Michael Kent – Chair
Gretchen Logue

To date, the IPM Outreach subcommittee has met five times in 2018: March 1, April 26, June 28, August 23, and October 25.

At their first meeting, after electing Michael Kent as chair, the subcommittee decided to continue the presentations to in-home visitors that began last year. A second task was to pursue outreach to the public through a series of articles about IPM for various pests.

In-Home Visitor Presentations

The goals of the presentations to in-home visitors are as follows:

- Reaching some of the County's most vulnerable residents through in-home visitors
- Informing County staff of the public health risks of having pests in the home
- Helping staff to recognize pest problems in their clients' homes
- Making staff aware of the resources available for their clients

Committee members have given a total of 13 presentations to 10 County programs and approximately 235 County staff and volunteers. Every presentation was very well received, and the programs were grateful for the information. The programs were as follows:

1. CCC Aids Program
2. Head Start Comprehensive Services
3. Public Health Nurses
4. County Connect
5. TB Outreach Program
6. Aging and Adult Services
7. In Home Supportive Services
8. Fall Prevention
9. Senior Nutrition
10. Promotoras/Health Conductors

In the future, the committee would like to widen the reach for the in-home visitor presentation to groups outside the County such as Kaiser, John Muir, and Sutter Health. Presentations could also be given to the County's Housing Authority staff. The County's Area Agency on Aging may have other contacts for in-home visitors.

IPM Articles

The subcommittee chose the following topics/pests for their series of articles and suggested times for their publication:

- The County's IPM practices (first article)
- Ants (late summer)
- Bed bugs (anytime)
- Cockroaches (anytime)
- Mold (fall/winter)
- Mice (fall)

- Rats (fall and spring)
- Sheet mulching (fall)
- General article on weeds (winter and/or spring)
- Other possible pests: yellowjackets, paper wasps, bees, gophers, moles, skunks, and raccoons

The committee reviewed and revised 7 articles and published them in the following media outlets:

- Supervisor Andersen's newsletter
- Richmond Standard
- Martinez Gazette
- Community Focus
- News 24/680

The committee will continue to pursue publication in other media outlets.

The completed articles are attached.

What is Contra Costa County doing about pest control?

This is the first in a series of articles about the County's Integrated Pest Management (IPM) Program and how the public can use similar tactics at home.

Contra Costa County has reduced its pesticide use by 75% since the County's IPM Program began. The Board of Supervisors adopted an IPM Policy in 2002 that requires the County to focus on long-term pest prevention and to combine the use of physical, horticultural, biological, and chemical control methods to manage pests. When pesticides are used, they are selected and applied in a way that minimizes risks to human health, to beneficial and non-target organisms, and to the environment.

In 2009, the County hired an IPM Coordinator and created an IPM Advisory Committee to advise the Board of Supervisors on pest management in County operations. The 13-member Committee is composed of both County staff and members of the public. The Committee is working with County staff to document the decision-making process for pests the County deals with. The Committee also created a presentation for in-home visitors to help them recognize pest issues in their clients' homes and to provide information on pest prevention. To date, Committee members have trained 233 in-home visitors.

The County manages rats, mice, ants, and cockroaches in and around 200 County buildings that comprise about 3.2 million square feet. The Grounds Division manages 132 sites on a weekly basis, and is on call for the rest of the landscaping around the more than 400 County properties. The Public Works Department manages vegetation on about 375 miles of the County's 660 miles of road and on 76 miles of flood control channels.

Over the past 15 years, the County has instituted a number of pest management innovations. In and around buildings, the County manages rats and mice solely by trapping—no rodenticide is used. Gophers and moles are managed by trapping or by injecting carbon monoxide into their burrows. Last year, the Public Works Department used goats to graze 375 acres of creek banks and flood control basins to reduce fire risk. Woodchips are used to suppress weeds on County properties, and every year the Grounds Division grinds dead trees into \$25K to \$45K of woodchip mulch.



Goats working on Rodeo Creek

The County has piloted several alternative control methods for rodents. In 2009, the Agriculture Department erected 20 raptor perches on Lime Ridge and Shell Ridge Open Space to attract hawks to help with ground squirrels. In 2012, the Agriculture Department experimented with live trapping ground squirrels along an East County road. In 2016 and 2017 the County worked with Eagle Scouts to install three owl nest boxes: one in Livorna Park and two in Kubicek Basin along Pine Creek in Walnut Creek.



Scout Troup 239 members with owl box in Kubicek Basin

The County is dedicated to continually improving how pests are managed and to using the least toxic and most cost-effective control measures. With its IPM Program, the County endeavors to lead by example.

This article was written by Tanya Drlik, Contra Costa IPM Coordinator, in conjunction with the Contra Costa County IPM Advisory Committee. The County is dedicated to continually improving how pests are managed, and to using the least toxic and most cost-effective control measures. With its IPM Program, the County endeavors to lead by example.

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Are ants driving you crazy?

Here are some tips from the Contra Costa Integrated Pest Management Program

Where you see one ant you are bound to see more. Their small size allows them to easily enter your home. They crawl in through openings around water and electrical lines, and through cracks and crevices in the foundation.

Argentine ants are the main nuisance ant in the Bay Area. They don't bite and they don't carry disease, but they invade homes. Outdoors, they protect insects like aphids and scales from natural insect enemies. Their ability to create giant colonies makes them difficult to control.

The scouts, whose job it is to locate food for the colony, will search your home high and low for sugary drinks, fruit or other sweet foods, and meat. Adult ants feed only on liquids. One of their favorite foods is the "honeydew" produced by plant-feeding insects like aphids and scales. Adults collect solid food to feed to the young in the nest.

Use the Integrated Pest Management (IPM) methods below to prevent this pest from infesting your home.

How to identify them

Argentine ants are 1/8 inch long and a shiny brown to black in color. They love the moist soil we create with our irrigation. They make shallow nests in the soil, under stones, logs, debris, concrete slabs, and often in potted plants. They make nests in wall voids, insulation, and cracks and crevices. They can even take up residence inside the overflow drain of a bathtub or sink, under carpets, and under piles of boxes.

What You Can Do when Ants Are inside Your Home

1. Spray ant trails with soapy water and then wipe them up.
2. Clean up spilled food and drinks immediately.
3. Keep food in the refrigerator, or tightly sealed in metal, glass, or heavy plastic containers.
4. Use caulk to seal cracks and crevices around the interior of the home.
5. Apply gel bait at the entry points ants are using to get inside your home.



Argentine Ant

Photo by Joyce Gross

What You Can Do to Keep Ants away from Your Home

1. Trim vegetation at least one foot away from the foundation to prevent access.
2. Remove or treat aphid-infested plants and trees and pick ripened fruit to reduce food sources.
3. Regularly clean the inside of garbage and recycling cans to remove residue that will attract ants.
4. Use caulk to seal cracks and crevices around the exterior of the home.
5. It is futile to try to kill all the ants outside your home, but where you see ant trails leading into the building, or find ant colonies that are close to the building, install exterior bait stations.

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For more information on the Contra Costa County IPM Program, please visit cchealth.org/ipm. For more information on ants, ask a Master Gardener! See http://ccmg.ucanr.edu/Ask_Us/
Look for the Eco-friendly Pest Control fact sheets in your local hardware store or nursery.

Don't Invite a Pest by Eating at Your Desk

In our fast paced world, eating at your desk is almost inevitable. It might be chips, chocolate, a piece of fruit, or a sandwich. You grab a quick bite and get back to your day.

The downside of eating at your desk is that it can provide food for pests.

When you're eating at your desk you are often in a rush. Cleaning up food crumbs and properly storing food is probably the last thing on your mind. However, it is one of the easiest things you can do to prevent pests *and* the potential use of pesticide in the office.

How Can You Help Prevent Pests?

Education is the first step for prevention. By using the simple Integrated Pest Management (IPM for short) methods below you can prevent pest infestations at your desk and in the office.

1. **FRUIT FLIES** are attracted to overripe or fermenting fruits and vegetables. Food or sugary liquids left in the bottoms of wastebaskets, recycling bins, forgotten food containers, or food scraps left in desk wastebaskets over the night can all be sources of fruit flies.

Solution: Don't leave fruit or vegetables out overnight and be sure to throw food away in receptacles that get emptied daily or in bins outside building.

2. **PANTRY PESTS** include beetles and moths that lay eggs in nuts, cereal, crackers, and even chocolate. They can show up when you leave uneaten food in the drawers of your desk.

Solution: Keep snacks and other food in rigid, sealed containers, not in plastic bags.

3. **ANTS** often come indoors to find food during summer and fall when they can no longer find food outside.

Solution: Whenever you see ant scouts wandering around, take extra care to clean up food spills and wipe down your desk by the end of each day. If you see an ant trail wipe it up with a soapy water solution.

4. **COCKROACHES** thrive in cluttered conditions that provide food and water, preferring to live in cracks and voids and even corrugated cardboard.

Solution: Reduce clutter such as stacked paper and cardboard boxes, report plumbing leaks to facilities, and clean food-soiled surfaces by the end of each day. Dispose of food waste in receptacles that are emptied daily.

5. **MICE** squeeze under doors or through holes around utility penetrations. They nest in clutter and will eat the food left inside of drawers.

Solution: Reduce clutter in work areas and store items up off the floor in cabinets, on racks, or in bins. Store food in rigid containers with tight fitting lids and do not leave food out overnight. Dispose of food waste in receptacles that are emptied daily. Don't leave doors to the outside open, especially in the fall when mice are looking for a nice warm place for the winter.

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Make lasagna in your back yard for non-toxic weed control!

Whether you are growing ornamentals, California natives, or food, weeds are bound to pop up in the home garden. Every garden needs maintenance, and it seems like weeding is a constant chore for the backyard grower as well as the professional. Sheet mulching can be a great alternative to using herbicides. It's a sustainable method of weed suppression that offers a host of additional benefits to the home garden, including increased organic matter, microbial activity, and water retention in your soil, not to mention that you can recycle and compost your cardboard boxes and egg cartons, old newspapers, or any other paper materials you have around the house!

You can think of sheet mulching as the lasagna approach to weed control in your garden: building layer upon layer of suppressive materials such as cardboard/paper, compost/soil, wood chips, grass clippings, or leaves. This layering effect deprives existing weeds and weed seeds of the light they need to grow. As these materials break down over time, simply add more layers to your lasagna for improved weed control.

You can use this technique around established plants in your yard or prepare a future planting area by sheet mulching first. Both approaches improve soil quality and decrease competition from weedy species. If using this approach, I recommend sheet mulching after a few fall rains have thoroughly moistened the soil. If you want to sheet mulch in the dry season, be sure to irrigate the area first, and sprinkle each layer you add. You can plant directly into an area that was sheet mulched, giving your starts an immediate boost of nutrients and water availability. Just cut a hole in the layers and set in your plant. You can also wait to plant in the spring or early summer. As the top layer decomposes, add more mulch. Weeds that sprout in the top of the mulch can easily be pulled out. If tough weeds are popping through, cut them off and add more layers of your materials. This will keep your plants happy until the next rainy season.

For a detailed, step-by-step description of how to sheet mulch, see <http://www.lawntogarden.org/residents>

Happy mulching!

This article was written by Jim Cartan, former chair of the Contra Costa County IPM Advisory Committee. The County is dedicated to continually improving how pests are managed, and to using the least toxic and most cost-effective control measures. With its IPM Program, the County endeavors to lead by example.

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Sheet mulching in the backyard

Photo by C. Nardozi

Having Rats in Your House is a Serious Problem!

Rats cause millions of dollars in damage to structures by gnawing. They can cause fires, explosions, indoor flooding, and damage to computer systems. They can contaminate food and eating utensils and transmit a number of diseases to humans. They can also carry tropical rat mites that can bite humans and cause serious annoyance.

Both the Norway rat and the roof rat can infest your home, but control is similar.

Norway rats have small, thick ears and a blunt snout with a tail that is shorter than the body. Their habitat is generally near the ground in burrows, in basements, or on the ground floor. They might nest in the walls of a building, in cluttered areas, and in sewers and storm drains.

Roof rats have large, thin, hairless ears and a pointed snout with a tail that is longer than the body. Their habitat is generally higher up, so they might nest in attics, in wall voids higher in the building, and in trees (especially palm trees).

Signs of an Infestation

- Rodent droppings, urine stains, and greasy rub marks along their pathways or feeding areas
- Gnaw marks on wires, food packages, wood, and parts of the structure
- Squeaking or other noises in the walls from gnawing or climbing
- Live rats—if you are seeing them during the day, you probably have a serious problem

Tip for Preventing an Infestation

- Store pet food, bird seed, and grass seed in rodent-proof containers, or at least inspect often for signs of gnawing.
- Pick up pet droppings and fallen tree fruit and nuts daily.
- Never leave food (for pets or humans) inside or outdoors overnight. You cannot count on dogs or cats to keep rats away.
- Fix leaky plumbing and eliminate any unnecessary standing water.
- Dispose of all garbage in garbage cans with tight fitting lids that are kept closed.
- Reduce clutter and debris; stack firewood up off the ground away from your house.
- Trim trees, vines, bushes, grass, and weeds at least 3 to 6 feet away from the home to decrease rodent access.
- Avoid large expanses of low groundcover, like Algerian ivy, that could allow rats to run for long distances without being seen.
- Seal any opening, hole, or gap larger than ½” on the interior and exterior of your home.
 - Rodent exclusion materials include copper wool, sealant, ¼” stainless steel screen mesh, and rodent resistant door sweeps.

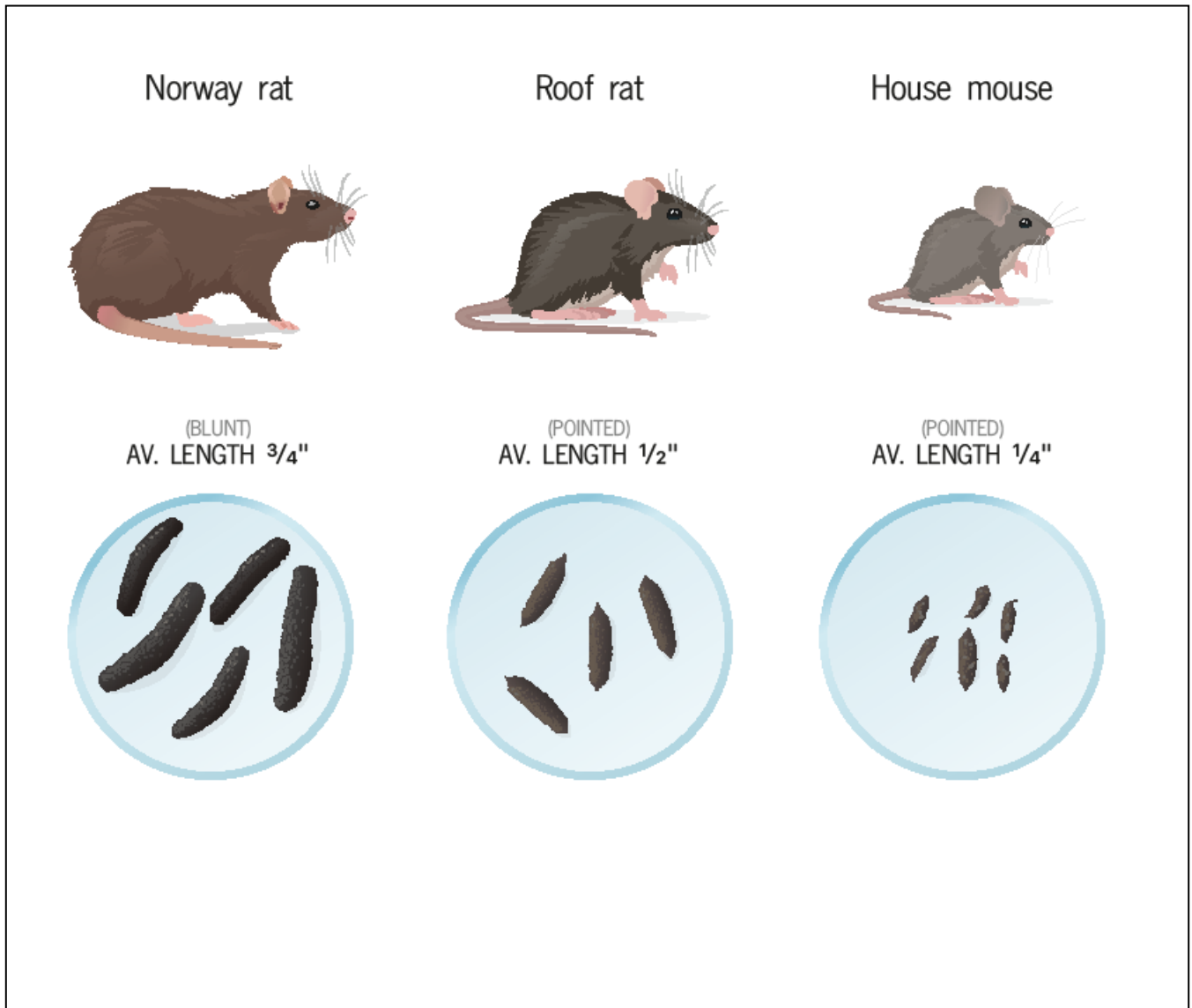
What You Can Do if You Have Rats

- Use snap traps (lots of them) to reduce the population.
- Place snap traps along rodent pathways next to a wall and bait with food they are already eating.
- Monitor traps regularly and frequently and keep bait fresh. Rats avoid old or rancid bait.
- Only use rodenticides as a last resort. Poisoned rodents may die in inaccessible places and cause odor and fly problems, or they can be eaten by pets or wildlife which could then be poisoned. It is illegal to use rodenticides except to control rodents invading a building.
- Always wear gloves when handling traps or carcasses. Wrap carcasses in plastic and dispose of in the trash.
- To safely clean up rat droppings or nests, spray the area with a disinfectant, wait 10 minutes and then wipe up the debris. Use gloves and a mask.

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Watch out for mouse invasions as the weather cools!

As we move into fall, mice are often looking for a warm, dry space to spend the winter. The house mouse is a pest throughout most of the world because it reproduces quickly, requires very little food and water, and can enter homes through tiny openings. Once inside, mice live in small nooks and crannies and/or cluttered spaces where they can find food crumbs and make nests.

Mice not only damage your property, but they can also contaminate food and transmit diseases through their droppings and urine. Mouse urine contains a powerful allergen that can trigger asthma attacks and allergic reactions. That is why it is so important to keep this pest out of your home. Use the Integrated Pest Management (IPM) methods below to prevent this pest from infesting your home.

How to Identify a House Mouse

Adult house mice range from 4 to 8 inches in length, including a tail that is typically the same length as their body. They range in color from a uniform light brown to nearly all black and typically weigh from 0.5 to 1 ounce.

Signs of a Mouse Infestation

- Sightings of live or dead mice
- Droppings, urine stains, and “rub marks” on surfaces--rub marks come from the oils on their fur as they travel between their food source and nest
- Gnaw marks on wires, food packages, wood, and other parts of the structure
- Chewed and shredded items like paper and fabric that mice are using for nesting materials

What You Can Do To Get Rid of Mice in Your Home

1. Identify food sources and store them properly or remove them from your home.
2. Identify nesting areas and use snap traps, rather than rodenticides or sticky traps, to eliminate the infestation. Use lots of traps and place them along walls or other edges where droppings have been found.
3. Use gloves to safely remove and dispose of mice that have been caught.
4. After all mice have been trapped, seal up entry points and any voids they were using as harborage. Use rodent proof materials such as 1/4” stainless steel screen mesh, brass wool, metal flashing, and concrete. Use durable doorsweeps in combination with a proper threshold to block mice from getting in under doors.
5. Safely clean up mouse droppings, urine, and nests by first spraying the material with a disinfectant and leaving for 10 minutes. Wear gloves and a dust mask to avoid touching the material or breathing the dust.

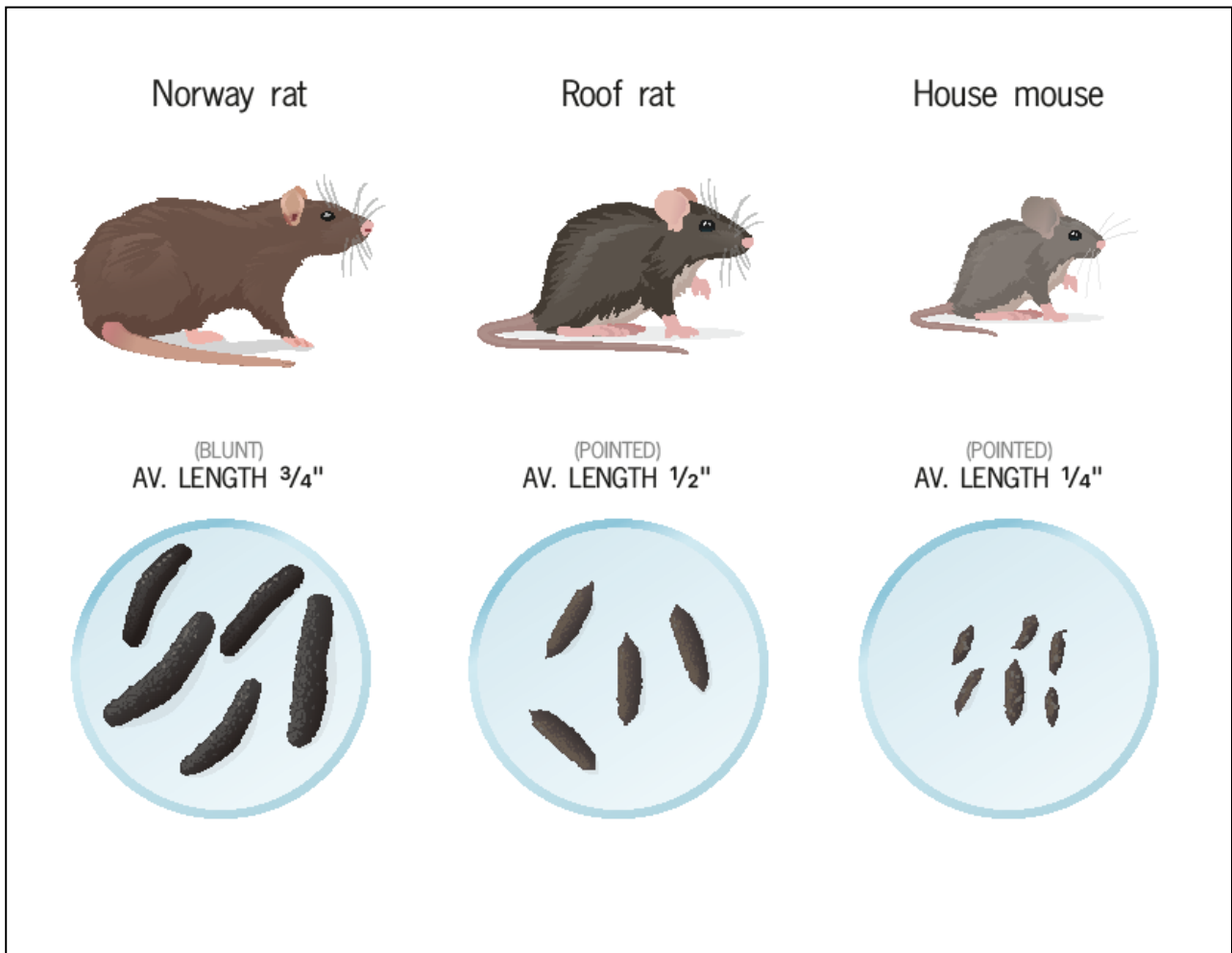
What You Can Do to Prevent Mice in Your Home

1. Remove clutter such as stacked boxes, newspapers, and piles of clothes.
2. Keep food tightly sealed in metal, glass, or heavy plastic containers.
3. Store leftovers in the refrigerator instead of leaving food out on counters overnight.
4. Clean up spilled food and drinks immediately.
5. Fix leaky plumbing and prevent standing water around the home.
6. Empty garbage cans routinely and keep lids tightly closed.
7. Trim vegetation away from your home to reduce access to the building.
8. Seal openings large enough to stick a pencil through. Examples are broken screens or vents, gaps around utility pipes and wires, cracks in the foundation, and gaps under or between doors.

This article was written by Pestec IPM Provider staff in conjunction with the Contra Costa County IPM Advisory Committee. The County is dedicated to continually improving how pests are managed, and to using the least toxic and most cost-effective control measures. With its IPM Program, the County endeavors to lead by example.

For more information on the Contra Costa County IPM Program, please visit cchealth.org/ipm. For more information on mice, ask a Master Gardener! See http://ccmg.ucanr.edu/Ask_Us/

Look for the Eco-friendly Pest Control fact sheets in your local hardware store or nursery.



Bed Bugs are Back!

And they are causing serious problems here and in communities across the country. These bothersome bugs don't spread disease, but they can cause severe stress and can be a nightmare to get rid of on your own. Bed bugs are a pest of exposure, meaning that if you are exposed to them, it's possible to take them home with you—anyone can get bed bugs.

I experienced an infestation as a teenager 40 years ago in my rural New Mexico home. We suffered for a year before figuring out what was causing the embarrassing red welts on our faces and arms. Bed bugs were rare in those days, and my family knew nothing about them. Powerful and persistent pesticides like DDT nearly eliminated bed bug infestations in this country, and our collective memory does not include information on how to identify or combat them.

Unfortunately, the insecticides we have today don't work well against bed bugs, and bringing back DDT would not help. Bed bugs quickly became resistant to DDT in the late 1940s and today show widespread resistance to pyrethroids, one of the main classes of insecticides in use for bed bug control.

There is serious misuse of insecticides by people desperate to get rid of bed bugs. Consumer insecticides are not effective against bed bugs. Bug bombs and foggers do not work. Misusing insecticides is ineffective, illegal and endangers your health—more so than the bugs!

The best strategy for homeowners and landlords is to hire a pest control company with extensive experience in controlling bed bugs. Ask for references and contact them. Talk to the company about their inspection techniques and control tactics. They should inspect thoroughly before recommending treatment and should be using a wide variety of tools, such as vacuums, steam machines, heat fumigation, traps, and mattress encasements, in addition to insecticides. Effective bed bug treatment can be expensive and involve repeat visits. Be prepared to do some of the work yourself, including laundering, bagging clothes and bedclothes and removing clutter.

If you can't afford a pest control company, there are things you can do to alleviate the problem.

Eliminate clutter, seal all cracks and crevices. Clutter makes it challenging to inspect and difficult to treat for bed bugs. Eliminating holes and cracks will make it harder for bugs to hide and to move from room to room.

Thoroughly inspect beds and furniture. Grab a strong flashlight and a magnifying glass to find every bug. Use a spray bottle filled with soapy water to slow them down and drown them. You can also use a vacuum or packing tape wrapped around your hand with the sticky side out to capture bed bugs. Put vacuum bags in a large plastic trash bag and knot it to make sure no bugs escape. Steaming with a commercial steamer will kill bed bugs, but you must move the steamer slowly over the surface, and be very diligent.

Bug-proof bed and furniture. Move clean furniture away from walls and other furniture to eliminate bridges for bed bugs. Cover infested bedsprings with a high quality mattress encasement. Use insect interceptors, like ClimbUp®, under each furniture leg. These will catch bugs climbing down or trying to climb up.

Use the dryer to kill bed bugs. Fifteen minutes on high heat will kill all stages of the bed bug on dry items. If you wash clothes first, dry them and then give them an extra 15 minutes on high to be sure any bugs are dead.

Maintain good housekeeping. Once an infestation is under control, maintain good housekeeping to make it easy to regularly inspect for new infestations.

Be careful when traveling. It's also a good idea to inspect hotel rooms when traveling to ensure you don't bring any bed bugs home.

For more information about bed bugs, including photos, and control methods in English and Spanish, visit www.cchealth.org/bedbugs



Adult bed bug on a dime

This article was written by Tanya Drlik, Contra Costa IPM Coordinator, in conjunction with the Contra Costa County IPM Advisory Committee. The County is dedicated to continually improving how pests are managed, and to using the least toxic and most cost-effective control measures. With its IPM Program, the County endeavors to lead by example.

For more information on the Contra Costa County IPM Program, please visit cchealth.org/ipm.

Appendix C.

- Posting Task Force Recommendations
- Posting Sign Recommendation
- Recommended Changes to Posting Policy

Recommendations from the Posting Task Force

July 16, 2018

Members of the Task Force: Jim Donnelly (chair), Carlos Agurto, Gretchen Logue, Larry Yost

The IPM Posting Task Force met six times and thoroughly discussed both the pesticide treatment notification sign and the posting policy. The public was in attendance at each meeting and was allowed input into all aspects of the discussions.

The Task Force created a revised posting sign and posting policy and recommends that the County do the following:

1. Revise the County's posting sign as indicated below.
2. Revise the County's posting policy as indicated in the tracked-changes document below.
3. Investigate posting on flood control channel access roads where people frequently walk, or on other rights-of-way that are frequently used as walking paths.
4. Investigate the feasibility of erecting permanent signs and where those signs would be useful.
5. Investigate a way for people to make a complaint online about pesticide use.
6. Investigate a way for pesticide treatment notifications to be sent to people who sign up for email notices.



NOTICE

OF PESTICIDE TREATMENT



Contra Costa County Public Works

Contra Costa County has reduced its pesticide use by 79% since the County initiated its Integrated Pest Management (IPM) Program began. The County's IPM Policy focuses on long-term pest prevention and combines the use of physical, horticultural, biological, and chemical methods to manage pests. When pesticides must be used, they are selected and applied in a manner that minimizes risks to human health, to beneficial and non-target organisms and to the environment.



Considering the above, it has been decided that a pesticide treatment is necessary in this area.

Avoid area during active pesticide application.

Pesticide Trade Name:

Active Ingredient(s):

Acute (short-term) health hazard warning:

EPA Number:

Target Pest(s):

Method of Treatment:

Area(s) to be Treated:

Date of Scheduled Application:

Date/Time it is okay to re-enter (per EPA label):

Date Completed:

Exposure to pesticides may cause acute or chronic health risks to humans or animals.



For more information about this treatment, contact

Contra Costa County Public Works at 925-313-7052

Tanya Drlik, IPM Coordinator at 925-335-3214 or

tdrlik@hsd.cccounty.us

For more information on IPM: cchealth.org/ipm

For more information on pesticides, contact

CONTRA COSTA COUNTY PESTICIDE USE POSTING AND NOTIFICATION POLICY

General Provisions

This policy applies only to land owned by the County of Contra Costa.

Any County Department that uses or authorizes the use of a pesticide shall comply with the following posting and notification procedures:

- Signs shall be posted at least three (3) days before application of the pesticide and remain posted at least four (4) days after application. In specific situations/locations, permanent signs may also be used. See provisions below under “Exemptions” and “Other Uses of Permanent Signs”.
- Application information shall be posted on the County website’s pesticide posting page at least three (3) days before the application. If the application is postponed or changed, information on the website must be updated.
- If treatment is in an enclosed area, signs shall be posted at all major public and employee entry points.
- If treatment is in an open area, signs shall be posted at highly visible location(s).
- ~~Posting signs for rat and mouse~~If rodenticides are used in bait stations for rats or mice, bait stations shall be posted at eye level on the wall or other structure above the bait station.
- Exceptions to these provisions are listed below under “Exemptions”.

Contents of Signs

The signs shall be of a standardized design, easily recognizable by the public and County employees and shall contain the following information:

1. Name of pesticide product
2. Active ingredient(s) in the product
3. United States Environmental Protection Agency ([USEPA](#)) or California State registration number
4. Target pest
- ~~5. Signal word on the product label indicating the toxicity category of the pesticide product~~
- ~~6. Date of posting~~
- ~~5. Acute health hazard warning (from the label’s precautionary statement)~~
- ~~6. Area to be treated~~
- ~~7. Method of treatment~~
- ~~7.8. Date(s) of anticipated use; a window of time for anticipated use is acceptable~~
- ~~8.9. Date of re-entry for staff and the public to the treated area, if applicable~~
- ~~10. Date application is completed~~
- ~~9.11. Name and contact number of County Department responsible for the application~~
- ~~10.12. Website~~IPM website address for more information
- ~~13. IPM Coordinator name and contact information~~
- ~~14. National Pesticide Information Center contact information~~

Exemptions

Departments shall *not* be required to post signs in accordance with the provisions above

- ~~1. in roadway rights-of-way~~
- ~~2. in other areas~~ that where the general public ~~does has~~ not been granted access for use for recreation or pedestrian purposes. Recreation is defined as any activity where significant physical contact with the treated area is likely to occur.

Note: ~~Each~~In the case of numbers 1 or 2, each department that uses pesticides in such locations shall provide a public access telephone number for information about pesticide applications. The public access telephone number shall be posted in a prominent location at the department’s main office building. Information provided to callers shall include all items listed under “Contents of Signs”, above.

- 3. in or around County-owned or -leased buildings, if the pesticide is on a list agreed to by the IPM Advisory Committee.

Note: Each County building shall post a permanent sign in a prominent location with a list of pesticides that may be used in or around the structure without individual postings. Pesticides not on this list must be posted in accordance with the provisions above. The permanent signs shall contain the following:

- ea. Name of the pesticide product
- eb. Active ingredient(s) in the product
- a. ~~Signal word on the product label indicating the toxicity category of the pesticide product~~
- c. Acute health hazard warning (from the label's precautionary statement)
- ed. Areas inside or outside the building where the pesticide might be used
- ee. Name and contact number of County Department responsible for applications

Any pesticide granted an emergency exemption for public health emergencies or other urgent situations by the County IPM Coordinator shall not be required to be posted prior to treatment. However, all other requirements for posting, as set forth above, shall be followed.

Use of any pesticide listed by the Organic Materials Research Institute or of any products on the FIFRA 25(b) list or in California Code of Regulations Section 6147 may be posted on the day of application. All other provisions listed above apply.

The County IPM Coordinator may, at his or her discretion, grant necessary exemptions to the posting requirements. Such exemptions will be documented with the reason for the exemption.

Other Uses of Permanent Signs

In addition to the provisions above regarding permanent signs in and around buildings, permanent signs are acceptable in areas away from county-owned or —leased buildings where pesticide applications are a regular, periodic occurrence. The following provisions apply:

1. The permanent sign must contain, at minimum, the following information
 - a. Target pest(s)
 - b. Reason for treatment
 - c. For additional information contact: Name and contact number of County Department responsible for ~~the application~~applications
 - d. ~~Website~~Posting website address for more information
 - e. General statement on when treatment is likely to occur, e.g., "spring" or "May – June"
2. At least three (3) days before any pesticide application, the application information must be posted on the County website's pesticide posting page. If the application is postponed or changed, information on the website must be updated.
3. On the actual day of the pesticide application prior to beginning application, a paper sign with the information listed above under "Contents of Signs" must be affixed to the permanent sign and remain for at least four (4) days.

Appendix D.

- **San Francisco Request for Qualifications for Heavy Cleaning and Infestation Preparation Services (see separate PDF)**

Appendix E.

- **Pesticide Use Reporting**

(See separate PDF for Contra Costa Operations Pesticide Use Data Spreadsheet)

Pesticide Use Reporting

(See separate PDF for Contra Costa County Operations Pesticide Use Data Spreadsheet)

History of Pesticide Use Reporting

Since the 1950s, the State of California has required at least some kind of pesticide use reporting, but in 1990, the comprehensive reporting program we have now went into effect.

California was the first state in the nation to require full reporting of all agricultural and governmental agency pesticide use. The current reporting system exempts home use pesticides and sanitizers, such as bleach, from reporting requirements. (Sanitizers are considered pesticides.)

What does “pesticide” mean?

The California Department of Pesticide Regulation (DPR) defines pesticide as “any substance or mixture of substances intended for preventing, destroying, repelling or mitigating insects, rodents, nematodes, fungi, weeds, or other pests. In California plant growth regulators, defoliants, and desiccants, as well as adjuvants, are also regulated as pesticides.”

“Adjuvants” increase pesticide efficacy and include emulsifiers, spreaders, foam suppressants, wetting agents, and other efficacy enhancers. In FY 16-17, Contra Costa County operations used a total of 4,709 lbs. of pesticide active ingredients, which included 2,322 lbs. of spray adjuvant active ingredients that were used to prevent foaming, to reduce pesticide drift, and change the pH of local water used in spraying.

How Pesticide Use is Reported to the State

Pesticide use data is reported monthly to the County Agriculture Commissioner. The data is checked and sent on to DPR, which maintains a database of pesticide use for the entire state. Although pesticide use is reported to DPR as pounds, ounces, or gallons of pesticide product, DPR reports pesticide use in its database as pounds of active ingredient.

DPR defines active ingredient as “[a]n agent in a product primarily responsible for the intended pesticidal effects and which is shown as an active ingredient on a pesticide label.” (Since adjuvants are regulated as pesticides in California, the active ingredients of adjuvants are also included in DPR’s database.)

How Pesticide Use is Reported by Contra Costa County Operations

The attached spreadsheet records pesticide use data only for County operations and not for any other agency, entity, company, or individual in the County.

Since DPR reports California pesticide use in pounds of active ingredient, Contra Costa County does the same. The County uses the same formula for converting gallons of pesticide product into pounds of active ingredient that the state uses:

Pounds of Active Ingredient =

gallons of product used X 8.33 lbs/gallon of water X the specific gravity of the product X the % of active ingredient in the product

**Contra Costa County Staff Responses to Issues Raised by the Public
Regarding the County Integrated Pest Management Program**

~~November~~ January 29, 2019

Date(s) Issue Raised to: TWIC = Transportation, Water & Infrastructure Committee IPM = IPM Committee or subcommittees IO=Internal Operations Committee	Issues Raised by the Public	Steps taken by the IPM Advisory Committee and County Staff from January 2009 to the present
Using glue boards for rodents in County buildings		
11/16/16-IPM 3/16/17-IPM 1/18/18-IPM 1/17/19-IPM	<i>From Parents for a Safer Environment (PfSE)</i> "The rodent control method that is horrible in particular is the use of glue boards in the county buildings. I hope to see this deplorable practice stop before the beginning of the NewYear. (11/16/16)	Pestec, the County's structural IPM contractor, used a small number of glue boards in 2016. In the past, glue boards have been used from time to time in detention facilities at the request of the Sheriff who is concerned that snap traps, the alternative, could be used by inmates as weapons. Pestec now has access to the interior space between the walls of cells where mice can roam, so technicians are able to set snap traps in those areas. Glue boards are not currently used at any other facilities in the County. The County will keep glue boards as a tool for rodent control that will be used when there is no effective alternative.
<u>Choosing topics and speakers for the IPM Advisory Committee meetings</u>		
1/18/18-IPM 3/15/18-IPM 5/17/18-IPM 7/19/18-IPM 1/17/19-IPM	<i>From Parents for a Safer Environment (PfSE)</i> <u>Speakers suggested by PfSE have not been chosen to give presentations to the IPM Committee.</u>	<u>The public has always been able to participate in suggesting speakers and topics for the IPM Committee meetings. A number of speakers and/or topics suggested by the public have been used over the years. In 2018, the IPM Committee spent several meetings on defining how speakers and topics will be chosen, with full participation of the public. The Committee now has a written policy that has been unanimously approved by the members.</u>
<u>Herbicide spraying in a city park on Grayson Creek with no posting</u>		
3/1/18-IPM	<i>From Parents for a Safer Environment (PfSE)</i> <u>"It was very upsetting to see these large areas treated with pesticide in such close proximity to where residents also spend time with their children and pets."</u>	<u>This should not have happened and as soon as the Public Works Department was alerted to the issue, they did an investigation and ultimately the employee responsible was disciplined.</u>
<u>Using raptor perches to control ground squirrels</u>		
1/18/18-IPM 3/1/18-IPM 3/15/18-IPM 4/5/18-IPM 7/19/18-IPM 8/2/18-IPM	<i>From Parents for a Safer Environment (PfSE)</i> <u>Ventura Co. has concluded a study showing that using perches for predatory birds reduce ground squirrel damage to levees by 50%. Contra Costa should adopt this method.</u>	<u>This was a small pilot study. Dr. Roger Baldwin, vertebrate specialist and researcher at UC Davis said he would not place a lot of weight on this study. "It is a small pilot study from which they are drawing 'massive' conclusions. Raptors 'may' be able to assist in some capacity, but they certainly aren't going to eliminate burrowing rodents from an area."</u> <u>In 2012, the Agriculture Department piloted the use of raptor perches in two Open Space areas. The installation of raptor perches did not seem to significantly reduce ground squirrel populations and ground squirrels undermined the footings of two of the raptor perches.</u> <u>Note that members of PfSE have been saying that the Agriculture Department used metal perches and that is why they did not work. This is not true. The perches are</u>

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		<p>made of wood.</p> <p>The UC website, Ground Squirrel BMPs, says the following: “In California, predators of ground squirrels include red-tailed hawks, eagles, and coyotes. As ground squirrels and their native predators have evolved over hundreds of years, ground squirrels have developed behaviors and abilities to avoid predation. In certain habitats, ground squirrels are frequent prey of rattlesnakes, though some ground squirrels have evolved a resistance to snake venom. Owls are nocturnal and do not generally prey on diurnal ground squirrels. “In the majority of situations, predators are not able to control ground squirrel populations.”</p>
Chairing the IPM Committee should be rotated; a scribe not associated with the Committee should be used to take notes		
2/17/16-IPM 1/17/19-IPM	<p><i>From Parents for a Safer Environment (PfSE)</i> “Chairing the IPM Advisory Committee should be rotated among members who wish to chair. A Scribe should be independent of Committee members and staff involved with the IPM Program.”</p>	<ul style="list-style-type: none"> • Every 2 years the Committee holds an election for officers. Anyone who wishes to chair the committee can nominate themselves. • The Committee elects a secretary to help take notes for the Committee’s minutes which are written by staff. There is no outside person who could be a scribe.
Staff has found no unique or innovative pesticide alternatives in the Bay Area or Nation		
11/4/15-IPM 2/17/16-IPM	<p><i>From Parents for a Safer Environment (PfSE)</i> “In the staff document provided titled 2015 IPM Program Accomplishments, I was very surprised to read that staff believes after reviewing programs throughout the ‘Bay Area and the nation’, that ‘there is nothing unique or innovative in the Bay Area or the nation.’”</p>	<ul style="list-style-type: none"> • PfSE appears to be concerned that staff has found no unique or innovative approaches to pest management. This concern seems to stem from a mis-reading of the 2015 IPM Program Accomplishments document in the section on the work history of the IPM Program Data Management subcommittee. The phrase actually reads: “Looked for data other than pesticide use to measure implementation of IPM in CCC; found nothing unique or innovative in the Bay Area or the nation”
The IPM Coordinator does not allow the IPM Committee members and the public adequate time to review documents		
9/2/15-IPM	<p><i>From Parents for a Safer Environment (PfSE)</i> “People are often reluctant to admit that they have not had time to review documents before voting on minutes and other items. Committee members are likely to just go along with the majority and vote to accept documents as Staff submits them...It is more</p>	<ul style="list-style-type: none"> • The IPM Coordinator sends out agenda materials in accordance with the Brown Act and County policy, which is 96 hours prior to the time of the public meeting. • At the end of each meeting, the next meeting’s agenda is planned so that members are aware of and can plan time for review of long or numerous documents. • Since the inception of the IPM Advisory Committee, the practice has been to distribute the minutes with the agenda materials. Because the by-laws were being updated to reflect the current designations for IPM Committee seats and to change public member terms, the IPM Coordinator proposed changing the by-

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	<p>reasonable to provide at least four to six weeks of time for volunteers to fit in the review amongst a busy schedule.” (9/2/15)</p> <p>“...I find it appalling that Staff would propose to totally eliminate the By-Laws language that requires a timely distribution of the meeting minutes to the IPM Advisory Committee. It has been difficult to read all the documents required for review within 5 days [from when] they are provided, which is a recent improvement to providing it 3 days prior to meetings that was practiced before my letter earlier this year...The By-Laws currently states that minutes be distributed 1 week after the meeting...I believe it's reasonable to amend [the by-laws] to distributing the materials within 2 weeks after the meeting to give staff time to prepare the meeting minutes, but eliminating this important timeline is not acceptable to the community.” (9/2/15)</p>	<p>laws to reflect the current practice regarding distribution of the minutes. On 9/2/15 the IPM Committee members discussed these by-laws changes and heard comment from the public on the issue. The Committee voted to unanimously approve all the by-laws changes. The changes were approved by the full Board of Supervisors.</p>
IPM subcommittees should focus on pesticide use and not on bed bugs or removing turf		
<p>2/16/15-IPM 2/17/15-IPM 2/20/15-IPM 3/2/15-TWIC 3/4/15-IPM 5/6/15-IPM 8/6/15-IPM 9/2/15-IPM 11/4/15-IPM</p>	<p><i>From Parents for a Safer Environment (PfSE)</i></p> <p>Issue of the subcommittees working on bed bugs, a community problem, rather than County-only pesticide issues and working on turf removal around buildings rather than on pesticide use in rights-of-way</p>	<ul style="list-style-type: none"> • Bed bugs affect 1000s of Contra Costa residents, both in municipalities and the unincorporated areas of the County. In order to get relief, desperate citizens are using many different kinds of pesticides in the home, throughout the bedroom, and often on the bedding itself. Reports indicate that frequently pesticides are used to excess and in a manner contrary to the labeled directions. This intimate contact with, and misuse of, pesticides is very troubling. This is a serious issue of pesticide exposure and contamination as well as an issue of the well-being of Contra Costa residents that the County has an obligation to address. • There are also bed bug issues that need to be addressed in County buildings. Staff and buildings are vulnerable where the public goes in and out of offices frequently and in large numbers. Staff and supervisors need training in identifying risks, actual infestations, and opportunities for prevention. • Converting turf to drought-tolerant landscaping accomplishes several things: <ul style="list-style-type: none"> ○ Saves millions of gallons of water in this time of serious drought. ○ Reduces the need for weed control and thus for herbicides. The limited irrigation and wood chip mulch between the drought-tolerant plants is not conducive to weed growth. Few weeds sprout in the dry soil under the mulch, and those that do sprout can often be hand-pulled. ○ Addresses herbicide use near buildings, which is where people have the greatest chance of being exposed to these pesticides. ○ Reduces maintenance hours because turf is a high maintenance plant.

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		<ul style="list-style-type: none"> ○ Frees Grounds maintenance staff to better manage other landscapes and continue to reduce their use of pesticide. ○ Reduces the amount of electricity used to pump water, the amount of gas used in lawn mowers and trimmers and in trucks to travel to and from sites for maintenance, and reduces the amount of pesticide and fertilizer used in maintaining the turf. This reduces greenhouse gas emissions. ○ Demonstrates that the County is a leader in landscaping more wisely for the arid climate in which we live.
County not tracking pesticide use separately for Public Works rights-of-way/roadsides, flood control channels, and County-owned parcels		
<p>3/2/15-IPM 8/26/15-Email 3/16/16-IPM 1/17/19-IPM</p>	<p><i>From Parents for a Safer Environment (PfSE):</i> “We do not see any good reason why pesticide usage is not being provided to the community for each roadside and flood control program.” (3/2/15) “Posting online of pesticide use reports from each program simultaneously as they are generated [monthly]” (1/17/19)</p>	<ul style="list-style-type: none"> • The County has always tracked pesticide use separately for roadsides, flood control channels, and County-owned parcels, but because of a recent change in the way the Department reported pesticide use to the State of California, the state Pesticide Use Reports for FY 12-13 and FY 13-14 were not separated. The database that Public Works uses to track pesticide use cannot produce reports for PfSE that are user friendly since the database was never intended to be a pesticide use reporting tool. As a courtesy to PfSE, the Department has resumed separating pesticide use for the 3 programs when it reports to the state. These Pesticide Use Reports have been provided to PfSE for FY 14-15. • There is not the staff available to post each of the monthly pesticide use reports on the IPM website, and there has been no interest for this expressed by the public except PfSE. These reports are public records and are available for anyone who wants to request them.
Report the total amount of pesticide used not just the active ingredients		
<p>8/26/15-Email 11/4/15-IPM</p>	<p><i>From Parents for a Safer Environment (PfSE):</i> “Report total amount, not just the active ingredients of pesticides used in usage spreadsheet”</p>	<ul style="list-style-type: none"> • In the spread sheet prepared by the IPM Coordinator every year for pesticide use by County operations, the total amount of pesticide product used is recorded as well as the total amount of pesticide active ingredient used for each product. • The California Department of Pesticide Regulation reports pesticide use for the state in pounds of active ingredient. The County has adopted this system so that pesticide use reporting is aligned with the state. But as noted above, the County spreadsheet also records total pounds or gallons of pesticide product used. • The spreadsheet is posted on the IPM website and attached to the annual report.
Corrections to the minutes of the IPM Advisory Committee or its subcommittees requested by PfSE		
<p>5/6/15-IPM 6/9/15-IPM 8/6/15-IPM 7/20/16-IPM</p>	<p><i>From Parents for a Safer Environment (PfSE)</i> Issue of PfSE requesting changes to the minutes and then changes are not made</p>	<ul style="list-style-type: none"> • The IPM Committee members vote on whether or not to make corrections to the minutes. The members do not always vote to make PfSE's corrections, additions, and changes. The IPM Coordinator includes written changes from PfSE (as well as other public comment) as attachments to the official record of the meeting. The official agenda, minutes, public comment, and other attachments are posted on the IPM website.
The herbicide Roundup (active ingredient glyphosate) has been designated as a probable human carcinogen by the World Health Organization’s International Agency for Research on Cancer (IARC)		
<p>6/9/15-IPM</p>	<p><i>From Parents for a Safer</i></p>	<ul style="list-style-type: none"> • In 2015, he IPM Coordinator attended meetings in San Francisco with IPM

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7/8/15-IPM 8/6/15-IPM 9/2/15-IPM 7/20/17-IPM 11/16/17-IPM 1/18/18-IPM 9/20/18-IPM	<i>Environment (PfSE):</i> “Considering that RoundUp products with the active ingredient, glyphosate, is [<i>sic</i>] being applied at the rate of nearly 1,000 lbs annually in the Grounds Program alone, and that glyphosate has been listed as a Probable Human Carcinogen by the World Health Organization earlier this year, are there any plans by the county to eliminate this risky chemical to reduce exposure to the community and wildlife?”	coordinators and city and county staff from around the Bay to discuss the Roundup issue. At this point we do not have a less hazardous product with equivalent efficacy to replace Roundup, but we continue to look for one. The Grounds Division uses Roundup as a spot treatment and uses a little as necessary. In FY 14-15 the Grounds Division used 311 lbs. of glyphosate, the active ingredient in Roundup. <ul style="list-style-type: none"> • The most serious risk of exposure to Roundup is to the applicator because that person is in close contact with the material, sometimes daily. The law and the County require applicators to wear personal protective equipment and to be trained annually to prevent exposure. In light of the new probable carcinogen designation, the County is looking at whether there are additional precautions that should be taken to protect workers. • IARC identifies the potential for a chemical to cause cancer but does not quantify any increased risk to people from a chemical so designated nor does it recommend a safe level of exposure. Those designations are left up to regulatory agencies around the world. The County is waiting for the USEPA to complete its review of glyphosate. • On 11/12/15, the European Food Safety Authority ruled that glyphosate probably does not cause cancer in humans despite IARC’s findings. • In March 2017, the Australian government’s Pesticides and Veterinary Medicines Authority (APVMA) produced its Final Regulatory Position on whether to conduct a formal reconsideration of the chemical glyphosate. They stated that “[b]ased on this nomination assessment, the APVMA concludes that the scientific weight-of-evidence indicates that: exposure to glyphosate does not pose a carcinogenic or genotoxic risk to humans.” • In April 2017, Health Canada released the following statement, “Following a rigorous science-based assessment, Health Canada has determined that when used according to the label, products containing glyphosate are not a concern to human health and the environment.” • The County is still waiting for the final risk assessment from the USEPA. • In November 2017, researchers updated the Agricultural Health Study, which is a 20-year study of the effects of glyphosate on over 54,000 licensed pesticide applicators from North Carolina and Iowa. They found no statistically significant associations with glyphosate use and cancer in any part of the body. However, among applicators in the highest exposure quartile, there was an increased risk of acute myeloid leukemia compared with those who had never used glyphosate, though this association was not statistically significant. The researchers noted that this association requires confirmation. • In August 2018, a San Francisco jury awarded a Benicia School District employee \$289 million in his lawsuit alleging that Monsanto’s glyphosate caused his non-Hodgkin’s lymphoma. In October 2018, the judge in the case reduced the award to \$78 million. Monsanto is appealing the judgment. There may be some concern in the County about liability attached to continuing to use glyphosate to manage weeds. Both County Counsel and Risk Management are aware of the lawsuit.
	Questions posed during public comment for items not on the agenda are not answered by the IPM Committee	
8/6/15-IPM	<i>From Parents for a Safer</i>	<ul style="list-style-type: none"> • The IPM Committee does not take up and discuss issues that are not on the

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7/20/16-IPM 9/21/16-IPM 3/16/17-IPM 11/16/17-IPM 1/11/18 Email 1/18/18-IPM	<i>Environment (PfSE):</i> "...please allow ample time for answering and discussing these 6 questions as listed in order of priority at the next meeting agenda. Community members have been waiting patiently since last year for most of these questions to be addressed."	published agenda for the meeting as this would be a violation of the Brown Act. <ul style="list-style-type: none"> Members of the Committee can request to have public concerns put on the agenda for a future meeting.
IPM Committee members should RSVP for each meeting		
6/9/15-IPM 7/8/15-IPM 8/6/15-IPM 11/16/17-IPM	<i>From Parents for a Safer Environment (PfSE):</i> "I attended the April 14, 2015 meeting when we waited for over 30 minutes for staff and community members on the [Weed sub] Committee to arrive to no avail. Staff had to regretfully cancel the meeting due to lack of a quorum. ...consider asking for a heads-up from committee members if they cannot attend a future IPM meeting." (6/9/15 and 7/8/15) "Would the county request Committee members to provide in writing, anticipation of absenteeism so that those who arrive at meetings are not waiting for an hour only for the meeting to be cancelled due to lack of a quorum." (8/6/15)	<ul style="list-style-type: none"> IPM Committee members alert the IPM Coordinator when they know they will be late or will be missing a meeting of either the full committee or a subcommittee. Unfortunately, unexpected circumstances do arise from time to time. The Weed subcommittee meeting on April 14, 2015 was the first meeting of the full IPM Committee or any of its subcommittees that had to be cancelled for lack of a quorum since the IPM Advisory Committee was formed in 2010.
Quorums have been disregarded in previous subcommittee meetings		
6/9/15-IPM 7/8/15-IPM	<i>From Parents for a Safer Environment (PfSE):</i> "According to Shirley Shelangoski who had attended all subcommittees between 2012-2014, quorums were <i>not</i> considered in subcommittees until the recent year. Before, subcommittee meetings were held regardless of a lack of quorum."	<ul style="list-style-type: none"> All subcommittees consider whether or not there is a quorum before proceeding with a meeting. Attendance is tracked in each set of minutes.
Absences on the IPM Committee		
8/6/15-IPM	<i>From Parents for a Safer</i>	<ul style="list-style-type: none"> Absences are tracked in the minutes of every meeting of the full IPM Committee

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8/26/15 Email 1/17/19-IPM	<i>Environment (PfSE):</i> “Will the county track absenteeism and provide the data annually so that those who missed more than two in a given year be considered for removal from membership as stated in the By-Laws?” Grounds Division rep is absent from meetings.(1/17/19)	and each of its subcommittees. Attendance at meetings is reported annually to the Board of Supervisors. <ul style="list-style-type: none"> • The Grounds Division itself does not have a seat on the IPM Committee. Facilities and Grounds is represented by Jerry Casey of Facilities.
Pesticide Use around the Hazardous Materials Office and Co. Admin Bldg in Martinez		
2/20/15-IPM 8/6/15-IPM 2/17/16-IPM 11/16/16-IPM 1/17/19-IPM	<i>From Parents for a Safer Environment (PfSE)</i> Issue of members of PfSE observing pesticide use around the Hazardous Materials Office at 4585 Pacheco Blvd. in Martinez without posting “Currently, pesticides are used outside the auspices of the County IPM program in many buildings, including the Hazardous Materials building and the County Administration building.” (2/17/16)	<ul style="list-style-type: none"> • The Hazardous Materials Program rents space from ERRG, a company that occupies the top floor of the building. They and not the County are responsible for maintaining the building and the property. • The County’s posting policy does not require private owners of buildings to post their pesticide use. • On 8/6/15, PfSE videoed a Clark Pest Control technician spraying around the building at 4585 Pacheco Blvd. Clark, the contractor for ERRG, was using a pesticide called indoxacarb for ants that had been invading the building, particularly the top floor. Indoxacarb is listed as a “reduced risk” pesticide by the USEPA and is used by Pestec, the County contractor, in baits for cockroaches and ants. Hazardous Materials staff who experienced ant problems were educated by the IPM Coordinator, all food debris was removed, and boric acid baits were used in the two Hazardous Materials offices with ants trailing through. • No pesticides are being used in or around the County Administration building at 651 Pine Street that are not applied by Pestec, the County contractor, as part of the County IPM program. We are not aware of any pesticides being used at other County buildings that are not applied by Pestec. If PfSE has specific evidence of this happening, we would gladly investigate.
IPM Contract Language and reviewing contracts		
11/6/13-IPM 12/5/13-TWIC 2/26/14-IPM 3/5/14-IPM 3/6/14-TWIC 8/26/15-Email 2/17/16-IPM 9/15/16-IPM 1/17/19-IPM	<i>From Parents for a Safer Environment (PfSE):</i> “the county still does not have IPM language in its contracts with pest control contractors” “Contractors conducting pest control should be evaluated annually by the IPM Advisory Committee and contracts bid upon and assessed for a strong IPM track record.” (2/17/16) “The Public Works Dept’s Special District currently has on its payroll, a contractor who did not have to	<ul style="list-style-type: none"> • 2009: the IPM Coordinator and County staff added IPM language to the contract for pest management in & around Co. buildings. The contractor emphasizes education, sanitation, and pest proofing as primary solutions. Insecticides, mainly in the form of baits, are used as a last resort. For the control of rats and mice in and around County buildings, the County only uses sanitation, education, and trapping. • Special Districts currently hires only 1 contractor for pest control. He is employed by means of a purchase order, which is not an appropriate vehicle for IPM contract language; however, <ul style="list-style-type: none"> ○ as a condition of his employment, he is required to abide by the Public Works “Landscape Design, Construction, and Maintenance Standards and Guidelines”¹ which contain language outlining the IPM approach. This also applies to any other contractor hired by Special Districts. ○ this has been explained to PfSE several times.

¹ <http://www.co.contra-costa.ca.us/index.aspx?nid=2147>

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	<p>bid with IPM experience as a criteria and uses only rodenticides, including 2nd generation [<i>sic</i>] in public parks.” (2/17/16)</p> <p>Concerns about the letter from Special Districts to its contractors explaining the IPM approach expected of them. (9/15/16)</p>	<ul style="list-style-type: none"> • Spring 2012: to reinforce the IPM standards, the Special Districts Manager sent a letter to each Special Districts' contractor detailing the IPM approach expected of them. This is an on-going practice and any new contractors will receive the same letter to emphasize the County's IPM principles. • On 11/28/12, Susan JunFish asked for Special Districts contracts and purchase orders; on 11/29/12 the IPM Coordinator sent her the contracts, purchase orders, and letters mentioned above that were sent out by Special Districts. • On 2/14/13, Susan JunFish asked again for copies of the letters and was sent them on 2/15/13. • The Grounds Division occasionally hires a contractor to apply pesticides that the Division does not have staff or equipment to apply itself. The IPM Coordinator considers that these contracts or purchase orders do not require IPM language because the contractor is hired for a specific pesticide application and not to perform IPM services or make any IPM decisions. In these cases the Grounds Division has already gone through the IPM decision making process and has decided the specific work ordered is appropriate. • Reviewing contracts has not been in the purview of the IPM Advisory Committee. • The 1 contractor hired by Special Districts for pest control (see also the 2nd bullet, above) uses mostly trapping for vertebrate pests. In FY 15-16, he used 0.02ounces of the rodenticide active ingredient diphacinone (a 1st generation anticoagulant). He does not use any 2nd generation anticoagulants. • Since the IPM Program began reporting data on pesticide use in Special Districts in FY 08-09, no 2nd generation anticoagulants have been used. • The concerns expressed by Susan JunFish on 9/15/16 about the clarity and detail of the letter to contractors are valid and the Decision-Making subcommittee will take up these concerns.
Unprofessional Behavior by County Staff		
<p>11/6/13-IPM 11/13/13-IO 12/5/13-TWIC 2/26/14-IPM 3/5/14-IPM 3/6/14-TWIC</p>	<p><i>From Parents for a Safer Environment (PfSE):</i> “serious pattern of hostile and unprofessional treatment to the community by County staff” “continued name-calling, shouting, and put-downs by county staff and Committee members at IPM meetings” “require staff to take training in order to learn how to work productively in public meetings”</p>	<ul style="list-style-type: none"> • Staff disagree with the assertions that staff have been hostile or unprofessional toward members of PfSE or that staff have engaged in name-calling, shouting, or put-downs in any committee meetings. However, without reference to specific incidents on specific dates, it is impossible for staff to respond in detail. • Members of the public have always had ample opportunity (within defined limits) to participate in all aspects of IPM Committee meetings. • Starting in 2014, IPM full committee and subcommittee meetings will strictly adhere to the Ground Rules adopted unanimously by the IPM Committee on May 5, 2010. The IPM Coordinator will distribute Committee Ground Rules with each agenda packet. This will make public participation more fair and prevent one or a few individuals from dominating public comment. This course of action should limit the potential opportunities for improper discourse.
Make Audio and/or Video Recordings of IPM Committee Meetings		
<p>3/6/14-TWIC 3/2/15-TWIC 2/17/16-IPM <u>1/17/19-IPM</u></p>	<p><i>From Parents for a Safer Environment (PfSE):</i> “record meetings with a camcorder”</p>	<ul style="list-style-type: none"> • Vince Guise, Agricultural Commissioner in 2013, suggested that meetings be audio recorded (no video). The issue may be taken up at a future IPM Committee meeting. • No other advisory bodies video or audio record their meetings. If the public wishes

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	"The Community requested to have IPM related meetings recorded to achieve accurate meeting minutes that reflect what actually happened at the meetings and to encourage professional behavior."	to record meetings, they may do so and should announce their intention at the beginning of the meeting. <ul style="list-style-type: none"> • It appears that PfSE is recording all IPM Committee meetings on a laptop, so they will be able to reference those recordings if need be. • At the January 18, 2018 IPM Committee meeting, Carlos Agurto, representative from Pestec, the County's structural IPM Contractor, volunteered to be secretary to the Committee. He will make audio recordings of the meetings and provide the IPM Coordinator with at transcript. With audio recordings, video is not necessary.
Intimidation of a member of Parents for a Safer Environment by the IPM Coordinator		
2/12/14-TWIC 3/5/14-IPM 3/6/14-TWIC 2/17/16-IPM	<i>From Parents for a Safer Environment (PfSE):</i> "we ask that in the future, [County] staff not contact the community and pressure them to retract their public comments"	On November 13, 2013, Margaret Lynwood submitted a written public comment to the Internal Operations Committee. In the comment, she stated that she had "been attending pesticide related meetings and [had] discovered a serious pattern of hostile and unprofessional treatment to the community by county staff." Since Ms. Lynwood did not provide specific details, and the IPM coordinator had no record of her attending and did not remember seeing her in the last 4 years at any IPM Committee or subcommittee meetings, but only at TWIC and IO meetings, she contacted Ms. Lynwood by phone to understand her concerns and ask her if she felt that County Supervisors or other staff in TWIC or IO meetings had exhibited unprofessional behavior. She said, "No," and was unable to cite a specific instance when she had witnessed such behavior. The IPM Coordinator did not ask her to retract her public comment.
Use of Pre-Emergent Herbicides		
11/6/13-IPM 12/5/13-TWIC	<i>From Parents for a Safer Environment (PfSE):</i> "The Community wants to be assured that the Public Works Dept does not use pesticides along the Flood Control District that has [sic] residual activity before a forecasted rainstorm."	This is an issue about pre-emergent herbicides and was discussed in a subcommittee meeting on 10/29/13 and again in the Advisory Committee meeting on 11/6/13. Both meetings were attended by both Susan JunFish and Shirley Shelangoski of PfSE. The following points were made: <ul style="list-style-type: none"> • Pre-emergent herbicides have residual activity by design because they are meant to prevent the germination of weeds over an extended period of time, sometimes a number of weeks. • Pre-emergent herbicides are used by Public Works as part of their herbicide rotation program to prevent the development of herbicide-resistant weeds. Herbicide rotation is one of a number of best practices strongly recommended by the University of California and many other researchers to prevent herbicide resistance². Creating herbicide-resistant weeds is considered an extremely serious problem by weed scientists throughout the world. • Pre-emergent herbicides are not applied on flood control channel banks; they are used on flood control access roads above the banks. • Pre-emergent herbicides need irrigation or rainfall shortly after their application, typically within a few days to several weeks, to carry them shallowly into the soil

² 2012. Norsworthy, Jason K., et al. Reducing the Risks of Herbicide Resistance: Best Management Practices and Recommendations. *Weed Science* 2012 Special Issue:31-62.

2000. Prather, Timothy S., J.M. DiTomaso, and J.S. Holt. Herbicide Resistance: Definition and Management Strategies. University of California, Division of Agriculture and Natural Resources Publication #8012. 14 pp.

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		<p>where they become active. Because there is no irrigation on flood control access roads, pre-emergent herbicides must be applied prior to a rain event.</p> <ul style="list-style-type: none"> • The Department follows all label requirements for the application of pre-emergent herbicides (and all other herbicides). Note that a pesticide label is <u>law</u> and must be strictly followed. • The use of pre-emergent herbicides can reduce the total amount of herbicide needed to control weeds in the County because it takes a smaller amount of pre-emergent herbicide to control weeds in an area than it would using a post-emergent herbicide.
Use of Garlon 3A® (triclopyr) herbicide on flood control channel slopes without considering its half-life		
<p>3/5/14-IPM 3/6/14-TWIC 8/26/15-Email</p>	<p><i>From Parents for a Safer Environment (PfSE):</i> "We want the Public works Department to consider the residual activity (or half-life) of pesticides prior to application. Particularly along the Flood Control District before a forecasted rain that can wash pesticides into the channels and contaminate the water that flows to the Bays"</p>	<ul style="list-style-type: none"> • Staff has reviewed EPA documents for triclopyr reregistration; information on triclopyr in the Nature Conservancy's <i>Weed Control Methods Handbook</i>; information on triclopyr in the Weed Science Society of America's <i>Herbicide Handbook</i>; and the CA Department of Pesticide Regulation's "Environmental Fate of Triclopyr" (January 1997); and has found that triclopyr: <ul style="list-style-type: none"> ○ Is practically non-toxic to birds, fish, and crustaceans ○ Is of very low toxicity to mammals and is rapidly absorbed and then rapidly excreted by the kidneys, primarily in unmetabolized form ○ Has an average half-life in soil of 30 days (considered short persistence) ○ Would have little toxicological hazard to fish and wildlife as currently used in forestry (CCC's use is similar, although the County uses less product per acre than studies cited) ○ Has a low K_{oc}, which indicates mobility in soil; however, studies show that triclopyr is only somewhat prone to lateral movement and is practically not prone to vertical movement. In addition, triclopyr is fairly immobile in the sub-surface flow. ○ Could be used without harm to nearby streams in forestry applications if buffer zones are used around streams and ephemeral drainage routes. • CCC Public Works Vegetation Management uses Garlon 3A as follows: <ul style="list-style-type: none"> ○ Garlon 3A is a broadleaf contact herbicide with no pre-emergent qualities. It does not kill grasses, so it is often used with Roundup (glyphosate), which does kill grasses. ○ Generally Garlon 3A is not used during the rainy season. ○ It is used on roadsides, flood control channel slopes, and flood control channel access roads. ○ On flood control channel slopes, Garlon 3A is sprayed down the slope no further than the toe of the slope. Flood control channels are trapezoidal in cross section, and the toe of the slope is where the slope meets the flat part of the channel. Depending on the site, the water in the channel is from 10-50 ft. from the toe. ○ If there is a chance of the herbicide getting into the water, Public Works uses Renovate 3, which has the same active ingredient (triclopyr), but is labeled for aquatic use.
Posting for pesticide use		

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11/6/13-IPM 12/5/13-TWIC 2/20/14-IPM 2/24/14-IPM 2/26/14-IPM 3/5/14-IPM 3/6/14-TWIC 4/2/14-IPM 12/4/14-TWIC 2/17/15-IPM 3/2/15-TWIC 8/26/15-Email 11/4/15-IPM 2/17/16-IPM 11/16/16-IPM 11/16/17-IPM 6/18/18-IPM 9/20/18-IPM 1/17/19-IPM	<p><i>From Parents for a Safer Environment (PfSE):</i></p> <p>"The county staff are still not posting when applying pesticide in parks, along hiking trails, major intersections of rights of ways, along flood control districts where many people, children and their pets frequent."</p> <p>"Posting online of pesticide applications"</p> <p>"Posting online of pesticide use reports from <i>each</i> program as they are generated on a monthly basis [for fulfilling reporting requirements with the state Department of Pesticide Regulation]"</p> <p>Provide a list of where pesticide applications were posted for each IPM program and how many signs were used in 2013. (4/2/14)</p> <p>"The County's Posting Policy states that posting is required where there is foot access by the public or where the area is used for recreation...PfSE has shown you photos of children walking along these access trails...These access roads look just like walking trails along often idyllic looking creeks that the community use on a daily basis." (12/4/14)</p> <p>Concerns about pesticide posting (2/17/15)</p> <p>"Posting is still not done in most treated areas where people have foot access and where they recreate per the CC County's Posting Policy." (3/2/15)</p> <p>"I'd also like to see that posting is being done per policy." (11/16/16)</p>	<ul style="list-style-type: none"> • In 2009 the Departments developed a pesticide use posting policy. The policy does not require posting in "rights-of-way or other areas that the general public does not use for recreation or pedestrian purposes". • The CCC posting policy, including the provision mentioned above, is consistent with, and very similar to the posting policies of Santa Clara and Marin Counties and with the City of San Francisco. • The policy was reviewed and discussed by the IPM Committee when it was first developed, and in 2012 was revised to allow web posting and allow permanent signs in certain areas. • County Departments have verified that they abide by the posting policy. • The County's website for online posting of pesticide applications (for the areas required by the CCC posting policy) was up and running as of 3/10/15. • Pesticide use reports that are generated for the California Department of Pesticide Regulation are provided yearly to Parents for a Safer Environment. Monthly reports are available if the public wishes to view them. • In the 5/27/14 IPM Transparency subcommittee meeting, the IPM Coordinator presented a chart with a list of pesticide application postings and the number of posting signs used during the 2013 calendar year. • Note that the County Posting Policy states that posting is "Not required in locations that the public does not use for recreation or pedestrian purposes" Recreation is defined as "any activity where significant physical contact with the treated area is likely to occur". • On Pinole Creek, in the photo submitted by PfSE, the Public Works Department does not treat the paved path next to the school that the children are shown walking on. • Most of the County's Flood Control access roads are within locked gates with signs saying "Property of Contra Costa. No Trespassing". No one should be jogging or walking along these roads. • If PfSE can provide the County with information on specific access roads and specific times when people have been exposed to pesticide spraying, the County will investigate immediately. • Without information on specific locations, the County is unable to investigate this concern about not posting "in most treated areas where people have foot access and where they recreate...". • The IPM Committee has formed a Task Force to review the County's posting policy and compliance with that policy. (11/16/17) • The Posting Task Force met six times throughout the spring and summer of 2018 and revised the posting sign and policy with public input at every meeting. The suggestions for revisions have been sent to the Public Works Department for review.
	Adopting an IPM ordinance	
9/4/13-IPM 11/6/13-IPM 2/26/14-IPM 3/5/14-IPM	<p><i>From Parents for a Safer Environment (PfSE):</i></p> <p>Issue of adopting an IPM ordinance for the County</p>	<ul style="list-style-type: none"> • In 2009, Susan JunFish proposed the need for an IPM Ordinance to the BOS. The Board directed the Committee to investigate the issue. • In 2009, County Counsel wrote an opinion recommending the use of an administrative bulletin to supplement the County's IPM Policy.

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3/6/14-TWIC 3/2/15-TWIC 2/17/16-IPM 1/19/17 IPM <u>1/17/19-IPM</u>		<ul style="list-style-type: none"> • County Counsel continues to stand by their 2009 opinion. • At several meetings in 2010 and 2011, the IPM Committee studied the issue and heard presentations from PfSE and from other counties. In 2011 the Committee concluded unanimously that the County should adopt an IPM Administrative Bulletin to supplement the IPM Policy that the County adopted in 2002. In CCC an administrative bulletin serves to direct staff and carries consequences for non-compliance. • The IPM Committee found no advantage to adopting an IPM ordinance. • In April of 2013, the IPM Administrative Bulletin was adopted. • In the fall of 2013, the IPM Committee again reviewed the issue of adopting an IPM Ordinance. For the second time, the Committee saw no advantage to developing an ordinance and once again voted unanimously to recommend the continued use of the IPM Policy supplemented by the IPM Administrative Bulletin.
Reporting “Bad Actor” pesticides		
11/6/13-IPM 12/5/13-TWIC 2/12/14-TWIC 3/5/14-IPM 3/6/14-TWIC 2/17/15-IPM 3/2/15-TWIC 8/26/15-Email 9/2/15-IPM	<p><i>From Parents for a Safer Environment (PfSE):</i> Disagreement on how the County should report “Bad Actor”³ pesticides in the IPM Annual Report</p>	<ul style="list-style-type: none"> • Since FY 00-01, the County has been publishing pesticide use figures that include use figures for “Bad Actors”. • Note that <u>all</u> pesticides used by County operations are reported in the IPM Annual Report, regardless of the toxicity or hazards of the pesticide. At issue is the categorization of pesticides in the report, not whether all use is reported. • Susan JunFish, of Parents for a Safer Environment (PfSE), has been asking that additional pesticides be reported as “Bad Actors”. To resolve this issue, the IPM Committee heard presentations from Susan JunFish and held a special meeting of the Data Management subcommittee on March 25, 2013 devoted exclusively to this issue. Dr. Susan Kegley⁴ was invited to speak, as requested by Ms. JunFish. • After hearing Dr. Kegley’s presentation and discussing the issue with her and with representatives of PfSE, the subcommittee members concluded that the County should report as “Bad Actors” only those that are designated as such in the Pesticide Action Network database. • June 26, 2013: The IPM Committee voted unanimously to make changes to the 2012 IPM Annual to reflect the recommendation from the Data Management subcommittee, as noted above. The IPM Coordinator continues to report pesticides as “Bad Actors” only if they are designated as such in the PAN database.
Use of Paraquat and Other Bad Actors for Aquatic Weed Control by the Department of Agriculture		
2/17/15-IPM	<p><i>From Parents for a Safer Environment (PfSE):</i> “Use of paraquat for Aquatic Weed Control and other broad applied Bad Actor Pesticides by the</p>	<ul style="list-style-type: none"> • The Agriculture Department has not used paraquat in any aquatic weed applications and does not apply herbicides to the Delta for aquatic weeds. In the past, the Department has treated purple loosestrife in County waterways that feed into the Delta, but from this point forward they will not be treating any aquatic

³ “Bad Actor” is a term coined by 2 advocacy groups, Pesticide Action Network (PAN) and Californians for Pesticide Reform, to identify a “most toxic” set of pesticides. These pesticides are at least one of the following: known or probable carcinogens, reproductive or developmental toxicants, cholinesterase inhibitors, known groundwater contaminants, or pesticides with high acute toxicity. The pesticides designated as “Bad Actors” can be found in the PAN database on line: <http://www.pesticideinfo.org/>

⁴ Ph.D. Organic/Inorganic Chemistry; Principal and CEO, Pesticide Research Institute; former Senior Staff Scientist for Pesticide Action Network (PAN); instrumental in the development of the PAN database.

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	<p>Department of Agriculture.” (Particular mention of South American sponge plant in the Delta was made.)</p>	<p>weeds.</p> <ul style="list-style-type: none"> • The State Department of Boating and Waterways (DBW) has treated various areas in the Delta for invasive aquatic weeds over the years, and in September 2012, Governor Brown signed legislation authorizing DBW to add South American sponge plant to the list of weeds they treat. • State weed science experts judged that South American sponge plant posed a serious threat to the ecosystems in California waterways. This was based on research, the biology of the plant, and the rapid rate of its spread in California. • Judicious use of herbicide to eliminate small infestations before they take over and completely clog Delta waterways is an excellent use of herbicide and will prevent huge expenditures of labor and herbicide in the future. This kind of preventive use of a pesticide to reduce the necessity to use large amounts of pesticide when the pest has built to great numbers is a recognized and legitimate IPM tactic.
<p>Providing comments on the kestrel study, and rodenticides use concerns</p>		
<p>11/6/13-IPM 12/5/13-TWIC 2/20/14-IPM 2/24/14-IPM 3/5/14-IPM 3/6/14-TWIC 8/26/15-Email 7/20/16-IPM</p>	<p><i>From Parents for a Safer Environment (PfSE):</i></p> <p>“We have asked the Dept of Ag and the IPM Advisory Committee to provide comments on the Kestrel study and PfSE’s Draft LD50 document in the past two years.”</p> <p>In conjunction with this research paper, PfSE has brought up its concern about the rodenticides used by County operations.</p> <p>“Contractors [in Special Districts] use pesticides [rodenticides] before demonstrating alternatives first.” (8/26/15)</p> <p>“I would like to first point out that the Special District program of Public Works is still using rodenticides in the county parks...it would be helpful to see the decision making tree on the way rodenticides are chosen instead of traps or asphyxiation methods using safer gases like carbon dioxide.” (3/16/16)</p> <p>“The Public Works Special District program is using about 50 lbs. of rodenticides in parks.” (7/20/16)</p>	<ul style="list-style-type: none"> • On 9/18/12 Susan JunFish circulated to members of the IPM Committee the abstract from the kestrel study mentioned at left. On 2/4/13, the IPM Coordinator circulated the actual research paper to all the members of the IPM Committee. • On November 22, 2013, Vince Guise, Agricultural Commissioner, sent a formal response to Susan JunFish regarding the kestrel study. (TWIC and the IPM Committee Chair and IPM Coordinator were cc’ed on this communication.) • On January 7, 2014, Vince Guise re-sent the formal response to Susan JunFish and Shirley Shelangoski. On January 16, 2014, Shirley Shelangoski confirmed having received the document. • Susan JunFish asked the Committee to comment on the study, and the formal response was provided by the Agriculture Dept. • Regarding “PfSE’s Draft LD50 document”, neither the Committee nor County staff can comment on data calculated by Susan JunFish that have no references or clear calculation methods. This was conveyed to PfSE in the Department of Agriculture’s Kestrel response letter. • Note that as part of the Department of Agriculture’s ground squirrel program, the Department surveys ground squirrel treated areas for ground squirrel carcasses (or any other carcasses). Staff rarely find dead ground squirrels above ground, which is consistent with U.C. research in the state and the experience of other agencies. Staff has never found secondary kill, such as raptors or predatory mammals, in areas the Department treats. This does not mean, nor does the County claim, that no secondary kill ever occurs in the course of the County’s treatment program. • The IPM Committee did not discuss the research paper specifically; however, the Committee and County staff took the following steps regarding the rodenticide issue: <ul style="list-style-type: none"> ○ In 2012, the Agriculture Dept. conducted an in-house trial of live-trapping of ground squirrels as a possible alternative to rodenticides treatment. See below for more detail. ○ At their January 2013 meeting, the Committee heard a presentation from the Agriculture Dept on the trapping study and heard a presentation from the State Department of Fish and Wildlife on secondary poisoning of raptors

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		<p>and other predators and the state's efforts to restrict use of the more toxic 2nd generation anticoagulant rodenticides (CCC does not use 2nd generation anticoagulants because of their toxicity and their hazards to non-target animals that consume poisoned rodents).</p> <ul style="list-style-type: none"> ○ At their March 2013 meeting, the Committee heard a presentation from Dr. Jim Hale on wildlife issues in CCC that included discussion of the impacts of rodenticides. ○ At their May 2013 meeting, the Committee heard a presentation from Mt. Diablo Audubon on their campaign to curb the use of 2nd generation rodenticides. ○ The Agriculture and Public Works Departments jointly prepared a map of the County marking where rodenticides are used by the Agriculture Dept. This map was presented in separate meetings to Supervisors Gioia, Mitchoff, and Andersen, and to Susan JunFish & Shirley Shelangoski of PfSE. In these meetings the Agricultural Commissioner explained the Department's ground squirrel program and the live trapping study. ○ The Agriculture Dept. prepared a very detailed decision making document for ground squirrel management in the County to record their decision making process and explain the complexities involved in their decisions, including biology, safety, efficacy, cost and the goals of the program. This document was discussed extensively in a subcommittee meeting and again in a regular Committee meeting. PfSE members were present and participated in the discussion. ○ In 2013, the Agriculture Dept revised its ground squirrel baiting methodology to make it safer for staff, to make applications more precisely targeted, and to reduce the amount of bait used each season. The amount of bait used by the Department has been reduced by over 50% since 2011. Use has gone from 35,915 lbs in 2011 and 14,271 lbs in 2013. 14,271 lbs of bait is 1.4 lbs. of actual diphacinone. ○ In February and again in August of 2013, the IPM Coordinator investigated rodenticides use by contractors to Special Districts. She presented her findings to the Committee at the 9/4/13 meeting. ○ On 3/5/14, the IPM Committee heard an update from the California Department of Fish and Wildlife on the regulations concerning 2nd generation anticoagulant rodenticides and on secondary poisoning of raptors and mammalian predators by anticoagulant rodenticides. ○ The Special Districts' contractor has reduced his use of anticoagulant bait from 188 lbs in FY 12-13 to 88 lbs in FY 13-14 and to 53.5 lbs in FY 14-15. The amount of actual anticoagulant active ingredient in 53.5 lbs is 0.0027 lbs (0.04 oz). The contractor has increased trapping and is not using any of the more toxic and dangerous 2nd generation anticoagulants. ○ In FY 15-16 the Special Districts vertebrate pest manager used 27.5 lbs. of rodent bait, which is 0.0013 lbs. (0.02 oz.) of diphacinone. 9.5 lbs. of that rodent bait was used in a park (Livorna Park). This is 0.0076 oz of diphacinone. As noted above, the County is no longer using rodenticides in Livorna or any other park. In FY 16-17 the Special Districts vertebrate pest manager used 18 lbs. of rodent bait, which is 0.0009 lbs. (0.01 oz.). In FY 17-18, no rodenticides were used in Special Districts. The vertebrate pest manager used only trapping. ○ As of May 2016, Special Districts is no longer baiting with diphacinone for

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		<p>rats in Livorna Park. The shrubs that were being damaged by rat gnawing have recovered and are thriving. The contractor will continue to monitor at Livorna for rat damage.</p> <ul style="list-style-type: none"> ○ In the spring of 2016, the IPM Decision-Making subcommittee asked the IPM Coordinator to create a decision-making document for gopher management in the County. The document was finished in June 2016. In the Grounds Division, the gopher manager uses only carbon dioxide asphyxiation and traps to control gophers in County landscaping. The Special Districts' contractor uses trapping and diphacinone, a 1st generation anticoagulant rodenticide, for gophers in Livorna Park. He uses trapping in Livorna wherever it is safe to do so, i.e., where children are unlikely to find and play with the traps. He uses diphacinone in the Hidden Pond and Driftwood landscaping zones because the budgets in these two Special Districts will not cover trapping, which is more labor intensive. Both those landscaping zones are frontage property. The only other location where the Special Districts' contractor manages vertebrate pests is the Alamo School field, where he is using traps. <ul style="list-style-type: none"> ● In 2018, the IPM Committee had presentations on ground squirrel management and rodenticide hazards.
	<p>Trapping for ground squirrels</p>	
<p>12/5/13-TWIC 2/20/14-IPM 2/24/14-IPM 3/5/14-IPM 3/6/14-TWIC 10/9/14-TWIC 1/14/15-IPM 8/26/15-Email 2/17/16-IPM 7/20/16-IPM at several IPM Decision Making Meetings throughout 2018 1/17/19-IPM</p>	<p><i>From Parents for a Safer Environment (PfSE):</i> “[PfSE] asked TWIC to instruct the Department of Agriculture and Public Works Dept to use trapping methods [for ground squirrels]” “Santa Clara spends only \$25/ground squirrel trapping & removal” “Isn't it worth the effort to learn how the other counties are doing using only trapping for ground squirrel control?” (10/9/14) “One cannot compare efficiency of our [County] staff applying rodenticides and compare that to them trapping and stacking up overtime costs during the learning curve...A good-faith comparison would have been to utilize expert trappers vs our staff applying rodenticides, and then comparing costs.” (10/9/14) “[The IPM Coordinator] states that the county would incur a charge of \$16,720 per linear mile for ground squirrel control if we paid a contractor who charges</p>	<ul style="list-style-type: none"> ● In 2012, the Agriculture Department ran an extensive, in-house ground squirrel live trapping trial to determine the feasibility of using live traps to protect critical County infrastructure from ground squirrel burrowing. <ul style="list-style-type: none"> ○ The trapping was successful in that staff were easily able to capture 152 ground squirrels in the 1,200 linear foot trial area along a County road over the 5 day trial period. ○ The squirrels were euthanized on site by the California Department of Fish and Wildlife. ○ Unfortunately, squirrels from the surrounding area quickly moved into the vacant burrows. <u>This makes trapping ineffective in areas with surrounding pressure from ground squirrels.</u> ○ When the Department uses rodenticide bait, the squirrels do not move back into the vacant burrows for an extended period of time. The Department surmises that because baited squirrels die mostly in their burrows, the carcasses repel any newcomers. ○ The Department found that live trapping would be prohibitive. It would cost \$5,074/linear mile compared to \$220/linear mile using bait. The Department treats around 925 linear miles of roadway each year. ○ Note that along roadsides, the Department spreads bait in a 12 to 15 ft wide swath at a rate of 2 to 3 oat kernels per square foot only in areas where ground squirrels are active. This treatment method takes advantage of the natural foraging habit of the ground squirrel, an animal that is highly adapted to finding individual seed kernels on the ground. ○ The Department verified the expense by contacting 2 pest control contractors. Using their fees per hour or per squirrel trapped, the Department estimated that the cost to use a contractor to trap ground squirrels would be between \$12,524 and \$16,700 per linear mile. This does not compare favorably to the Department estimate of \$5,074/linear if work

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	<p>\$25/squirrel trapped. This is very speculative and we would like to see the county take bids from trappers and share the proposals with the Committee." (1/14/15)</p> <p>"Pilot Trial of rodenticides vs trapping done in 2012, biased & scientifically indefensible." (8/26/15)</p> <p>"Cost of trapping inflated." (8/26/15)</p> <p>"Trapping [for ground squirrels] costs about 50% more according to a Ventura County Ag Dept report, or approximately \$80,000 more for CCC." (7/20/16)</p>	<p>were done by Department staff.</p> <ul style="list-style-type: none"> ○ <u>Note that at the \$25/squirrel rate quoted by PfSE, it would cost the County \$16,720/linear mile if the ground squirrel catch rate were similar to the 152 squirrels/1,200 linear feet.</u> This is 3 times more than it cost for Agriculture Department personnel to trap over a linear mile, so using a contractor would not save money, even if this method were effective. ○ We are assuming that Susan JunFish's 7/20/16 comment on the cost of trapping ground squirrels comes from the IPM plan for Rodent Control for Flood Control Facility Protection approved by the Ventura Board of Supervisors in December 2006. PfSE provided a copy of this IPM plan to the IPM Committee a number of years ago. In a table in that IPM plan, the county summarizes the costs for various treatments for grounds squirrels. The table makes it clear that the costs are "estimates [for] one treatment event for a typical [flood control] facility." The Ventura IPM plan estimates the cost of trapping to be almost 100% more than the cost of broadcasting diphacinone bait (\$1700 for baiting vs. \$2900 for trapping). Note that the report does not define the "typical facility", so it is not possible to compare their estimates to the actual costs experienced in Contra Costa County. Note also that Ventura did not run a trial prior to adopting their IPM plan to determine the real costs of trapping or whether that strategy could be effective within the 3 "treatment events" the IPM plan recommends. It is not clear how Ms. JunFish calculated the \$80,000 extra needed to trap ground squirrels in Contra Costa County. ○ One of the pest control contractors who was contacted for an estimate said he had also observed the ineffectiveness of trapping in areas with surrounding ground squirrel pressure. ○ The Department also observed some other unexpected outcomes: <ul style="list-style-type: none"> ▪ Traps were checked daily, but staff found squirrels bloodied and wounded from fighting with each other or trying to chew their way out of the traps. ▪ Traps were vandalized by the public even though large signs warned people to leave the traps alone. This exposed the public to health risks from bites and scratches and from transmissible diseases carried by ground squirrels. ○ In certain small areas that have a limited number of ground squirrel colonies, live trapping may be a viable alternative. • Santa Clara County Regional Parks find live trapping effective for their limited use of the method. They trap squirrels around Regional Park buildings to prevent undermining of foundations. This is a very small area compared to the hundreds of miles of roads involved in CCC. Park rangers are close by to educate the public and to observe the traps continually. This reduces vandalism and allows park personnel to have squirrels dispatched soon after they are trapped, which prevents harm to the squirrels from fighting or gnawing the cage. • In March 2006, the Ventura County Board of Supervisors directed county staff to avoid the use of anticoagulant rodenticides within county-owned properties and facilities. To address these concerns, the county hired a consultant and formed an ad hoc committee. The County developed an IPM program and as a result of a subsequent study, the ad hoc committee <i>and</i> the Board recommended broadcast baiting with diphacinone as the primary control method for ground squirrels. The Board approved this program in December 2006.

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		<ul style="list-style-type: none"> The CCC Agriculture Department has also evaluated kill traps but has chosen not to use that method for many reasons, including the increased risk of taking non-target animals, the risk of injury to curious children, and the expense.
Burrowing rodent control		
1/20/17-IPM 11/16/17-IPM <u>1/17/19</u>	<i>From Parents for a Safer Environment (PfSE):</i> The IPM Committee should investigate the use of carbon monoxide for controlling burrowing rodents.	In 2017, the IPM Committee heard a presentation on the use of carbon monoxide and carbon dioxide for burrowing rodents. Dr. Roger Baldwin, from UC Cooperative Extension, gave the presentation on carbon monoxide (CO) and made the following points: <ul style="list-style-type: none"> His research was done in alfalfa fields, but it probably relates fairly well to rights-of-way. (In CCC, the greatest amount of rodenticide is used on rights-of-way to reduce damage from ground squirrels. A tiny amount of rodenticide is used in Special Districts for gophers, and no rodenticides are used in County grounds.) Using CO in rights-of-way will cost more than it did in his alfalfa fields. Efficacy still varies tremendously from site to site. It works best when soil is moist and not sandy. It takes 3-4 minutes to treat each burrow, and other openings must be covered with soil, so the gas does not escape. It would be difficult to try to dig up hard packed clay in the summer to cover burrow openings. Sand bags might work, but they are heavy and time-consuming to load, unload, and carry to and from the truck to each hole. The Grounds Division Vertebrate Pest Manager already uses carbon dioxide to kill gophers and moles in County landscaping, in addition to trapping. In the summer of 2017, the Grounds Division hosted a demonstration of the carbon monoxide machine, which they are considering purchasing. Using either CO or CO ₂ along County roads would likely be very costly due to the many miles of road and the many ground squirrel burrows along some sections of road. It would be most effective in the winter or spring when the soil is wet and prevents gasses from leaking out. The Agriculture Department, the entity that manages ground squirrels for the Public Works Department, is engaged in invasive weed control and other duties during that time of year and could not attend to ground squirrels as well. In August when the Department has traditionally handled ground squirrels, the soil is dry and hard. Gasses leak out in dry soil, and as mentioned above, covering holes would be challenging.
CCC is the only Bay Area county using rodenticides for ground squirrels		
12/5/13-TWIC 10/9/14--TWIC 7/20/16-IPM <u>1/17/19-IPM</u>	<i>From Parents for a Safer Environment (PfSE):</i> “[Contra Costa is] currently the only Bay Area county to continue to use the archaic and non-specific to target pest method of rodenticides to kill grounds squirrels” “It’s great that the Agriculture Department has decreased usage of rodenticides from 36,615 pounds [of treated grain] applied two years	Note that CCC uses diphacinone-treated bait to protect critical infrastructure in the County from damage caused by ground squirrel burrowing. Diphacinone is a 1 st generation anticoagulant that is less toxic and less persistent in animal tissues than 2 nd generation anticoagulants. The Agriculture Department endeavors to maintain a relatively ground squirrel-free 100 ft buffer along various County roads (mainly in East County), along levees and railroad embankments, and around earthen dams and bridge abutments. To maintain this buffer, the Department treats a 12 to 15 ft. swath. <ul style="list-style-type: none"> Alameda County engages in a ground squirrel treatment program using diphacinone bait that is very similar to CCC. They treat roadsides and levees and Zone 7 Water District sites and use a similar amount of diphacinone-treated bait.

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	<p>ago to 14,391 pounds [of treated grain] applied in the most recent fiscal year. However it is still 14,301 pound [sic] more of bait applied than all Marin, San Francisco, and Santa Clara counties combined that do not use any rodenticides at all in open space." (10/9/14)</p>	<ul style="list-style-type: none"> • The City and County of San Francisco does not have ground squirrel problems to contend with; however, as of February of 2016, their IPM program allows the use of bromadiolone bait (a 2nd generation anticoagulant rodenticide) for rats at the SF Airport and by commercial lessees on city properties that are not adjacent to natural areas. Second generation anticoagulants are more toxic and more persistent in the tissues of poisoned animals than 1st generation anticoagulants, such as the diphacinone that CCC Department of Agriculture uses. Bromadiolone persists in liver tissues for 248 days compared to 90 days for diphacinone which makes sub-lethally poisoned animals walking hazards for predators much longer. • Note that as of February 2016, San Francisco allows the use of diphacinone for baiting rats in areas with high public health concerns and where trapping is infeasible. CCC uses only trapping to control rats and mice in and around County buildings. But note also that CCC is far less urbanized than San Francisco, and therefore does not have the same kind of severe pest pressure from rats. • Marin and Napa County Public Works Departments reported that they have nowhere near the kind of ground squirrel populations that East Contra Costa County has, and consequently, they don't do anything about the few ground squirrels along their roads.
<p>The County should use volunteers and free labor</p>		
<p>12/5/13-TWIC 3/6/14-TWIC 2/17/16-IPM 11/16/17-IPM <u>1/17/19-IPM</u></p>	<p><i>From Parents for a Safer Environment (PfSE):</i> The County should use free labor programs</p>	<ul style="list-style-type: none"> • This could be particularly helpful around County buildings. The Grounds Manager would welcome Parents for a Safer Environment (PfSE) volunteers to pull weeds at particular sites, but PfSE would first need to negotiate with the County to determine if PfSE volunteers would be permitted work on County landscaping. If the work were approved, PfSE would need to organize and supervise the volunteers. • Note that County unions have protested the use of inmate labor for jobs that could be filled by union members. The union recently won a grievance against the Sheriff's Department regarding the use of inmate labor for grounds maintenance work. The union has filed a grievance against the fire department regarding the use of inmate labor to clear brush. The Grounds Manager does not anticipate that PfSE volunteers pulling weeds would precipitate these kinds of union actions. • In the County's other IPM programs, using volunteers is more difficult. <ul style="list-style-type: none"> ○ "Free" labor involves considerable County resources including outreach to solicit volunteers, planning and organizing work sessions, staff time for training volunteers, transportation of volunteers, equipment for volunteers and staff time for supervision. ○ Almost all of the Agriculture Department's noxious weed program involves activity on private land or on lands that are not owned or managed by the County. Use of volunteer help in these areas would involve liability for those land owners or managers. ○ Much of the Public Works Department's creek and roadside vegetation management involves work in dangerous areas such as roadsides or steep and rocky slopes and requires the use of hazardous equipment such as chain saws and brush cutters. County liability for volunteers performing this kind of work would be extremely high. ○ The County's structural IPM program is not suited to the use of volunteer labor. • Note that the County does use volunteers, most notably in creek restoration and

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		clean up, for creek water quality monitoring and for outreach to the public about creek water quality and the value of healthy creeks and watersheds.
Grazing has no significant impact on water quality		
12/4/14-TWIC 8/26/15-Email	<i>From Parents for a Safer Environment (PfSE):</i> “...[I]n each of the four case studies, grazing had NO significant impact on water quality. It is my hope that this research can provide decision makers with confidence that managed grazing is an effective, economical and safe vegetation management tool along watercourses.” “Small PfSE Pilot Trial in 2009 showed no contaminants downstream of grazing.” (8/26/15)	<ul style="list-style-type: none"> • The County is aware that grazing does not have a significant impact on water quality. Economics and not water quality is the limiting factor in the vegetation management situations in the County. Public Works continues to expand its grazing program where it is most appropriate and/or cost-effective, and grazing has become a permanent tool in the County’s IPM Toolbox.
The County should expand goat grazing and competitive planting		
12/5/13-TWIC 3/5/14-TWIC 2/17/15-IPM 8/26/15-Email 7/20/16-IPM 5/11/17-IPM 11/16/17- IPM 1/17/19-IPM	<i>From Parents for a Safer Environment (PfSE):</i> “The County should expand the competitive planting and goat grazing programs” “[One decision-making document] asserts that goat grazing costs much more than herbicide spraying; however it appears the cost of grazing during the in-season are [sic] being compared with herbicide usage. Other case studies we are evaluating show that grazing is cost effective and even cheaper than herbicide usage.” (2/17/15) Grazing costs are inflated and cost of herbicide use is deflated. (8/2615) “With evidence that grazing causes no more damage and can be less expensive in the short term and also less risk to public health and the environment, we need to expedite moving away from herbicide usage and utilize more grazing.” (7/20/16)	<ul style="list-style-type: none"> • The County Flood Control District is partnering with Restoration Trust, an Oakland-based non-profit, in a native planting experiment along Clayton Valley Drain (near Hwy 4 adjacent to Walnut Creek). The study involves planting 2 species of native sedge and 1 species of native grass. These are perennial species that stay green year round and are resistant to fire. The plants are compatible with flood control objectives because they do not have woody stems, and during flood events, they would lie down on the slope, thus reducing flow impedance. They are not sensitive to broadleaf herbicides that will be needed to control weeds at least until the plants have spread enough to outcompete weeds. County volunteers installed the first plantings on December 7, 2013 • Note that it is conceivable that herbicides may always have to be used on these plantings to prevent the area from being overrun with weeds because the surrounding weed pressure is very high. • Restoration Trust will be monitoring the test plots through 2018 to assess the survival of the native plants and their degree of successful competition with non-native annual species. The County will gather information over the same time period to determine whether, how, and where to expand this kind of planting. The County cannot expand this project without data on its costs and viability. • Over the last 3 years, the Public Works Department has expanded its use of goat grazing considerably. In FY 12-13 they grazed 74 acres, in FY 13-14 they grazed 183 acres, and in FY 14-15 they grazed 367 acres. It is now a regular management tool for the Department. Every site the County manages differs in the ease with which goats can be used and their suitability for managing vegetation. The Department uses goats where they are appropriate and cost effective, and continues to gather data on costs and long-term effectiveness at individual sites. Cost is affected by many factors: <ul style="list-style-type: none"> ○ The size of the site—loading and unloading the animals is a fixed cost, so small sites cost more per acre than large sites ○ The ease of access to the site—the harder it is to get the goats into an area,

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		<p>the more expensive it is</p> <ul style="list-style-type: none"> o The availability of water—if water must be trucked in, the cost is greater o The security of the site—the more fencing that is required and the more the fences must be taken down and erected within the site both increase the cost o The time of year—because of the law of supply and demand, cost is greater during the peak grazing season o The presence of endangered species—sites with endangered species and other restrictions from the State Dept. of Fish and Wildlife are good candidates for grazing regardless of the cost <ul style="list-style-type: none"> • Although the cost of off-season grazing is less expensive than during the peak grazing season, Public Works cannot effectively manage all the weeds that grow in the Flood Control District only with off-season grazing. • In 2016 Public Works continued to use grazing wherever possible and to allow the grazer to stage goats on various channels and in detention basins in exchange for free vegetation management from the goats. • In FY 15-16 the County used goats to graze a total of 315 acres which included 158 free acres. Without the staging arrangement with the grazer, the County would have paid around \$950/acre for grazing. With the free acres, the cost came down to \$470/acre. This is twice what it costs to treat creek banks with herbicide (\$222/acre).
<p>Considering least-toxic alternatives before choosing pesticides</p>		
<p>12/5/13-TWIC 2/26/14-IPM 2/17/15-IPM 8/6/15-IPM 8/26/15-Email 11/4/15-IPM 2/17/16-IPM 11/16/17-IPM <u>1/17/19-IPM</u></p>	<p><i>From Parents for a Safer Environment (PfSE):</i></p> <p>“Staff has still not demonstrated that for <i>each</i> pest control problem, least toxic alternatives were evaluated prior to choosing pesticides.”</p> <p>Estimates for costs of herbicide applications need to include cost of permits, tracking requirements, storage of chemicals, licensing, training, etc.</p> <p>“The IPM Advisory Committee has not yet reviewed several key data in the [decision-making documents] that justify using broadcast herbicide spraying along Right of Ways and rodenticide usage in open space.” (2/17/15)</p> <p>“Also, has the county investigated least toxic methods in accordance with the IPM Policy?” (8/6/15)</p>	<ul style="list-style-type: none"> • In 2012, the IPM Committee developed a form for recording IPM decisions made by the Departments. In 2013, each IPM program in the County produced at least 1 decision-making document for a specific pest or pest management situation (the Agriculture Department produced 2 documents that year). • These documents show which least-toxic alternatives are considered and tested, which are being regularly employed, which are not, and why. • In 2013, 2014, 2015, 2016 & 2017, each new decision-making document was extensively reviewed by the Decision-Making subcommittee with PfSE members in attendance. • Recording the thought processes and decision-making path for each pest or pest management situation takes considerable time (approximately 40 hours of work per document). • In 2014, the Decision-Making subcommittee reviewed and, after numerous revisions, accepted 4 more decision-making documents. These discussions were conducted in public with members of PfSE in attendance. • In 2015, the Weed subcommittee reviewed and revised 1 more decision-making document which covered how the County decides to use grazing as a management tool. • In 2014, the Cost Accounting subcommittee chose to research the costs associated with altering landscapes around County buildings to require less maintenance, less water, and less herbicide. The subcommittee concluded that this is a very worthy goal, but more complicated to achieve than expected. Sites must be considered individually because one plan will not fit all, and in the midst of severe drought, it is not the time to begin replanting. The subcommittee also explored the idea of replacing lawns with artificial turf, but decided that it is not the answer except in very specific, limited situations. Artificial turf has high up-

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		<p>front costs, still requires maintenance, can become infested with weeds growing in soil that accumulates on top of the mat, and has environmental consequences at the end of its life,</p> <ul style="list-style-type: none"> • Herbicide treatment costs reported in IPM Annual Reports from 2013 onward include all associated costs mentioned by PfSE. When costs are compared in future documents, every effort will be made to include all related costs for both pesticides and alternatives.
Excessive pesticide use in CCC		
<p>12/5/13-TWIC 2/26/14-IPM 12/4/14-TWIC 3/10/15-IPM 2/17/16-IPM 3/16/16-IPM 7/20/16-IPM 11/16/17-IPM 1/17/19-IPM</p>	<p><i>From Parents for a Safer Environment (PfSE):</i> Contra Costa County uses more pesticide than any other Bay Area County (or, than several Bay Area Counties combined)</p> <p>“lack of progress is evident in that the county has not significantly altered their use of pesticide since 2009”</p> <p>“The single most underlying problem I see in the IPM Program is that there is little to no leadership in guiding the County to reduce pesticides. (12/4/14)</p> <p>“Compare the quantity and the type of pesticides being used by neighboring counties of Marin, S.F., and Santa Clara Counties [sic] for the same pest problems.” (2/17/16)</p> <p>“...I am concerned about the exponential increase of herbicides being applied by the Grounds program in the last fiscal year [FY 14-15].” (3/16/16)</p> <p>“The Right of Ways program of Public Works alone used over 10,200 lbs of pesticides last fiscal year, using 20 herbicides...These [sic] program needs review of why so much pesticides are required and at such high rates.” (3/16/16)</p> <p>“...CCC Ag Dept’s usage of the active ingredient diphacinone rodenticides in the last 5 years increased by 15% in open space, with a 90% increase between the last 2 years.” (7/20/16)</p> <p>“The Public Works Department’s</p>	<ul style="list-style-type: none"> • The assertion that CCC uses more pesticide than any other Bay Area County, or other counties combined, is hard to evaluate since staff have not seen current pesticide use figures for County operations in other Bay Area Counties. • This could be researched, but would take time. It is difficult to compare counties, all of which vary greatly in their size, their budgets, their staff, their pests, their weather, and the kinds of responsibilities they choose to undertake. Staff feel that comparing pesticide use in various counties is not particularly relevant to how well Contra Costa County operations are implementing IPM. • In 2012 and 2013, the IPM Data Management subcommittee undertook to find additional metrics to evaluate the County’s IPM programs. This proved to be a difficult task, and the committee’s research did not discover any unique or innovative measures for evaluating IPM programs in other Bay Area counties, or across the U.S. • The subcommittee agreed that pesticide use data do not reveal whether the County is implementing IPM, and so in 2012, the subcommittee developed the IPM Priority Assessment Tool. This is a compilation of IPM best management practices (BMPs). The subcommittee asked the Departments to fill out the form in 2012 and 2013 and report the percentage of implementation of each of the BMPs. • It is important to understand that pesticide use can increase and decrease from year to year depending on the pest population, the weather, the invasion of new and perhaps difficult to control pests, the use of new products that contain small percentages of active ingredient, the use of chemicals that are less hazardous but not as effective, the addition or subtraction of new pest management projects to a department’s workload, and cuts or increases to budgets or staff that change priorities or workload. • From FY 00-01 through FY 46-47-17-18, the County has reduced its pesticide use by 79% --from 18,931 lbs of active ingredient in FY 00-01 to 3914 lbs of active ingredient in FY 46-17-18. • Since FY 00-01, each Department has been evaluating its pesticide use and researching options for eliminating or reducing pesticide use. By 2015 County operations had eliminated the use of 24 of the 31 “Bad Actor” pesticides that they had been using and had reduced the lbs of “Bad Actor” active ingredients by 84%. • By 2018 County operations had reduced the lbs of “Bad Actor” active ingredients by 90.5%. • The County’s pesticide use trend follows a trend typical of other pollution reduction programs. Early reductions are dramatic during the period when changes that are easy to make are accomplished. Once this “low-hanging fruit” has been plucked, it takes more time and effort to investigate and analyze where

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	<p>Grounds Program in the last 5 years increased their herbicide usage by 73%. CCC Grounds program used 700% more herbicides than the counties of Santa Clara and Marin combined last year [presumably 2015] (600 lbs vs 100 lbs) even when Santa Clara county has at least 50% more grounds requiring management." (7/20/16)</p> <p>The Public Works Department's Facilities program manages pests in buildings and has been doing great until last year when insecticide usage inside building(s) [sic] went up past 8 lbs." (7/20/16)</p>	<p>additional changes can be made. The County is entering this period, and if further reductions in pesticide use are to be made, it will require time for focused study and additional funding for implementation.</p> <ul style="list-style-type: none"> • Note that County operations use about 2% of all the pesticide (active ingredients) that is required to be reported in the County. The total reported to the state does not include homeowner use, which researchers suspect is a considerable amount. • In FY 14-15, the Grounds Division used only 1/3 of the pesticide it used in FY 00-01. The amount used in FY 14-15 was 154 lbs. of active ingredient <i>less</i> than in FY 13-14. • In FY 14-15 the Public Works Roadside and Flood Control Channel Maintenance Division (the "Right of Ways program" that PfSE refers to) used 4,780 lbs. of pesticide active ingredients. This is a little more than ¼ of the pesticide they used in FY 00-01. • In FY 14-15 the Agriculture Department used 346 lbs. <i>less</i> of the anticoagulant diphacinone than the previous year. In FY 15-16, the Department reduced its use even further. In FY 14-15 the Department used 154.7 lbs of diphacinone and in FY 15-16 it used 76 lbs. Over the last 5 years, this is a dramatic decrease of 86% and a decrease of 95% from the 1420.7 lbs. used by the Department in FY 00-01. • The Grounds Division use of herbicide has indeed increased over the last 8 years. The Recession and its attendant budget cuts, along with decisions by the former Grounds manager to stop almost all herbicide use, contributed to several years of minimal use. Weeds and their seeds were not managed effectively for several years resulting in large weed and weed seed loads at many County properties. Over the last 6 years, the current Grounds Manager and his crew have been working very hard to reduce the weed pressure and improve the aesthetics of County landscaping. This has included the application of prodigious amounts of woodchip mulch and reducing irrigation to prevent weeds, but it has also meant the use of more herbicide. Inadequate budgets and staffing problems have made the recovery of County properties slow. Currently (2016) the Division is in much better shape and has enough money and almost enough staff to properly maintain County landscaping. As the crew reduces the weed load, they can more easily maintain relatively weed-free landscapes with physical methods such as handpulling and mulching. • Pestec, the County's structural pest management contractor that manages pests in and around buildings, has been battling very large ant populations the last 2-3 (2015-2018) years, and this has increased the amount of insecticide used. Insecticides for ants are all in the form of baits and pose very little exposure for County staff and wildlife.
	<p>CCC should do more IPM training and outreach to County staff and the public</p>	
<p>12/5/13-TWIC 2/17/16-IPM 3/16/16-IPM 11/16/16-IPM 3/16/17-IPM 1/17/19-IPM</p>	<p><i>From Parents for a Safer Environment (PfSE):</i> "the County IPM Coordinator and the IPM Advisory Committee [should] provide annual IPM training and outreach programs to both county staff and the public"</p>	<ul style="list-style-type: none"> • The IPM Committee is an advisory body to the Board of Supervisors and does not have a budget, nor does it have the staff or the mandate to provide outreach and training. • There is no need to duplicate San Francisco and Santa Clara's regional IPM conferences, and it would be impossible for the IPM Coordinator to do so without staff and budget. • In 2012, the IPM Coordinator partnered with cities in CCC to provide a half-day

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	<p>The County should “provide training and conferences such as those conducted by Santa Clara and San Francisco counties which train hundreds of interested participants.”</p> <p>“I would like to see Contra Costa County, with more resources than [Parents for a Safer Environment], facilitate some training for municipalities in our county for some of the toughest problems that trigger pesticide usage...” (11/16/16)</p>	<p>landscape IPM training to City and County staff and will probably do so again in the future.</p> <ul style="list-style-type: none"> • The IPM Coordinator provides extensive education in person and over the phone to County staff and Contra Costa citizens on bed bug awareness and an IPM approach to managing bed bugs. The IPM Coordinator produces educational materials on bed bugs for professionals and lay people. Materials are housed on the Health Services bed bug website (cchealth.org/bedbugs). • The Departments provide annual training to County staff that includes IPM. • County staff attend numerous trainings and conferences that include IPM training in order to stay current on pest management research and to maintain their various licenses. • The Department of Agriculture has a biologist on-call from 8 AM to 5 PM each weekday to answer questions from the public about pests and pest management. Biologists base their responses on IPM principles and on materials and resources from the U.C. Statewide IPM Program. • Every day in the course of their work, County staff from Public Works, Health Services and the Department of Agriculture engage citizens in dialog about the pest management work the County does and the IPM principles the County employs. • The Department of Agriculture provides many training sessions each year on pesticide safety (including IPM issues) to growers, farm workers, agencies, and the pest control industry. • The Department of Agriculture is a member of the <i>Egeria densa</i> Integrated Pest Management Committee and developed the Contra Costa Delta/Discovery Bay Region Brazilian Waterweed (<i>Egeria densa</i>) Integrated Pest Management Plan. • The County Clean Water Program sponsors an annual Bay Friendly Landscaping training for County staff and professional landscapers throughout the county. This training includes information about IPM and about reducing inputs into and outputs from landscaping activities to prevent pollution in creeks and the Bay. • The County Clean Water Program provides support for watershed coordinators and friends of creeks groups that coordinate volunteers to conduct general outreach to the community about water quality in creeks and the value and importance of wildlife habitat, watersheds, and creek restoration. • The County Clean Water Program provides support to the Bringing Back the Natives Garden Tour which educates the public about the many benefits of gardening with California native plants. • The County Clean Water Program supports the Our Water, Our World Program in Contra Costa County (a program originally developed by CC Central Sanitary District). This program provides in-store IPM education directly to consumers who are purchasing pesticides. IPM training is also provided for nursery and hardware store employees. • In 2014 the County Clean Water Program launched 3 other IPM and pesticide public education programs. • The Contra Costa Master Gardener Program trains volunteers with a curriculum that includes IPM. Master Gardener volunteers are available Monday through Thursday from 9 to Noon to answer gardening and pest management questions from the public. Advice is based on materials and resources from the U.C. Statewide IPM Program. Master Gardeners also provide presentations on

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		<p>gardening and IPM to a broad cross section of Contra Costa citizens.</p> <ul style="list-style-type: none"> • The IPM Coordinator accepts many speaking engagements throughout the County and the region to provide training on IPM and especially on bed bug issues. • The IPM Coordinator and other County staff have been working closely with cities to provide guidance on the bed bug infestations they are experiencing. • The IPM Coordinator is working with Code Enforcement in the City of Richmond to develop bed bug training for Code Enforcement officers throughout the state. • Every month the IPM Coordinator spends a significant number of hours talking with citizens about least-hazardous bed bug control. • The Agricultural Department represents the California Agricultural Commissioner's and Sealer's Association as the sitting member of the California Invasive Species Advisory Task Force. • In October 2013, County staff attended a Parents for a Safer Environment's IPM workshop and found it informative. Parents for a Safer Environment can provide a useful community service by hosting more such workshops. • In April 2014, the IPM Coordinator provided an in-person IPM tutorial for the Grounds Division's new spray technician. • In May 2014, the IPM Coordinator arranged an IPM workshop given by Pestec, the County's Structural IPM Contractor, for the County's Head Start Home Base educators. Pestec presented information on how to prevent pests in the home and simple, non-toxic strategies for low income families to use to combat pest invasions. Home Base educators provide in-home education to Head Start families. • In May 2014, the Contra Costa Environmental Health Division sponsored a workshop on IPM for bed bugs for County Environmental Health Inspectors and code enforcement officers in Contra Costa municipalities. • In July 2014, the County hosted a presentation by the U.C. Horticultural Advisor on how landscapes should be managed during drought and how to plan landscapes for what is likely to be continual droughts. County staff, both administrators and maintenance personnel, along with park personnel from the city of Danville attended. • In July 2014, the IPM Coordinator provided a bed bug awareness training for the residents of Meadow Wood at Alamo Creek, a senior living facility in Danville, along with subsequent consultation with individual residents and staff. • In September 2014, the IPM Coordinator provided the Greater Richmond Interfaith Program with assistance for a bed bug infestation at their Family Housing Program. • In February 2015, the IPM Coordinator met with staff at the Bay Area Rescue Mission in Richmond to discuss bed bug prevention. • In June 2015, the IPM Coordinator completed an IPM Guidance manual for municipalities in Contra Costa County with help from Beth Baldwin of the County Clean Water Program and Stephen Pree of the City of El Cerrito. The three had worked for 2 years to develop IPM guidance for cities on implementing IPM and to develop standard operating procedures for various pests. The three presented an IPM workshop for municipal staff that included information on how to use the manual and resources available to them within the County.

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		<ul style="list-style-type: none"> • In November 2015, the IPM Coordinator and Luis Agurto from Pestec provided a bed bug training for County Adult Protective Services staff who have been encountering bed bug problems in their clients homes more frequently. • In April 2016, the IPM Coordinator helped arrange a County-sponsored Bay Friendly Landscaping refresher training at the Pittsburg Civic Center open to all Bay Friendly certified landscaping professionals in the County. • In April 2016, the IPM Coordinator and Luis Agurto from Pestec provided a bed bug awareness training for staff from the Behavioral Health Division. • In May 2016, the IPM Coordinator arranged a talk on mosquitoes as vectors of disease by Dr. Steve Schutz of CC Mosquito and Vector Control for the IPM Advisory Committee. • In May 2016, the IPM Coordinator gave a class in home and garden pests at the Gardens at Heather Farms for the general public. • In May 2016, the IPM Coordinator helped arrange a talk at the Richmond Civic Center on vertebrate pest management for County and municipal staff and professional landscapers. • In May 2016, the IPM Coordinator provided a bed bug prevention training to the County's Discovery House staff. • In June 2016, the IPM Coordinator and Carlos Agurto from Pestec provided a bed bug prevention refresher training to the Concord Homeless Shelter and Calli House youth shelter staff. • In July 2016, the IPM Coordinator provided bed bug prevention trainings for both Adult Mental Health and Older Adult Mental Health staff. • In August 2016, the IPM Coordinator provided bed bug prevention trainings for the Behavioral Health safety coordinators and for a group of board and care owners and managers. • In October 2016, the IPM Coordinator provided a bed bug prevention talk for homeless care providers, worked with the City of Richmond to create a plan for managing bed bugs in their city, and talked to staff at 1650 Cavallo about preventing ant infestations. • In January 2017, the IPM Coordinator gave a presentation on bed bugs for a group home in Antioch. • In February 2017, the IPM Coordinator provided the IPM presentation for the Bay Friendly Landscaping training in Concord. • In February 2017, the IPM Coordinator gave a bed bug talk at a home for HIV patients in El Cerrito. • During the spring of 2017, the IPM Coordinator consulted on a project of the Alameda County Healthy Homes program to create a three-part online training series on IPM for landlords and property owners. • In May of 2017, the IPM Coordinator participated in a bed bug investigation of a motel in Richmond and helped to educate the owner about bed bug prevention. • In August, the IPM Coordinator gave a bed bug awareness presentation to WIC staff. • During the summer of 2017, the IPM Outreach subcommittee of the IPM Advisory Committee developed a short presentation on pest management in homes for County in-home visitors. The subcommittee has three presentations scheduled

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		<p>through the end of 2017, and will be contacting additional groups for presentations in the new year. As of November 2018, the subcommittee had given 14 presentations which trained 233 in-home visitors about the risks of pests and pesticides in the home and explained prevention and control measures for common pests.</p> <ul style="list-style-type: none"> In August of 2017, the IPM Coordinator and Carlos Agurto from Pestec, the County's structural pest management contractor, provided a bed bug prevention training for Calli House Youth Shelter staff. In September, the IPM Coordinator provided a bed bug prevention presentation for WIC staff. In January and March 2018, they Pestec and the IPM Coordinator will provide additional training for all staff from all of the County shelters. They had provided this training in the past, but will now provide it at least annually to make sure new staff understand the threat, how to take precautions, and how to prevent infestations. During 2018, the IPM Coordinator and members of the IPM Advisory Committee gave outreach presentations to 235 County staff and volunteers to help them assist their clients with pest management issues in the home.
Violations of the Brown Act		
12/5/13-TWIC 3/2/15-TWIC 8/6/15-IPM 2/17/16-IPM	<p><i>From Parents for a Safer Environment (PfSE):</i></p> <p>"continued violations of the Brown Act including repeated disposal of original meeting minutes, repeated failure to provide public records at all or much later than 10 working day, and meeting minutes that do not accurately reflect comments made or not made by participants"</p> <p>"our county's IPM policy and the Public Records Act have been violated at least on a quarterly basis by staff since 2009." (3/2/15)</p> <p>"We are still waiting to learn where Fusilade II Turf and Ornamental herbicide had been applied by the Grounds Program in the past years" (8/6/15)</p>	<ul style="list-style-type: none"> Staff always respond within 10 days to public records requests. In almost all cases staff respond within 1 to 3 days. The only reason for delay has been to find and collect documents that have been requested. The County takes public records requests seriously and responds promptly to each one. Hand written meeting minutes are recycled after official minutes have been typed up. Official minutes, once approved by the IPM Committee, are posted on the IPM website. The IPM Committee approves the minutes for each meeting. The public is provided time to comment on the minutes, and as the IPM Committee sees fit, the minutes are corrected. Staff are ready to respond to any specific instances or claims of Brown Act violations. Staff maintain written logs of all public records requests. On July 8, 2015 Susan JunFish formally requested information about Fusilade use by the Grounds Division. On July 16, 2015 the IPM Coordinator provided her with a chart, created for her, showing how much and where Fusilade was used (0 used in FY 12-13 and FY 14-15 and 0.1 pound used once in a parking lot in FY 13-14).
Financial incentives to serve on the IPM Committee/Conflict of interest on the IPM Committee		
12/5/13-TWIC 1/14/15 IPM 3/2/15-TWIC 2/17/16-IPM	<p><i>From Parents for a Safer Environment (PfSE):</i></p> <p>The County should "discourage financial incentives of [IPM Committee] applicants by providing a minimum of a 5 year moratorium for those who serve to be eligible for receiving a county contract or any funding"</p> <p>"In 2009, Michael Baefsky, a community representative of the</p>	<ul style="list-style-type: none"> Staff disagree that there are any kinds of financial incentives to serve on the IPM Advisory Committee, but will defer to the Board of Supervisors on whether to impose such a moratorium. If the public has evidence of financial incentives for serving on the IPM Committee, we request that they bring that evidence forward. Michael Baefsky was not a member of the IPM Advisory Committee when he was asked to contract with General Services to advise the County on non-chemical methods to manage weeds on the Camino Tassajara medians in 2009. His contract ended in 2009. That year he attended meetings of the IPM Task Force, an informal body with no official appointees. The IPM Advisory Committee was

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	IPM Advisory Committee received a contract with the former General Services Department according to a document from Terry Mann, former Deputy Director of the General Services Dept. After receiving that contract, Mr. Baefsky's behavior on the Committee changed significantly."	not created until 2010, and he was appointed by the Board to an At-Large seat in 2010. He has held no contracts with the County since 2009. <ul style="list-style-type: none"> • The IPM Committee bylaws state the following in sections III.B.2&3: <ul style="list-style-type: none"> • "Contractors who provide pest management services to the County may not serve on the Committee. The exception is A.1.d., above, the Current Structural Pest Management Contractor with General Services Department. • "If a member's work status or residence changes, he/she must notify the Committee in writing, within thirty (30) days of their change in status. The Chair will review the change of status and determine if the member is still eligible for membership according to these by-laws. If they are found to be ineligible, the member will be asked to resign his/her position."
Monetary compensation or gifts from pesticide salespeople		
12/5/13-TWIC 3/2/15-TWIC	<i>From Parents for a Safer Environment (PfSE):</i> "We are requesting that TWIC require that all staff involved in ordering pesticides from salespersons fill out a form disclosing any monetary compensation or any other forms of gifts from pesticide salespersons"	<ul style="list-style-type: none"> • County staff do not receive (and have not been offered) gifts or compensation in any form from pesticide salespeople or any other salespeople. Accepting gifts or compensation would be against County policy⁵ and would subject staff and their departments to disciplinary action • If the public has evidence of County staff taking bribes, we urge the public to provide that evidence for investigation.
IPM Committee did not accept all of Parents for a Safer Environment's priorities as their own		
2/12/14-TWIC 11/16/17-IPM 1/17/18-Email 1/18/18-IPM	<i>From Parents for a Safer Environment (PfSE):</i> The IPM Committee is planning to include only 70% of PfSE's priorities as the Committee's priorities for 2014 Taking PfSE's priorities into consideration (11/2017 & 1/2018)	<ul style="list-style-type: none"> • The IPM Committee devoted more than an entire meeting to the discussion of its work priorities for 2014. The public was fully involved in the discussion and PfSE provided documents and testimony detailing their own priorities. The Committee had a thorough discussion and then voted on which priorities to pursue. • The IPM Committee continues to hear from PfSE about, and involve them in, setting priorities for the Committee (11/2017 and 1/2018).

⁵ California Government Code § 1090 prevents county employees and officials from being "financially interested" in any contract made by them in their official capacity, or by anybody or board of which they are members.

California Government Code § 81000 et seq., known as the Political Reform Act, requires, among other things, that certain public employees perform their duties in an impartial manner, free from bias caused by their own financial interest. See Cal Gov Code § 81001(b). It also prevents certain employees from using their positions to influence county decisions in which they have a financial interest. See Cal Gov Code 87100. The Act also requires certain employees and officers to file a Form 700, Statement of Economic Interests (the CCC Agricultural Commissioner, the managers in Public Works and the IPM Coordinator fill out this form) See Cal Gov Code 89503.

CCC Administrative Bulletin 117.6, paragraph 6, can be read to prevent employees from accepting any gift which "is intended, or could reasonably considered as tending to influence business or applications pending before the Board of Supervisors."

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IPM Coordinator references statements by members of Parents for a Safer Environment that were never made		
3/2/15	<i>From Parents for a Safer Environment (PfSE):</i> “PfSE members also feel a lack of goodwill and collaboration when the IPM Coordinator references statements by members that were never made. For example, in the Response Table, it states that a PfSE member stated at the February 12, 2015 [sic] TWIC meeting that ‘The IPM Committee is planning to include only 70% of PfSE’s priorities as the Committee’s priorities for 2014.’ We would be thrilled if this was the case...”	<ul style="list-style-type: none"> • In her written public comments to TWIC on February 12, 2014, Susan JunFish states: “We believe that the Committee is planning to address about 70% of the priority issues the community has raised, so we are hopeful. The two areas where there has been no plan to address are columns 4 and 5 of the table.”
The IPM Committee needs a non-voting facilitator		
2/12/14-TWIC 3/2/15-TWIC	<i>From Parents for a Safer Environment:</i> “an impartial, non-voting facilitator would make the meetings run smoother and become more viable”	<ul style="list-style-type: none"> • Staff believe that meetings are run effectively and efficiently. • The new IPM Committee chair has been very effective at running the 2014 and 2015 IPM Committee meetings and allowing the public ample opportunities to provide comment.
Parents for a Safer Environment disagrees with responses to “unresolved” issues in the Triennial Review Report		
11/6/13-IPM 2/12/14-TWIC 3/5/14-IPM 3/2/15-TWIC	<i>From Parents for a Safer Environment:</i> Disagreement with the response by staff to “unresolved issues” in the Triennial Review Report for the IPM Advisory Committee	<ul style="list-style-type: none"> • The response in dispute refers to the question in Section VIII of the Triennial Review report to the Board of Supervisors from the IPM Committee: “The purpose of this section is to briefly describe any potential issues raised by advisory body members, stakeholders, or the general public that the advisory body has been unable to resolve.” • The response given to this question in the report accurately reflects the response intended by the IPM Committee as agreed at their November 6, 2013 meeting. • The Triennial Review Report has been accepted by TWIC and the BOS, and the IPM Committee cannot go back and change the report. • The issue in question for the IPM Committee was whether to describe in Section VIII only issues that the Committee had been unable to resolve, or to also include a discussion of issues that PfSE felt were still unresolved. The Committee debated this and decided to also include a discussion of issues that PfSE felt were unresolved. However, it was completely clear from the discussion at the meeting that the Committee agreed that the issues described in this section (with the exception of the two that were noted as ongoing) had previously been given due consideration by the Committee, and that the Committee had addressed the issues. The Committee directed the IPM Coordinator to meet with the Committee Secretary to compile Committee and staff responses to the “unresolved” PfSE

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		issues to include in the report and then to submit the report. <ul style="list-style-type: none"> Note that in the IPM Committee's extensive planning sessions for 2014 work, the Committee did not identify any of the "unresolved" issues as priorities for 2014.

**City and County of San Francisco
Office of Contract Administration**

Request for Qualifications # 799

For

Heavy Cleaning and Infestation Preparation Services



Date issued:

Friday September 21, 2018

Deadline for Questions:

5 p.m., Friday October 5, 2018

Responses due:

3 p.m., Thursday October 18, 2018

**Request for Qualifications for
Heavy Cleaning and Infestation Preparation Services**

TABLE OF CONTENTS

	<u>Page</u>
I. Introduction and Schedule	1
II. Scope of Work	3
III. Submission Requirements.....	5
IV. Evaluation and Selection Criteria	8
V. Questions and Clarifications Regarding RFQ Requirements.....	10
VI. Terms and Conditions for Receipt of Responses	11
VII. Contract Requirements.....	15
VIII. Protest Procedures.....	19

Appendices:

- A. Required Information (Needs to be submitted)
- B. Sample P-245 Agreement (For your reference)
- C. Standard Forms: Listing and Internet addresses of Forms related to requirements for doing business with the City. (For your reference)

**Request for Qualifications for
Heavy Cleaning and Infestation Preparation Services**

I. Introduction and Schedule

A. General

General terms used in this Request for Qualifications (“RFQ”) are defined as follows:

Respondent refers to any entity submitting a Response to this RFQ, which may consist of any contractors who been pre-qualified.

Response refers to the qualifications package submitted for this RFQ.

Pre-Qualification refers to City’s evaluation process described below, which will result in a “pool” of pre-qualified Respondents.

Contractor refers to any Respondent pre-qualified to contract for services under this RFQ.

The Human Services Agency (HSA) of the City and County of San Francisco is issuing this RFQ to solicit responses from qualified firms who have the ability to provide heavy cleaning and infestation preparation services. This is the first of a two stage bid process to create a pool of pre-qualified firms available to all City departments. At this stage, the City will review and evaluate the information submitted with each response and will select respondents that meet the minimum qualifications to be placed in the pre-qualified pool. Whether a respondent is selected and placed in the pool will be determined through the evaluation process described in Section IV of this RFQ. The second stage will be the selection stage and will be carried out by individual programs wishing to use the pre-qualified pool to carry out their heavy cleaning and infestation preparation requirements. The City may select Contractors from the pre-qualified pool in its sole and absolute discretion. The manner of such selection includes but is not limited to request for quotes, invitations to bid, or any other method allowed by the City.

The pre-qualified pool established during the first stage will be valid for a term of two (2) years from the date it is established. Respondents pre-qualified under this RFQ will remain eligible for consideration for contract negotiations on an as-needed basis for two (2) years from the Pre-Qualification Notification date. The City reserves the right to extend the duration of the pool for up to four (4) years, pursuant to the rules established in Chapter 21 of the San Francisco Administrative code. If the duration of the pre-qualified pool is extended, the pool will be re-opened to new qualified vendors by issuing the same RFQ. On an as-needed basis, City departments will select firms from the pre-qualified pool to enter into contracts with. Firms that are selected and placed in the pre-qualified pool are not guaranteed a contract or a minimum amount of work or compensation. The City is not required to Heavy Cleaning and Infestation Preparation services exclusively from the selected vendors.

**Request for Qualifications for
Heavy Cleaning and Infestation Preparation Services**

B. Tentative Schedule

The anticipated schedule for selecting a consultant is:

Response Phase	Date
RFQ is issued by the City	Friday September 21, 2018
Deadline for submission of written questions or requests for clarification	5 p.m. Friday October 5, 2018
Responses due	3 p.m. Thursday, October 18, 2018

*Please be aware that these dates are tentative and subject to change.

C. Contractors Unable to do Business with the City

1. Generally

Contractors that do not comply with laws set forth in San Francisco’s Municipal Codes may be unable to enter into a contract with the City. Some of the laws are included in this RFQ, or in the sample terms and conditions attached.

2. Companies Headquartered in Certain States

This Contract is subject to the requirements of Administrative Code Chapter 12X, which prohibits the City from entering into contracts with companies headquartered in states with laws that perpetuate discrimination against LGBT populations or where any or all of the work on the contract will be performed in any of those states. Respondent s are hereby advised that Respondent s which have their United States headquarters in a state on the Covered State List, as that term is defined in Administrative Code Section 12X.3, or where any or all of the work on the contract will be performed in a state on the Covered State List may not enter into contracts with the City. A list of states on the Covered State List is available at the website of the City Administrator.

**Request for Qualifications for
Heavy Cleaning and Infestation Preparation Services**

II. Scope of Work

The City and County of San Francisco with the San Francisco Human Services Agency (HSA) is seeking a pool of qualified organization(s) to provide heavy cleaning and infestation preparation services. Please review this scope of work carefully and completely to be certain that your firm is able to provide at least one if not all of the service levels and types of services required for this contract.

A. Definitions

IPM – Integrated Pest Management (IPM) is a decision-making process that utilizes regular monitoring to determine if and when treatments are needed, and to evaluate their effectiveness. IPM programs employ a mix of biological, cultural, mechanical/physical, educational, and least-toxic chemical strategies and tactics to keep pest numbers low enough to prevent intolerable damage or nuisance. Non-chemical methods and pest prevention are emphasized, and pesticides are used only as a last resort when other approaches prove insufficient. The goal of IPM is to achieve long-term, cost-effective, and environmentally sound pest control.

B. General

The successful Contractor (and approved subcontractors where applicable) will perform heavy cleaning and infestation preparation services as specified and coordinated by APS (Adult Protective Services). Contractor may be expected to coordinate services with property owners, building managers, tenants, or any other Responsible Party, as defined within San Francisco Health Code, Article 11, Section 580.

The target population for the Services as specified is limited to low-income renters who are seniors or adults with disabilities (AWD) served by APS. APS receives referrals for Services from designated partners at Department of Public Health, the San Francisco Housing Authority, building managers, as well as the general public.

C. Project Services**1. Assessment and Quote**

A selected Contractor from the pool will respond to case referrals by inspecting the client residence in person and providing to APS a written assessment detailing a service plan and the cost of the Service(s). A service plan includes, but is not limited to: Estimates of work-hours required, laundry volume, duration of visit(s), infestation estimates for pests, detailed list of pest prevention activities needed (for example, sealing of cracks and holes, minor repairs, etc.). This Contractor may choose to quote on all the services required or just a portion of the required services necessary for the particular project.

If a contractor chooses to quote on only a portion of the project, the Department can get a separate quote for the remainder of the project. It is at the discretion of the department to divide the work among several contractors or work with just one contractor.

**Request for Qualifications for
Heavy Cleaning and Infestation Preparation Services**

2. Treatment

Prior to initiating Service(s), APS will get consent from the client that authorizes provision of Services.

If necessary, APS may provide client with receptacles and instructions to store valuables prior to Service date(s).

In some cases, the client will refuse to follow through with a heavy cleanup after initially agreeing to a Service Plan. Contractor shall work with APS to establish procedures for handling such situations, and APS will provide as much advance notice to the contractor as is possible

To the greatest extent possible, Contractor shall commence and end all Services at a client residence on the same workday, unless otherwise coordinated by APS.

Regardless of Service type provided, Contractor must complete and provide to APS a service report detailing Service Area pre-treatment, post-treatment, and any future Service recommendations.

D. Contractor Responsibilities

Contractor shall provide the following services during the term of this contract:

Contractor shall recommend and provide heavy clean-up and area preparation for pest management strategies using the latest Integrated Pest Management (IPM) methods.

- Contractor shall perform heavy clean-up and/or the coordination of pest management services as specified and coordinated by APS (Adult Protective Services) or designated partners from the Department of Public Health. Referrals will be made to the Contractor by the APS or DPH partners via phone.
- Contractor shall collaborate with APS and DPH partners during the clean-up process to ensure minimal negative impact on the client.
- If specified by APS, Contractor shall provide services as follows:
 - Contractor will fill out the APS Heavy Cleaning Estimate form, and take before and after pictures of the work.
 - Contractor will vacuum and clean all floors/carpets.
 - Contractor will dispose of any hazardous waste.
 - Contractor will clean and sanitize all bathrooms.
 - Contractor will conduct a general cleaning of the unit in preparation of pest control service.
 - Contractor will discard all trash and items deemed too infested to remain in unit, placing bagged items in approved on-site containers for pick-up.
 - Contractor will vacuum all cracks and crevices on all items to remove pests and pest-produced waste prior to treatment.
 - Contractor will work with APS and the client to determine what clothing, bedding, and other washable items must be removed or washed by a service.
 - Contractor will bag items, and coordinate cleaning and/or hauling services.

**Request for Qualifications for
Heavy Cleaning and Infestation Preparation Services**

III. Submission Requirements**A. Time and Place for Submission of Responses**

Responses must be received by 3:00 p.m., on **Thursday October 18, 2018**. Responses shall be submitted electronically by uploading them to the City's PeopleSoft system, using its Supplier Portal located at:

<https://sfsupplierportal.sfgov.org/psp/supplier/SUPPLIER/ERP/h/?tab=DEFAULT>

Responses can also hand delivered, delivery by fax or Email will not be accepted. In order to submit a response in the Supplier Portal, Respondent must register in the system as a Sourcing Bidder. For more information about the system and registration, visit our SF City Partner website at: <https://sfcitypartner.sfgov.org/>

For hand delivery or any other mail options, submissions **must** be received at the Office of Contract Administration – Purchasing, City Hall, Room 430, 1 Dr. Carlton B. Goodlett Place, San Francisco, CA 94102, by the time and date indicated above. Please reference Request for Qualification No. 799

This contract opportunity is in the Supplier Portal as event “*HSA RFQ 799 Heavy Cleaning and Infestation preparation Services*” and has Event ID No. 0000001177.

Respondents shall address any questions regarding the RFQ via email to the Office of Contract Administration's Senior Purchaser Hermilo Rodis at Hermilo.Rodis [@sfgov.org](mailto:Hermilo.Rodis@sfgov.org) (415)557-5538. Respondents shall not contact other executives, managers or employees of the Office of Contract Administration and/or any other City department. Contact or correspondence with other executives, managers or employees during the procurement process may result in a cancellation of this RFQ.

Late submissions will not be considered. Each response received will be screened to ensure that the information required in this RFQ is included. Partial or complete omission of any of these items from a response may disqualify responses from further consideration.

B. Format

For word processing documents, the City prefers that text be unjustified (i.e., with a ragged-right margin) and use a serif font (e.g., Times Roman, and not Arial), and that pages have margins of at least 1” on all sides (excluding headers and footers).

Please include a Table of Contents and number every page.

C. Content

Firms interested in responding to this RFQ must submit the following information, in the order specified below: Omission of any of these items from a response may disqualify responses from further consideration. This information will not be scored, but will be used by departments wishing to hire firms in the pre-qualified pool.

1. Introduction and Executive Summary (No more than 3 pages)

Submit a letter of introduction and executive summary of your response. The letter must be signed by a person authorized by your firm to obligate your firm to perform the commitments contained in the response. Submission of the letter will constitute a representation by your firm that your firm is willing and able to

Request for Qualifications for Heavy Cleaning and Infestation Preparation Services

perform the commitments contained in the response. The summary should cover the following:

Brief history of your company, years of experience providing heavy cleaning and infestation preparation services, the location of your headquarters, a profile of your key personnel that will participate in this contract, what differentiates your company from the competitors, demonstrate an understanding of the City's needs and intent as described in this RFQ, and a brief overview of your response's key elements.

2. **Respondent's Qualifications** (No more than 15 pages)

a. Firm Qualifications

Provide information on your firm's background and qualifications which addresses the following:

- i. Name, address, and telephone number of a contact person; and
- ii. A brief description of your firm, as well as how any joint venture or association would be structured; and
- iii. A description of not more than three projects of similar scope prepared by your firm.

(a) Your description should include: client reference and contact information, staff members who worked on each project, project budget, size (square feet) of facilities relocated to, amount of staff/people that were relocated, types of facilities worked with (office, garage, etc.), project schedule, and project summary. Descriptions should be limited to two pages for each project.

(b) If joint consultants or sub-consultants are proposed provide the above information for each.

b. Team Qualifications

- i. Provide a list identifying: (1) each key person on the project team, (2) the project manager, (3) the role each will play in the project, and (4) a written assurance that the key individuals listed and identified will be performing the work and will not be substituted with other personnel or reassigned to another project without the City's prior approval.
- ii. Provide a description of the experience and qualifications of the project team members, including brief resumes.

3. **Respondent Approach** (No more than 10 pages)

Describe the services and activities that your firm proposes to provide to the City for heavy cleaning and infestation preparation projects. This should cover services and activities that your firm typically provides for such projects, and those that are generally expected for such projects. Include the following information:

- a. All scope of work tasks and deliverables expected to be provided, along with a detailed description of what the tasks/deliverables would include;

**Request for Qualifications for
Heavy Cleaning and Infestation Preparation Services**

- b. Sample schedules and expected timelines to complete such projects; and
- c. Assignment of work within your firm's work team.

4. **Price Information** (No more than 2 pages)

Respondent must submit Price Information. The City intends to pre-qualify firms that it considers will provide the best overall services for its heavy cleaning and infestation preparation needs. The City reserves the right to accept other than the lowest priced offer and to reject any response that are not responsive to this request. Price Information will not be used in the Pre-Qualification evaluation process. Price Information will be made available to departments seeking to hire a pre-qualified vendor from the pool. Your Price Information should include:

- a. Typical fee structure for heavy cleaning and infestation preparation projects. This should include total fees charged for deliverables/tasks you would intend to provide to the City for heavy cleaning and infestation preparation projects.
- b. Hourly rates for all team members. Hourly rates and itemized costs may be used to negotiate changes in the Scope of Work if necessary.

5. **Required Information**

Please provide a completed Appendix A: "Required Information." Included in this document will be your References and a Minimum Requirements Checklist.

6. **CMD Forms**

All responses submitted must include required CMD forms as listed in Section VI.N of this RFQ, as a separate file/attachment.

Other forms may also be required to be filed with the City to meet City requirements, but may not have to be submitted with the response, if your firm is already compliant. For a list of the standard forms, see Appendix C.

7. **Signed Addenda (if any)**

If the City has issued any addenda under this RFQ, please sign and submit each addendum with your response submission. It is respondent's responsibility to constantly check the PeopleSoft Event for Addenda.

**Request for Qualifications for
Heavy Cleaning and Infestation Preparation Services**

IV. Evaluation Criteria

This section describes the guidelines used for analyzing and evaluating the responses for pre-qualification. It is the City’s intent to pre-qualify Respondent(s) who provide the best overall qualifications to the City. Firms selected for pre-qualification are not guaranteed a contract. This RFQ does not, in any way, limit the City’s right to solicit contracts for similar or identical services if, in the City’s sole and absolute discretion, it determines the pre-qualified list is inadequate to satisfy its needs.

A. Evaluation Team

City representatives will serve as the Evaluation Team responsible for evaluating Respondents. Specifically, the team will be responsible for evaluating and rating the responses for pre-qualification, for conducting reference checks, and for interviews, if desired by the City.

B. Minimum Qualifications

The following table outlines the minimum qualifications that respondents who wish to be pre-qualified must possess. Any response that does not demonstrate that the respondent meets these minimum qualifications by the deadline for submittal of responses may be considered non-responsive and may not be eligible for pre-qualification.

Table 1 Minimum Qualifications

Minimum Qualification #	Requirement	Item to be submitted with Response
1	At least three (3) years’ experience providing heavy cleaning and infestation preparation services. The experience must be from the within the last five (5) years of the response due date.	The “Executive Summary” in your response shall describe in detail your years of experience providing such services. See Section III.C.1. of this RFQ above. Three verifiable client references (See MQ #2).
2	Three (3) <i>verifiable</i> client references, for heavy cleaning and infestation preparation services, provided within the last five (5) years of the response due date. Each reference shall verify, to City staff, the information provided. Your references should demonstrate that you meet MQ #1.	“References” section within Appendix A “Required Information.” See Section III.C.5. of this RFQ above.
3	At least three (3) prior projects for heavy cleaning and infestation preparation services for a company or organization.	Respondent’s Qualifications section of your response. See Section III.C.2.a.iii. of this RFQ above.

The City reserves the right to reject any response if the documentation submitted by the respondent fails to satisfy the City, and/or respondent is unable to supply the documentation within the time period requested. The City reserves the right to terminate a contract after the award if any of the documentation is found later to be misleading or the respondent has misrepresented their qualifications and experience.

**Request for Qualifications for
Heavy Cleaning and Infestation Preparation Services**

C. Evaluation Criteria for Pre-Qualification by OCA

Each RFQ response that meets the Minimum Qualifications will be added to the pre-qualified pool. There is no numerical limit to the number of firms that may be pre-qualified.

Table 2 Pre-Qualification Criteria

Criteria	Evaluation Method
Minimum Qualifications	Pass/Fail

The evaluation team will review each response. A response that passes all minimum qualifications will be eligible for pre-qualification. A response that fails to meet the minimum qualifications may not be eligible for pre-qualification. The City reserves the right to request clarifications from respondents prior to rejecting a response for failure to meet the minimum qualifications. Clarifications are limited exchanges between the City and Respondent for the purpose of clarifying certain aspects of the response and will not provide a respondent the opportunity to revise or modify its responses.

D. Contractor Selection Process by Departments

City departments may choose firms from the pre-qualified pool for heavy cleaning and infestation preparation services on an as-needed basis. City departments will negotiate the specific scope of services, budget, deliverables, and timeline for each project they decide to pursue.

The selection of any pre-qualified Respondent for contract negotiations shall not imply acceptance by the City of all terms of the response, which may be subject to further negotiation and approvals before the City may be legally bound thereby.

If a satisfactory contract cannot be negotiated in a reasonable time with any pre-qualified Respondent, then the City, in its sole discretion, may terminate negotiations and begin contract negotiations with any other remaining pre-qualified Respondents.

The City, in its sole discretion, has the right to approve or disapprove any staff person assigned to a firm's projects before and throughout the contract term. The City reserves the right at any time to approve, disapprove, or modify proposed project plans, timelines and deliverables.

There is no guarantee of a minimum amount of work or compensation for any of the respondents selected for pre-qualification.

**Request for Qualifications for
Heavy Cleaning and Infestation Preparation Services**

V. Questions and Clarifications Regarding RFQ Requirements.

A. All respondents are encouraged to carefully review all pages of this Request for Qualification. All questions, comments, and concerns should be immediately be directed to the buyer before October 5, 2018. All questions and/or concerns should be sent to the buyer listed below:

Hermilo Rodis, Senior Purchaser
City and County of San Francisco
Office of Contract Administration
Purchasing Division
City Hall, Room 430
1 Dr. Goodlett Place
San Francisco, CA 94102-4685
E-mail hermilo.rodیس@sfgov.org
Fax No. (415) 557-5538

Please reference Request for Qualification No. 799

B. Any respondent's failure to raise concerns, in writing, related to this Request for Qualification requirements or failure to report an incorrect reference by October 5, 2018 will be deemed a waiver of the bidder's right to protest any decision for contract award relating to the Request for Qualification's requirements.

C. For informational purposes: Questions and Answers of the respondent's questions sent by October 5, 2018 may be posted on **this Request for Qualification's Event page in the Supplier Portal**. The Event Number is 0000001177.

D. **It is the responsibility of the bidder to check for any Addendum and any other items posted, that will be posted on this Request for Qualification's Event page in the Supplier Portal.** The Event Number is 0000001177.

Note that every Addendum will create a new version of the Event. Bidders should monitor the event for new versions. If there is a new version that means that something has been changed or added in the event. If addenda are issued, a signed receipt must be acknowledged by the bidder by including them as part of the bid submission to ensure that all requirements are included in the RFQ. Failure to include all addenda may result in your submission not being considered. The City will assume no responsibility for oral instructions or suggestions.

If the City issues an Addendum after Respondent has submitted their RFQ, but prior to the Event end date, Bidder must retract their submission, and resubmit their bid along with the newly issued Addendum.

Supplier Portal:

<https://sfsupplierportal.sfgov.org/psp/supplier/SUPPLIER/ERP/h/?tab=DEFAULT>

**Request for Qualifications for
Heavy Cleaning and Infestation Preparation Services**

VI. Terms and Conditions for Receipt of Responses

A. Errors and Omissions in RFQ

Respondents are responsible for reviewing all portions of this RFQ. Respondents are to promptly notify the Department, in writing, if the respondent discovers any ambiguity, discrepancy, omission, or other error in the RFQ. Any such notification should be directed to the Department promptly after discovery, but in no event later than 72 hours prior to the date that responses are due. Modifications and clarifications will be made by addenda as provided below.

B. Questions and Objections Regarding RFQ

Any questions or objections concerning the requirements and terms in this RFQ must be submitted, in writing, via email to Hermilo.Rodis@sfgov.org by **10 a.m. on Friday October 5, 2018**. Respondents who fail to do so will waive all further rights to protest, based on these requirements and terms.

C. Objections to RFQ Terms

Should a respondent object on any ground to any provision or legal requirement set forth in this RFQ, the respondent must, no later than **10 a.m. on Friday October 5, 2018**, provide written notice via email to the Purchaser at Hermilo.Rodis@sfgov.org setting forth with specificity the grounds for the objection. The failure of a respondent to object in the manner set forth in this paragraph shall constitute a complete and irrevocable waiver of any such objection.

D. Change Notices/Addendum

The City may modify the RFQ, prior to the response due date, by issuing RFQ Addendum(s), which will be posted on this Event's page in the Supplier Portal. The respondent shall be responsible for ensuring that its response reflects any and all RFQ Addendum(s) issued by the City prior to the response due date regardless of when the response is submitted. If addenda are issued, a signed receipt shall be acknowledged by the Respondent by including them as part of the RFQ submission to ensure that all requirements are included in the response. Failure to include all signed addenda may result in your response not being considered. The City will assume no responsibility for oral instructions or suggestions.

Therefore, the City recommends that the respondent consult the Event frequently, including shortly before the response due date, to determine if the respondent has downloaded all RFQ Addendum(s). It is the responsibility of the respondent to check for any Addendum, Questions and Answers, and updates, which will be posted on this Event's page in the Supplier Portal at: <https://sfsupplierportal.sfgov.org/psp/supplier/SUPPLIER/ERP/h/?tab=DEFAULT>

Note that every Addendum will create a new version of the Event. Respondents should monitor the event for new versions. If there is a new version that means that something has been changed or added in the event.

If the City issues an Addendum after Respondent has submitted their response, but prior to the Event end date, Respondent must retract their response, and resubmit their response along with the newly issued Addendum prior to the Response due date.

E. Term of Response

Submission of a response signifies that the proposed services and prices are valid for 180 calendar days from the response due date and that the quoted prices are genuine and not the result of collusion or any other anti-competitive activity. At Respondent's election, the response may remain valid beyond the 180 day period in the circumstance of extended negotiations.

**Request for Qualifications for
Heavy Cleaning and Infestation Preparation Services**

F. Revision of Response

A respondent may revise a response on the respondent's own initiative at any time before the deadline for submission of responses. The respondent must submit the revised response in the same manner as the original. A revised response must be received on or before, but no later than the response due date and time.

In no case will a statement of intent to submit a revised response, or commencement of a revision process, extend the response due date for any respondent.

At any time during the response evaluation process, the Department may require a respondent to provide oral or written clarification of its response. The Department reserves the right to make an award without further clarifications of responses received.

G. Errors and Omissions in Response

Failure by the Department to object to an error, omission, or deviation in the response will in no way modify the RFQ or excuse the vendor from full compliance with the specifications of the RFQ or any contract awarded pursuant to the RFQ.

H. Financial Responsibility

The City accepts no financial responsibility for any costs incurred by a firm in responding to this RFQ. Submissions of the RFQ will become the property of the City and may be used by the City in any way deemed appropriate.

I. Proposer's Obligations under the Campaign Reform Ordinance

Proposers must comply with Section 1.126 of the S.F. Campaign and Governmental Conduct Code, which states:

No person who contracts with the City and County of San Francisco for the rendition of personal services, for the furnishing of any material, supplies or equipment to the City, or for selling any land or building to the City, whenever such transaction would require approval by a City elective officer, or the board on which that City elective officer serves, shall make any contribution to such an officer, or candidates for such an office, or committee controlled by such officer or candidate at any time between commencement of negotiations and the later of either (1) the termination of negotiations for such contract, or (2) three months have elapsed from the date the contract is approved by the City elective officer or the board on which that City elective officer serves.

If a proposer is negotiating for a contract that must be approved by an elected local officer or the board on which that officer serves, during the negotiation period the proposer is prohibited from making contributions to:

- the officer's re-election campaign
- a candidate for that officer's office
- a committee controlled by the officer or candidate.

The negotiation period begins with the first point of contact, either by telephone, in person, or in writing, when a contractor approaches any city officer or employee about a particular contract, or a city officer or employee initiates communication with a potential contractor about a contract. The negotiation period ends when a contract is awarded or not awarded to the contractor. Examples of initial contacts include: (1) a vendor contacts a city officer or employee to promote himself or herself as a candidate for a contract; and (2) a city officer or employee contacts a contractor to propose that the contractor apply for a contract. Inquiries for information about a particular contract, requests for documents relating to a Request for Response, and requests to be placed on a mailing list do not constitute negotiations.

Violation of Section 1.126 may result in the following criminal, civil, or administrative penalties:

**Request for Qualifications for
Heavy Cleaning and Infestation Preparation Services**

1. Criminal. Any person who knowingly or willfully violates section 1.126 is subject to a fine of up to \$5,000 and a jail term of not more than six months, or both.
2. Civil. Any person who intentionally or negligently violates section 1.126 may be held liable in a civil action brought by the civil prosecutor for an amount up to \$5,000.
3. Administrative. Any person who intentionally or negligently violates section 1.126 may be held liable in an administrative proceeding before the Ethics Commission held pursuant to the Charter for an amount up to \$5,000 for each violation.

For further information, proposers should contact the San Francisco Ethics Commission at (415) 581-2300.

J. Sunshine Ordinance

In accordance with S.F. Administrative Code Section 67.24(e), contractors' bids, responses to RFQs and all other records of communications between the City and persons or firms seeking contracts shall be open to inspection immediately after a contract has been awarded. Nothing in this provision requires the disclosure of a private person's or organization's net worth or other proprietary financial data submitted for qualification for a contract or other benefits until and unless that person or organization is awarded the contract or benefit. Information provided which is covered by this paragraph will be made available to the public upon request.

K. Public Access to Meetings and Records

If a proposer is a non-profit entity that receives a cumulative total per year of at least \$250,000 in City funds or City-administered funds and is a non-profit organization as defined in Chapter 12L of the S.F. Administrative Code, the proposer must comply with Chapter 12L. The proposer must include in its response (1) a statement describing its efforts to comply with the Chapter 12L provisions regarding public access to proposer's meetings and records, and (2) a summary of all complaints concerning the proposer's compliance with Chapter 12L that were filed with the City in the last two years and deemed by the City to be substantiated. The summary shall also describe the disposition of each complaint. If no such complaints were filed, the proposer shall include a statement to that effect. Failure to comply with the reporting requirements of Chapter 12L or material misrepresentation in proposer's Chapter 12L submissions shall be grounds for rejection of the response and/or termination of any subsequent Agreement reached on the basis of the response.

L. Reservations of Rights by the City

The issuance of this RFQ does not constitute an agreement by the City that any contract will actually be entered into by the City. The City expressly reserves the right at any time to:

1. Waive or correct any defect or informality in any response, response, or response procedure;
2. Reject any or all responses;
3. Reissue a Request for Qualifications;
4. Prior to submission deadline for responses, modify all or any portion of the selection procedures, including deadlines for accepting responses, the specifications or requirements for any materials, equipment or services to be

**Request for Qualifications for
Heavy Cleaning and Infestation Preparation Services**

provided under this RFQ, or the requirements for contents or format of the responses;

5. Procure any materials, equipment or services specified in this RFQ by any other means; or
6. Determine that no project will be pursued.

M. No Waiver

No waiver by the City of any provision of this RFQ shall be implied from any failure by the City to recognize or take action on account of any failure by a proposer to observe any provision of this RFQ.

N. Local Business Enterprise Goals and Outreach

1. Due to a mix of State and local funding, LBE discounts/bonuses will not be used in this RFQ.

**Request for Qualifications for
Heavy Cleaning and Infestation Preparation Services**

VII. Contract Requirements**A. Standard Contract Provisions**

The successful proposer will be required to enter into a contract substantially in the form of the Agreement for Professional Services, attached hereto as Appendix B. Failure to timely execute the contract, or to furnish any and all insurance certificates and policy endorsement, surety bonds or other materials required in the contract, shall be deemed an abandonment of a contract offer. The City, in its sole discretion, may select another firm and may proceed against the original selectee for damages.

B. Nondiscrimination in Contracts and Benefits

The successful respondent will be required to agree to comply fully with and be bound by the provisions of Chapters 12B and 12C of the San Francisco Administrative Code. Generally, Chapter 12B prohibits the City and County of San Francisco from entering into contracts or leases with any entity that discriminates in the provision of benefits between employees with domestic partners and employees with spouses, and/or between the domestic partners and spouses of employees. The Chapter 12C requires nondiscrimination in contracts in public accommodation. Additional information on Chapters 12B and 12C is available on the CMD's website at <http://sfgov.org/cmd/>.

C. Minimum Compensation Ordinance (MCO)

The successful respondent will be required to agree to comply fully with and be bound by the provisions of the Minimum Compensation Ordinance (MCO), as set forth in S.F. Administrative Code Chapter 12P. Generally, this Ordinance requires contractors to provide employees covered by the Ordinance who do work funded under the contract with hourly gross compensation and paid and unpaid time off that meet certain minimum requirements. For the amount of hourly gross compensation currently required under the MCO, see www.sfgov.org/olse/mco. Note that this hourly rate may increase on January 1 of each year and that contractors will be required to pay any such increases to covered employees during the term of the contract.

Additional information regarding the MCO is available on the web at www.sfgov.org/olse/mco.

D. Health Care Accountability Ordinance (HCAO)

The successful respondent will be required to agree to comply fully with and be bound by the provisions of the Health Care Accountability Ordinance (HCAO), as set forth in S.F. Administrative Code Chapter 12Q. Contractors should consult the San Francisco Administrative Code to determine their compliance obligations under this chapter. Additional information regarding the HCAO is available on the web at www.sfgov.org/olse/hcao.

E. First Source Hiring Program (FSHP)

If the contract is for more than \$50,000, then the First Source Hiring Program (Admin. Code Chapter 83) may apply. Generally, this ordinance requires contractors to notify the First Source Hiring Program of available entry-level jobs and provide the Workforce Development System with the first opportunity to refer qualified individuals for employment.

Contractors should consult the San Francisco Administrative Code to determine their compliance obligations under this chapter. Additional information regarding the FSHP is available on the web at <http://oewd.org/first-source> and from the First Source Hiring Administrator, (415) 701-4848.

F. Conflicts of Interest

The successful respondent will be required to agree to comply fully with and be bound by the applicable provisions of state and local laws related to conflicts of interest, including Section 15.103 of the

**Request for Qualifications for
Heavy Cleaning and Infestation Preparation Services**

City's Charter, Article III, Chapter 2 of City's Campaign and Governmental Conduct Code, and Section 87100 et seq. and Section 1090 et seq. of the Government Code of the State of California. The successful respondent will be required to acknowledge that it is familiar with these laws; certify that it does not know of any facts that constitute a violation of said provisions; and agree to immediately notify the City if it becomes aware of any such fact during the term of the Agreement.

Individuals who will perform work for the City on behalf of the successful respondent might be deemed consultants under state and local conflict of interest laws. If so, such individuals will be required to submit a Statement of Economic Interests, California Fair Political Practices Commission Form 700, to the City within ten calendar days of the City notifying the successful respondent that the City has selected the respondent.

G. Insurance

Without in any way limiting Proposer's liability pursuant to the "indemnification" section of the Agreement (Appendix C), Proposer will be required to maintain in force, during the full term of any agreement, insurance in the following amounts and coverage

1. Required Coverages. Without in any way limiting Contractor's liability pursuant to the "Indemnification" section of this Agreement, Contractor must maintain in force, during the full term of the Agreement, insurance in the following amounts and coverages:

a. Workers' Compensation, in statutory amounts, with Employers' Liability Limits not less than \$1,000,000 each accident, injury, or illness; and

b. Commercial General Liability Insurance with limits not less than \$1,000,000 each occurrence and \$2,000,000 general aggregate for Bodily Injury and Property Damage, including Contractual Liability, Personal Injury, Products and Completed Operations; and

c. Commercial Automobile Liability Insurance with limits not less than \$1,000,000 each occurrence, "Combined Single Limit" for Bodily Injury and Property Damage, including Owned, Non-Owned and Hired auto coverage, as applicable.

2. Commercial General Liability and Commercial Automobile Liability Insurance policies must be endorsed to provide:

a. Name as Additional Insured the City and County of San Francisco, its Officers, Agents, and Employees.

b. That such policies are primary insurance to any other insurance available to the Additional Insureds, with respect to any claims arising out of this Agreement, and that insurance applies separately to each insured against whom claim is made or suit is brought.

3. All policies shall be endorsed to provide thirty (30) days' advance written notice to the City of cancellation for any reason, intended non-renewal, or reduction in coverages. Notices shall be sent to the City address set forth in Section 11.1, entitled "Notices to the Parties."

**Request for Qualifications for
Heavy Cleaning and Infestation Preparation Services**

4. Should any of the required insurance be provided under a claims-made form, Contractor shall maintain such coverage continuously throughout the term of this Agreement and, without lapse, for a period of three years beyond the expiration of this Agreement, to the effect that, should occurrences during the contract term give rise to claims made after expiration of the Agreement, such claims shall be covered by such claims-made policies.
5. Should any required insurance lapse during the term of this Agreement, requests for payments originating after such lapse shall not be processed until the City receives satisfactory evidence of reinstated coverage as required by this Agreement, effective as of the lapse date. If insurance is not reinstated, the City may, at its sole option, terminate this Agreement effective on the date of such lapse of insurance.
6. Before commencing any Services, Contractor shall furnish to City certificates of insurance and additional insured policy endorsements with insurers with ratings comparable to A-, VIII or higher, that are authorized to do business in the State of California, and that are satisfactory to City, in form evidencing all coverages set forth above. Approval of the insurance by City shall not relieve or decrease Contractor's liability hereunder.
7. The Workers' Compensation policy(ies) shall be endorsed with a waiver of subrogation in favor of the City for all work performed by the Contractor, its employees, agents and subcontractors.
8. If Contractor will use any subcontractor(s) to provide Services, Contractor shall require the subcontractor(s) to provide all necessary insurance and to name the City and County of San Francisco, its officers, agents and employees and the Contractor as additional insureds.
9. Approval of the insurance by City shall not relieve or decrease the liability of Contractor hereunder.
10. City reserves the right to increase required limits for insurance coverage based on individual departmental needs.

H. Failure to Deliver. If Contractor fails to deliver an article or service of the quality, in the manner or within the time called for by this Contract, such article or service may be bought from any source by Purchasing and if a greater price than the contract price be paid, the excess price will be charged to and collected from Contractor or sureties on its bond if bond has been required.

I. Use of City Opinion. Contractor shall not quote, paraphrase, or otherwise refer to or use any opinion of City, its officers or agents, regarding Contractor or Contractor's performance under this Contract without prior written permission of Purchasing.

J. Resource Conservation. Contractor agrees to comply fully with the provisions of Chapter 5 of the San Francisco Environment Code ("Resource Conservation"), as amended from time to time. Said provisions are incorporated herein by reference.

K. Cooperative Agreement. The selected Proposer will be asked to make a selection below upon Award.

**Request for Qualifications for
Heavy Cleaning and Infestation Preparation Services**

Contractor agrees _____ or does not agree _____ (make a selection by an “X” mark) that during the term of this agreement and any authorized extension, the Director of Purchasing may allow other public agencies or non-profits made up of multiple public agencies to utilize this agreement to obtain some or all of the services and/or commodities to be provided by Contractor under the same terms and conditions as the City, pursuant to a Board of Supervisor Resolution.

L. Reports by Contractor

MULTI-YEAR TERM CONTRACT

Each year, no later than February 15; Contractor shall submit a soft copy report of the total services ordered, by month, under this contract during the preceding calendar year (January 1 – December 31). The report must be in a format acceptable to City and must list by department or location the following: (1) all services awarded under this contract; and (2) total quantity and dollar value of each service ordered, including services for which there were no orders. Contractor must also furnish a separate similar report for the total of all services ordered by City which are not part of this Contract, and any usage reports required prior to the extension of a Contract or Contract Modification. Emailed reports must not be larger than **10MB**.

Contractor shall email reports to:

OCAVendor.Reports@sfgov.org

Any report files larger than **10MB** must be submitted in electronic format on CD-ROM or USB drive and mailed to the address shown below with the term contract number and “Annual Vendor Reporting” clearly marked on the envelope/packaging.

Contractor shall mail the reports to:

OCA Vendor Reporting
Re: Agreement No. **799**
City and County of San Francisco
Office of Contract Administration – Purchasing
City Hall, Room 430
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102-4685

M. Emergency – Priority 1 Service. In case of an emergency that affects the San Francisco Bay Area, Contractor will give the City and County of San Francisco Priority 1 service. Contractor will make every good faith effort in attempting to provide emergency services. Contractor shall provide a 24-hour emergency telephone number of a company representative who is able to receive and act on requests for emergency services. In addition, Contractor shall charge fair and competitive prices for services ordered during an emergency and not covered under the awarded contract.

**Request for Qualifications for
Heavy Cleaning and Infestation Preparation Services**

VIII. Protest Procedures**A. Protest of Non-Responsiveness Determination**

Within five working days of the City's issuance of a notice of non-responsiveness, any firm that has submitted an RFQ and believes that the City has incorrectly determined that its response is non-responsive may submit a written notice of protest. Such notice of protest must be received by the City on or before the fifth working day following the City's issuance of the notice of non-responsiveness. The notice of protest must include a written statement specifying in detail each and every one of the grounds asserted for the protest. The protest must be signed by an individual authorized to represent the proposer, and must cite the law, rule, local ordinance, procedure or RFQ provision on which the protest is based. In addition, the protestor must specify facts and evidence sufficient for the City to determine the validity of the protest.

B. Protest of Non-Responsible Determination

Within five working days of the City's issuance of a notice of a determination of non-responsibility, a vendor that would otherwise be the lowest responsive proposer may submit a written notice of protest. The vendor will be notified of any evidence reflecting upon their responsibility received from others or adduced as a result of independent investigation. The vendor will be afforded an opportunity to rebut such adverse evidence, and will be permitted to present evidence that they are qualified to perform the contract. Such notice of protest must be received by the City on or before the fifth working day following the City's issuance of the notice of non-responsibility. The notice of protest must include a written statement specifying in detail each and every one of the grounds asserted for the protest. The protest must be signed by an individual authorized to represent the proposer, and must cite the law, rule, local ordinance, procedure or RFQ provision on which the protest is based. In addition, the protestor must specify facts and evidence sufficient for the City to determine the validity of the protest.

C. Delivery of Protests

All protests must be received by the due date. If a protest is mailed, the protestor bears the risk of non-delivery within the deadlines specified herein. Protests should be transmitted by a means that will objectively establish the date the City received the protest. Protests or notice of protests made orally (e.g., by telephone) will not be considered. Protests must be delivered to:

Hermilo Rodis
Office of Contract Administration
1 Dr. Carlton B. Goodlett Place, City Hall, Room 430, San Francisco, CA 94102

PESTICIDES OF CONCERN ARE SHADED (Pesticide Action Network defined "Bad Actors")

Contra Costa County Public Works

	Name of Product Applied	EPA or Calif. Registration #	Amt Used FY 00-01	Specific Gravity	% A. I.	Total Lbs A.I. Used FY 00-01	Amt Used FY 14-15	Total Lbs A.I. Used 14-15	Amt Used FY 15-16	Total Lbs A.I. Used 15-16	Amt Used FY 16-17	Total Lbs A.I. Used 16-17	Amt Used FY 17-18	Total Lbs A.I. Used 17-18
	<i>Liquid Materials</i>		(gallons)				(gallons)		(gallons)		(gallons)		(gallons)	
Adjuvant	Activator 90	36208-50014	613.88	1.040	90.000	4786.31								
Adjuvant	Agri-Dex	5905-50094-AA		0.879	99.000			84.75	614.34	49.5	358.82	19.75	143.16	
	Chemtrol	36208-50015	14.00	0.995	1.000	1.16								
Penoxulam	Cleantraxx	62719-702-AA		1.177	0.850					1.5	0.13			
Oxyfluorfen				1.177	40.310					1.5	5.93			
Sodium salt of Imazxamox	Clearcast	241-437-AA-67690		1.049	12.100		3.50	3.70	3.31	3.50			2.00	2.11
Copper ethanolamine complexes, mixed	Cutrine Plus	8959-10-AA	65.00	1.206	9.000	58.78								
Dithiopyr	Dimension 2EW	62719-542-AA		1.001	24.000			0.31	0.62					
Indaziflam	Esplanade 200 SC	432-1516-AA		1.050	19.050		25.14	41.89	28.44	47.39	24.96	41.59	22.21	37.01
Prodiamine	Evade 4FL	34704-915-AA		1.184	40.500						21.25	84.88		
Adjuvant	Foam Fighter F	36208-50015	1.25	0.995	5.000	0.52								
Dimethyl silicone fluid emulsion	Foam Fighter F	36208-50003, 72-50005-AA	0.00	1.000	10.000								0.38	0.32
Triclopyr triethylamine salt	Garlon 3A	62719-37-ZA	64.00	1.135	44.400	268.66	166.75	699.99	153.13	642.81	186.38	782.39	122.00	512.13
Triclopyr BEE	Garlon 4	62719-40	51.25	1.060	61.600	278.76								
Oxyfluorfen	Goal	707-174	2.00	0.990	19.400	3.20						0.00		
Oxyfluorfen	Goal Tender	62719-447-ZA	0.00	1.170	41.000				13.38	53.47				
Imazapyr, isopropylamine salt	Habitat	241-426-AA	0.00	1.068	28.700		2.19	5.59	3.55	9.07	0.39	1.00	0.47	1.20
Heavy-range paraffin based petroleum oil+nonionic emulsifiers	Helena Agri-Dex	5905-50017-AA		0.879	99.000		2.00	14.50						
Aminopyralid, tri isopropanolamine salt	Milestone	62719-519-AA		1.140	40.600				4.75	18.31	14.06	54.21	15.39	59.34
Aminopyralid, tri isopropanolamine salt	Milestone VM	62719-537-AA	0.00	1.140	40.600		13.09	50.48	8.72	33.63				
Adjuvant	M.O.C. Methylated Oil Concentrate	5905-50095-AA		0.891	100.000				2.75	20.41	2.38	17.66	2.63	19.52
Adjuvant	MSO Conc w/Lecl-Tech	34704-50053-AA		0.900	100.000		0.38	2.85						
Adjuvant	No Foam A	11656-50086-ZA & AA	0.00	1.050	90.000		209.00	1645.22	121.75	958.40				
Adjuvant	No Foam A	1050775-50015-AA		1.060	90.000				0.5	3.97	131.88	1048.03	125.25	995.34
Pendimethalin	Pendulum Aquacap	241-416-AA	0.00	1.175	38.700				5.00	18.94				
Imazapyr, isopropylamine salt	Polaris	228-534-AA		1.057	27.700				0.33	0.80				
Adjuvant	Quest	5905-50076-AA		1.350	48.760								63.50	348.19
Triclopyr TEA	Renovate 3	62719-37-67690	0.00	1.140	44.400		35.13	148.15	27.63	116.52	27.5	115.97	26.00	109.64
Glyphosate,	Rodeo	524-343	221.00	1.205	53.800	1193.46								
Glyphosate, isopropylamine salt	Roundup Custom	524-343-ZC & ZG		1.206	53.800		29.94	161.82	49.19	265.86	42.5	229.70	27.75	149.98
	Roundup Pro	524-475-ZA & ZB	510.75	1.170	41.000	2041.43	12.00	47.96	36.63	146.41				

Contra Costa County Public Works (continued)

	Name of Product Applied	EPA or Calif. Registration #	Amt Used FY 00-01	Specific Gravity	% A. I.	Total Lbs A.I. Used FY 00-01	Amt Used	Total Lbs A.I.	Amt Used	Total Lbs A.I.	Amt Used	Total Lbs A.I.	Amt Used	Total Lbs A.I.
							FY 14-15	Used 14-15	FY 15-16	Used 15-16	FY 16-17	Used 16-17	FY 17-18	Used 17-18
							(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)
Glyphosate, isopropylamine salt	Roundup Pro Conc.	524-529	0.00	1.199	50.200		240.75	1206.57	238.63	1195.95	280.13	1403.93	192.89	966.71
Imazapyr, isopropylamine salt	Stalker	241-398	5.63	1.050	27.600	13.58								
Adjuvant	Silwet L-77	36208-50025	1.70	1.007	100.000	14.26								
Adjuvant	Smoke	5905-50104-AA		1.160	56.400					3.25	17.71			
Oryzalin	Surflan A.S.	62719-113	14.25	1.188	40.400	56.97								
Oryzalin	Surflan A.S.	70506-44	0.00	1.236	40.400		12.00	49.92						
Adjuvant/Surfactant	Surphtac	68891-50001-AA	39.63	1.118	53.400	197.06								
Adjuvant/Surfactant	Surphtac	11656-50093	0.00	1.180	53.400		20.81	109.23	11.56	60.68				
Adjuvant/Surfactant	Surphtac	34704-50086		1.096	33.000				9.56	28.80	23.19	69.87	0.50	1.51
Clopyralid	Transline	62719-259	22.50	1.161	40.900	89.00								
Adjuvant	Unfoamer	34704-50062-AA		1.000	12.500		0.5	0.52	0.13	0.14				
	Vanquish	55947-46	230.00	1.250	56.800	1360.29								
Dicamba, diglycolamine salt	Vanquish	228-397	0.00	1.250	56.800		24.56	145.26	7.5	44.36				
Adjuvant	Weather Gard Complete	34704-50056-AA		1.010	100.000								8.25	69.41
	Weedar 64	71368-1-264	526.75	1.160	38.900	1979.96								
	Dry Materials		(pounds)				Amt used x %AI	(pounds)		(pounds)		(pounds)		(pounds)
Dithiopyr	Dimension Ultra 40 WP	62719-445	0.00	N/A	40.000				3.75	1.50				
	Direx 80DF	352-508-1812	2875.00	N/A	80.000	2300.00								
	Endurance	55947-43	1513.00	N/A	65.000	983.45								
Isoxaben	Gallery 75DF	62719-145	54.00	N/A	75.000	40.50	48.50	36.38						
	Gallery SC	62719-658 AA		N/A	45.450		13.00	5.91	452.50	205.66	60.00	27.27	11.25	5.11
Sulfometuron methyl	Oust	352-401	27.38	N/A	75.000	20.53								
	Predict	55947-78	495.00	N/A	78.600	389.07								
Prodiamine	Resolute 65WG	100-834-ZE		N/A	65.000				148.00	96.20	95.00	61.75	80.00	52.00
	Ronstar 50WSP	264-538	120.00	N/A	50.000	60.00								
	Simtrol 90DF	35915-12-60063	430.00	N/A	90.000	387.00								
Tebuthiuron	Spike 80DF	62719-107	60.00	N/A	80.000	48.00			24.00	19.20				
Chlorsulfuron	Telar	352-404	25.38	N/A	75.000	19.031								
	TOTAL:					16590.97		4780.08		4607.39		4320.83		3472.69
	"Bad Actors" w/May 2013 changes					5764.53		1020.03		779.00		898.36		621.78

Contra Costa County Public Works, Special Districts

Name of Product Applied	EPA or Calif. Reg #	Amt Used FY 07-08 & before	Specific Gravity	% A.I.	Total Lbs A.I. Used FY 07-08 & before	Amt Used FY 14-15	Total Lbs A.I. Used 14-15	Amt Used FY 15-16	Total Lbs A.I. Used 15-16	Amt Used FY 16-17	Total Lbs A.I. Used 16-17	Amt Used FY 17-18	Total Lbs A.I. Used 17-18
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Dry Materials			(pounds)			Amt used x % AI	(pounds)		(pounds)		(pounds)		(pounds)
Diphacinone	Diphacinone Treated Grain Rodent Bait	10965-50001-ZA	no data	N/A	0.005	no data	29.00	0.00145	1.00	0.00005	10.00	0.00050	
Diphacinone	Eaton's Answer	56-57	no data	N/A	0.005	no data	16.00	0.00080	17.00	0.00085	5.00	0.00025	
Diphacinone	Eaton's Bait Blocks	56-42	no data	N/A	0.005	no data	8.50	0.00043	9.50	0.00048	3.00	0.00015	
Diphacinone	Gopher Getter Type 2 AG Bait	36029-23	no data	N/A	0.005	no data							
Diphacinone	Gopher Getter Type 2 AG Bait	36029-24	no data	N/A	0.005	no data							
Diphacinone	P.C.Q. Pelleted Rodent Bait	12455-50003-AA	no data	N/A	0.010	no data							
Aluminum phosphide	Weevil-cide	70506-13	no data	N/A	60.000	no data							
TOTAL								0.00268		0.00138		0.00090	0.00
							TOTAL Oz.	0.04 oz	0.02	0.01	0.00		
							"Bad Actors" w/May 2013 changes	0.00	0.00	0.00	0.00		

Contra Costa County Department of Agriculture

Gal. used x 8.33 lbs/gal H2O x sp. Grav. x %AI

	Name of Product Applied	EPA or Calif. Registration #	Amt Used FY 00-01	Specific Gravity	% A. I.	Total Lbs A.I. Used FY 00-01	Amt Used FY 14-15	Total Lbs A.I. Used 14-15	Amt Used FY 15-16	Total Lbs A.I. Used 15-16	Amt Used FY 16-17	Total Lbs A.I. Used 16-17	Amt Used FY 17-18	Total Lbs A.I. Used 17-18
Liquid Materials						(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)
glyphosate	Aquamaster	524-343		1.205	53.80									
Dicamba & 2,4 D	Banvel	55947-1	14.91	1.211	48.20	72.51								
	2,4-D	34704-5	5.50	1.163	46.50	24.78								
	Bivert	2935-50157-AA	0.93	0.790	100.00	6.12								
	Carbaryl ("7")	54705-4	7.95	1.100	41.20	30.01								
dicamba, diglycolamine salt	Clarity	7969-137	0.00	1.250	58.10		14.76	89.29	2.55	15.43	1.38	8.35	7.87	47.61
Triclopyr, butoxyethyl ester	Garlon 4 Ultra	62719-527		1.110	60.45				8.85	49.47	8.44	47.17	1	5.59
Triclopyr, butoxyethyl ester	Garlon 4	464-554	2.50	1.082	61.60	13.88								
imazapyr isopropylamine salt	Habitat	241-426	0.00	1.068	28.70	0.00								
surfactant	Hasten	2935-50160		0.900	100.00									
Drift retardant--oils	In Place	2935-50169		0.880	100.00		0.41	2.98					2.25	16.49
Aminopyralid, trisopropanolammonium salt	Milestone	62719-519	0.00	1.140	40.60		3.13	12.07	0.98	3.78	0.62	2.39	2.23	8.60
surfactant	Pro-Tron	71058-50008-AA		0.984	95.00		4.93	38.39	0.11	0.86	1.11	8.64	1.8	14.02
Adjuvant	R-11	2935-50142-AA	51.00	1.020	90.00	389.99								
Glyphosate, isopropylamine salt	Rodeo	524-343	2.50	1.205	53.80	13.50								
Glyphosate, isopropylamine salt	Roundup Pro	524-475	69.14	1.170	41.00	276.35								
Glyphosate, isopropylamine salt	Roundup Pro Conc.	524-529		1.199	50.20		1.69	8.47	1.09	5.47				
imazapyr isopropylamine salt	Stalker	241-398		1.060	27.60		0.0004	0.001						
Picloram potassium salt	Tordon 22K	464-323	1.53	1.140	24.40	3.55								
Clopyralid, monoethanolamine salt	Transline	62719-259	70.28	1.161	40.90	277.99				0.01	0.04			
dicamba, diglycolamine salt	Vanquish	55947-46	50.59	1.250	56.80	299.20								

	Dry Materials		(pounds)			Amt . Used x %AI	(pounds)		(pounds)		(pounds)		(pounds)	
Diphacinone	Diphacinone .005%	10965-50001-ZA	725.00	N/A	0.005	0.04	260	0.013	731.00	0.03655	236.00	0.0118	620.00	0.031
Diphacinone	Diphacinone .01%	10965-50003-ZA	15667.30	N/A	0.01	1.57	27109	2.71	11888.50	1.18885	11389.00	1.1389	18665.00	1.867
Sodium nitrate, charcoal	Gas Cartridge	56228-2	0.00	N/A	81.00									
Imidacloprid	Merit 75WSP	3125-439	13.58	N/A	75.00	10.19								
Chlorsulfuron	Telar	352-522	0.00	N/A	75.00		1.05	0.79						
Picloram potassium salt	Tordon 10K	464-320	8.56	N/A	11.60	0.99								
Aluminum phosphide	Weevil-cide	70506-13	0.00	N/A	60.00					0.66	0.396			
						TOTAL:	1420.66		154.72		76.22		68.14	94.21
"Bad Actors" w/May 2013 changes							131.84		0.79		0.00		0.40	0.00

Contra Costa County Public Works - Grounds

Gal. used x 8.33 lbs/gal H2O x sp. Grav. x %AI													
Name of Product Applied	EPA or Calif. Registration #	Amt Used FY 00-01	Specific Gravity	% A. I.	Total Lbs A.I. Used FY 00-01	Amt Used FY 14-15	Total Lbs A.I. Used 14-15	Amt Used FY 15-16	Total Lbs A.I. Used 15-16	Amt Used FY 16-17	Total Lbs A.I. Used 16-17	Amt Used FY 17-18	Total Lbs A.I. Used 17-18
<i>Liquid Materials</i>					(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)
Clethodim	Arrow 2EC	66222-60	0.970	26.40				0.06	0.13	0.03	0.06		
Adjuvant	Crop Oil (Monterey Herbicide Helper)	54705-50001-AA	0.900	100.00									
Fluazifop-P-butyl	Fusilade II	100-1084	0.980	24.50									
Goal	707-174	12.09	0.990	19.40	19.34								
Adjuvant	Magnify	17545-50018	1.220	51.50		0.01	0.05					0.07	0.37
	Maintain A	400-396-AA	1.000	0.30									
Adjuvant	No Foam A (Monterey)	54705-50004-AA	1.050	90.00		0.22	1.73	0.003	0.02	0.03	0.24		
Adjuvant	No Foam A	1050775-50015-AA	1.050	90.00				0.0155	0.12				
	NuFarm Polaris	228-534-AA	1.057	27.70		0.04	0.10			0.08	0.20	0.109	0.27
Glyphosate isopropylamine salt	RangerPro	524-517-ZB	1.169	41.00				14.62	58.37				
	Roundup Pro	524-445-ZB	1.020	41.00	156.00								
Glyphosate isopropylamine salt	Roundup Pro Conc.	524-529	1.199	50.20						39.13	196.19	59.32	297.42
Glyphosate potassium salt	Roundup Promax	524-579	1.356	48.70		56.51	310.86	55.28	304.09	16.13	88.73		
	Triclopyr 4EC	81927-11-AA	1.100	61.60		0.25	1.41						
Triclopyr BEE	Turflon	62719-258	1.060	61.60	1.96								
	Turflon Ester	17545-8-AA	1.08	60.45		0.003	0.02						
Dry Materials					(pounds)	(pounds)	(pounds)	(pounds)	(pounds)	(pounds)	(pounds)	(pounds)	(pounds)
Isoxaben	Gallery 75 DF	62719-145-AA	N/A	75.00	97.08	18.38	13.79	80.00	60.00	11.78	8.84	40.80	30.60
Dithiopyr	Dithiopyr 40 WSB	73220-13	N/A	0.125 lbs ai/5 oz		30 oz (6 bags)	0.75	5 oz (1 bag)	0.125				
Flumioxazin	Payload	59639-120-ZA	N/A	51.00		3.06	1.56	1.92	0.98	3.33	1.70	4.10	2.09
	Orthene	59639-88	N/A	75.00	0.52								
Sulfometuron methyl	Oust	352-401	N/A	75.00	3.85								
	Quali-Pro Dithiopyr	66222-213-AA	N/A	40.00						0.63	0.25	2.81	1.12
Oxadiazon	Ronstar WP	264-538	N/A	50.00	648.63								
Halosulfuron methyl	Sedgehammer	81880-1-10163	N/A	75.00				0.007	0.005				
Halosulfuron methyl	Sedgehammer	81880-24-10163	N/A	5.00		0.03	0.0015	0.04	0.002				
Flumioxazin	SureGuard	59639-120	N/A	51.00		15.69	8.00	17.33	8.84	13.76	7.02	10.19	5.20
TOTAL					927.37	338.26	432.68	303.22	337.06				
"Bad Actors" w/May 2013 changes					649.14	0.00	0.00	0.00	0.00				

CCC Public Works - Facilities

	Name of Product Applied	EPA or Calif. Registration #	Amt Used FY 07-08	Specific Gravity	% A. I.	Total oz. A.I Used FY 07-08	Amt Used FY 14-15	Total OZ. A.I. Used 14-15	Amt Used FY 15-16	Total OZ. A.I. Used 15-16	Amt Used FY 16-17	Total OZ. A.I. Used 16-17	Amt Used FY 17-18	Total OZ. A.I. Used 17-18
	<i>Liquid Materials</i>		(fl. ounces)				(fl. oz.)	Oz. by Wt.	(fl. Oz.)	Oz. by Wt.	(fl. Oz.)	Oz. by Wt.	(fl. Oz.)	Oz. by Wt.
Indoxacarb	Advion Ant Bait Arena	100-1485		1.09	0.10				252 ea (Net wt of Arena is 0.07 oz)	0.02	112 ea (Net wt of Arena is 0.07 oz)	0.00889	30 ea (Net wt of Arena is 0.07 oz)	0.002
Indoxacarb	Advion Ant Gel	100-1498		1.2	0.05			143.67	0.08965	202.70	0.12648	165.70	0.103	
Indoxacarb	Advion Cockroach Bait Arena	100-1486		1.09	0.50				41 ea (Net wt of Arena is 0.07 oz)	0.01627	10 ea (Net wt of Arena is 0.07 oz)	0.00397	1 ea (Net wt of Arena is 0.07 oz)	0.0004
Indoxacarb	Advion Cockroach Gel Bait	100-1484		1.123	0.60			14.61	0.10238	60.10	0.42115	41.44	0.290	
Chlorantraniliprole	Altriset	100-1503		1.094	18.4		2.00	0.419						
Chlorantraniliprole	Altriset (DuPont)	352-829		1.094	18.4					7.00	1.46543			
Abamectin	Avert Cockroach Bait Station	499-467		1.065	0.05						2 ea (Net wt of Station is 0.52 oz)	0.00058		
Cedar oil	Best Yet Insect Control Solution Cedarcide	Exempt 25b material		1.00	10.00		128.00	12.800	16.00	1.66400	76.00	7.90400	172.00	17.888
Cedar oil	Cedarcide PCO Choice Concentrate	Exempt 25b material		1.00	85.00				10.00	8.84000	5.08	4.49072	3.20	2.829
White pepper, mineral oil	DeTour for Rodents	Exempt		0.864	3.00		166.00	4.475			8	0.21565		
Sodium Tetraborate decahydrate	Doninant Liquid Ant Bait	64405-24		1	1.00						20.00	0.20800	673.00	6.99920
Botanical oils: thyme, rosemary 2 phenethyl propionate	Eco Via	Exempt 25b material		0.95	42.00								6.00	2.490
Botanical oils: peppermint, rosemary, geraniol	Essentria IC3	Exempt 25b material		0.985	17.00								132.00	22.988
Oil of black pepper	Havahart Critter Ridder	50932-10		1.001	0.48		624	2.9952	458	2.1984	1371	6.5808	278.00	1.389
Sodium Tetraborate Decahydrate (Borax)	Intice Thiquid Ant Bait	73079-7		1.33	1.00		3554.00	49.159			1952.3	27.00421	3861.8	53.416
Fipronil	Maxforce Ant KillerBait Gel	64248-21		1.05	0.00						1.12	0.00001		
Fipronil	Maxforce FC Magnum			1.14	0.05						1.05	0.00062		
Clothianidin	Maxforce Impact Roach gel	432-1531		1.1	1.00								33.5	0.383
Imidacloprid	Maxforce Quantum Ant Bait	432-1506		1.43	0.03		27.90	0.012	31.71	0.01415	20.2	0.00901	8.09	0.004

CCC Public Works - Facilities, cont.

	Name of Product Applied	EPA or Calif. Registration #	Amt Used FY 07-08 (fl. ounces)	Specific Gravity	% A. I.	Total oz. A.I. Used FY 07-08	Amt Used FY 14-15 (fl. oz.)	Total OZ. A.I. Used 14-15 (Oz. by Wt.)	Amt Used FY 15-16 (fl. Oz.)	Total OZ. A.I. Used 15-16 (Oz. by Wt.)	Amt Used FY 16-17 (fl. Oz.)	Total OZ. A.I. Used 16-17 (Oz. by Wt.)	Amt Used FY 17-18 (fl. Oz.)	Total OZ. A.I. Used 17-18 (Oz. by Wt.)
Methyl Ethoxy Pyridine	Nyguard IGR Concentrate	1021-1603		0.939	10.00						0.6	0.05859		
Methyl Ethoxy Pyridine	Nyguard IGR Concentrate	1021-1620		0.854	1.30								0.10	0.001
Methyl Ethoxy Pyridine	Nylar (Archer)	100-1111		0.847	1.30						3	0.03435		
Methyl Ethoxy Pyridine	Nylar IGR	11715-307-57076		0.8	1.30								1.00	0.011
sodium lauryl sulfate	Oh Yeah	Exempt		1	7.00		2222	161.762	78	5.67840	865.5	63.00840	70	5.096
coyote & fox urine	Shake Away: Fox/Coyote	80917-5		2.70	5.00						5.00	0.70200		
Imidacloprid	Temprid Ready Spray Insecticide	432-1527		1.00	0.05						10.00	0.00520		
Cyfluthrin				1.00	0.03						10.00	0.00260		
Fipronil	Termidor SC (termites)	7969-210		1.06	9.10						3.20	0.32102		
Sodium Tetraborate Decahydrate (Borax)	Terro PCO Bait stations	149-8-64405		1.00	5.40		135-0.36 oz stations	2.6244	170-0.36 oz stations	3.43699	149-0.36 oz stations	3.01242		
Sodium Tetraborate Decahydrate (Borax)	Terro PCO Liquid Ant Bait	149-8-64405		1.00	5.40						19.44	1.09175		

	Dry Materials		(ounces)		% A.I.		OZ. by Wt.		OZ. by Wt.		OZ. by Wt.		OZ. by Wt.	
Dinotefuran	Alpine Dust	499-527			0.25						0.11	0.0003		
Diatomaceous earth					95.00						0.11	0.1045		
Dinotefuran	Alpine WSG	499-561			0.40								0.353	0.0014
Incoxacarb	Advion Fire Ant Bait	100-1481			0.045				3.17	0.0014			0.49	0.0002
Incoxacarb	Advion Insect Granule	352-651			0.22						9.64	0.0212		
Amorphous silica gel	Cimexa	73079-12			100.00						5.12	5.1200	3.20	3.200
Amorphous silicon dioxide	Concern Diatomaceous Earth	73729-1-50932			85.00		0.23	0.1955	0.79	0.6715	1.29	1.0965		
Sodium nitrate, sulfur, charcoal	Giant Destroyer gas cartridge	1055-1			97.00									
Orthoboric acid	Niban FG Mother Earth Granules Niban granular	64405-2 499-515 64405-2	3813.7600		5.00	190.69	3144.5	157.225	6038.5	301.925	2886.5	144.3250	940.50	47.025
						OZ of A.I	335.55	393.414	485.859	267.343	164.117			
						LBs of A.I.	20.97	24.59	30.37	16.71	10.26			

OZ of BA 0.41 0.00 0.0582 0.0006 0.00



Contra Costa County Board of Supervisors

Subcommittee Report

TRANSPORTATION, WATER & INFRASTRUCTURE COMMITTEE

9.

Meeting Date: 02/11/2019

Subject: RECEIVE Review of SunPower/Contra Costa County PV Portfolio Summary Technical and Economic Pro-Forma.

Submitted For: TRANSPORTATION, WATER & INFRASTRUCTURE COMMITTEE,

Department: Conservation & Development

Referral No.:

Referral Name: N/A - TWIC is considering the addition of a referral which would authorize their monitoring of this issue.

Presenter: Frank Di Massa (925)957-2473

Contact: Frank Di Massa
(925)957-2473

Referral History:

This item is being brought to the TWIC for the first time. Conversations between Public Works and TWIC staff resulted in the staff recommendation, considered earlier on the February TWIC Agenda, that the monitoring of the County's conversion to solar/distributed energy be taken up by TWIC.

Referral Update:

Background

In December, 2017, the BOS approved Public Works to submit Interconnection Applications to PG&E for the installation of solar PV systems under advantageous grand-fathered Time-of-Use rates. On July 10, 2018 the BOS approved Public Works Distributed Energy Resources (DER) plan which included permission to issue an RFQ to select a solar partner to install PV systems under a Power Purchase Agreement in accordance with California Contracting Code 4217.

Through the RFQ process Public Works selected SunPower Corporation. SunPower submitted the above-mentioned Interconnection Applications to PG&E for selected County Facilities and has developed a PV Portfolio Summary which will be presented to TWIC with a request to oversee the process of negotiating a Power Purchase Agreement for the implementation of the solar PV systems in County facilities.

As part of the Board approved Distributed Energy Resources Program Plan, Public Works is pursuing the installation of solar PV systems at selected County-owned facilities through a Power Purchase Agreement with SunPower Corporation. SunPower, selected by the County through an RFQ process, has delivered the Contra Costa County PV Portfolio Summary, a financial pro-forma delineating the power production and cost savings from technically feasible solar energy systems at County-owned facilities.

Public Works requests that the TWIC receive information on the PV Project Proposal and agree to oversee the development of the associated Power Purchase Agreement.

Recommendation(s)/Next Step(s):

DIRECT staff to process of the review and vetting of the Power Purchase Agreement for Solar Photovoltaics project through TWIC.

Fiscal Impact (if any):

No Fiscal Impact

Attachments

Contra Costa County Project Overview Updated 12-19-2018



Contra Costa County
PV Portfolio Summary

SUNPOWER®

Kevin Johnston, Yuan Zhang, Ian Creelman
December 2018

Project Executive Summary –

Project

- **3.71 MW** solar project across 9 sites
- **Power Purchase Agreement** (PPA) financing
 - Fixed 25 Year PPA Rate Below Utility Market Rate
- **2.5 MW** potential energy storage system with pending Option S tariff
 - Provides increased financial savings and energy security

Benefits

- **~\$11 million** in net utility savings over 25 Yrs (Solar Only)
- **~\$6.6 million** in Net Present value over 25 Yrs (Solar Only)
- **55%** Average Facility Energy Load Offset
- **Over 360,000 metric tons of GHG offsets** over 25 Yrs

Timeline

- | | |
|---|------------------|
| • County Project Approval | Jan. 2019 |
| • SGIP Step 2 | Jan. 2019 |
| • Option S Tariff Availability | Dec. 2018 |
| • Engineering / Permitting | June 2019 |
| • NEM 3 Review (County retains NEM 1 and 2) | Oct. 2019 |
| • Investment Tax Credit Step Down | Jan. 2020 |

Financial Summary

PPA for Base (solar) and Alternate (solar+storage)

Scenario	System Size (kWp)	Energy Production (kWh)	PPA Rate (\$/kWh) 25 yr fixed rate	Year 1 Net Savings	First 5 Yrs Net Savings (\$)	25-Year Nominal Net Savings (\$)	25-Year NPV of Savings (\$)	NPV/Watt (\$/W)
PPA Base Case (Solar Only)	3,715 kW Solar	5,998,109	\$0.1315	\$219,492	\$731,319	\$11,041,612	\$6,834,728	\$1.84
PPA Alternate (Solar + Storage)	3,715 kW Solar 2,500 kW Storage	5,998,109	\$0.1620*	\$295,288	\$1,194,968	\$13,158,636	\$8,454,684	\$2.28

The pending Option S utility tariff will add significant savings for the County's energy project. SUNPOWER is actively lobbying to optimize and expedite the launch of Option S. Without the Option S tariff the County still has a fantastic solar PV opportunity.

* \$0.0306 PPA Rate Adder in Years 1 thru 15 to pay for energy storage system (ESS). PPA rate drops to \$0.1315/kWh for years 16 thru 25

Assumptions

- 25 Year Fixed Rate PPA Term
- 25 year 90% Performance Guarantee (PeGu)
- Commercial Operation Date - late 2019
- Discount rate 3%
- Utility rate escalator 3%

PPA Financial Summary – Base Case (solar only)

Site	Solar System Size (kWp)	Energy Production (kWh)	Energy Storage Size (kW)	Year 1 Net Savings (\$) Solar	25-Year Nominal Net Savings (\$M) Solar
1000 WARD ST	323	507,596	500	\$18,575	\$934,407
30 DOUGLAS DR	987	1,637,911	500	\$59,937	\$3,015,147
50 DOUGLAS DR	355	572,039	500	\$20,933	\$1,053,038
30 Muir	166	256,703	0	\$9,394	\$472,551
2530 ARNOLD DR	526	780,534	500	\$28,562	\$1,436,844
4549 DELTA FAIR BLVD	212	339,968	0	\$12,441	\$625,830
597 CENTER AVE	116	175,542	0	\$6,424	\$323,146
595 CENTER AVE	312	532,976	500	\$19,503	\$981,127
4545 DELTA FAIR BLVD	437	720,968	0	\$26,383	\$1,327,193
1305 MACDONALD AVE	282	473,873	0	\$17,341	\$872,328
Total	3,715	5,998,109	2,500	219,492	\$11,041,612

Assumptions

- 25 year Operations & Maintenance and 90% Performance Guarantee (PeGu)
- Commercial Operation Date - late 2019
- Discount rate 3%

PPA Financial Summary – Alternate Case Solar + Storage Upside

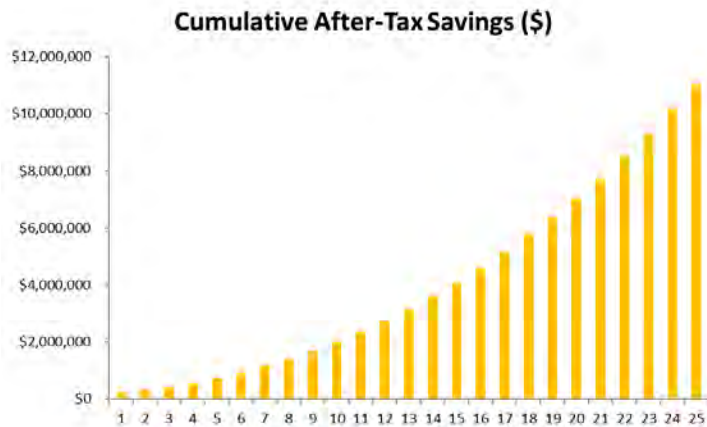
Site	Solar System Size (kWp)	Energy Production (kWh)	Energy Storage Size (kW)	Year 1 Net Savings (\$)	25-Year Nominal Net Savings (\$M)
1000 WARD ST	323	507,596	500	\$41,340	\$1,113,562
30 DOUGLAS DR	987	1,637,911	500	\$80,860	\$3,593,246
50 DOUGLAS DR	355	572,039	500	\$33,766	\$1,254,938
30 Muir	166	256,703	0	\$9,394	\$563,154
2530 ARNOLD DR	526	780,534	500	\$37,944	\$1,712,332
4549 DELTA FAIR BLVD	212	339,968	0	\$12,441	\$745,822
597 CENTER AVE	116	175,542	0	\$6,424	\$385,104
595 CENTER AVE	312	532,976	500	\$37,494	\$1,169,240
4545 DELTA FAIR BLVD	437	720,968	0	\$26,383	\$1,581,658
1305 MACDONALD AVE	282	473,873	0	\$17,341	\$1,039,581
Total	3,715	5,998,109	2,500	295,288	\$13,158,636

Assumptions

- \$0.0306/kWh Storage PPA Adder for Year 1-15
- 25 year Operations & Maintenance and 90% Performance Guarantee (PeGu)
- Commercial Operation Date - late 2019
- Discount rate 3%

PPA Portfolio Pro-forma – Solar Only Base Case

Project Economics	
System Size (kWp)	3,715
25-Year / 0% PPA Rate	\$0.1315
Cumulative Net Savings (25yr)	\$11,-41,612
25 Year Net Present Value (NPV)	\$6,834,728



Year	Savings			Costs				Net Savings (\$)	Cumulative Net Savings (\$)
	Utility Bill No Solar (\$)	Solar Energy Generated (kWh)	Avoided Cost (\$/kWh)	Residual Utility Bill (\$)	Annual PPA Rate (\$/kWh)	PPA Payment (\$)*	Hybrid Bill Utility + Solar (\$)		
1	\$1,797,092	5,998,109	\$0.1680	\$789,133	\$0.1315	\$788,467	\$1,577,600	\$219,492	\$219,492
2	\$1,851,005	5,983,114	\$0.1462	\$976,149	\$0.1315	\$786,496	\$1,762,644	\$88,360	\$307,852
3	\$1,906,535	5,968,156	\$0.1506	\$1,007,686	\$0.1315	\$784,530	\$1,792,215	\$114,320	\$422,172
4	\$1,963,731	5,953,236	\$0.1551	\$1,040,231	\$0.1315	\$782,568	\$1,822,799	\$140,932	\$563,104
5	\$2,022,643	5,938,353	\$0.1598	\$1,073,816	\$0.1315	\$780,612	\$1,854,428	\$168,215	\$731,319
6	\$2,083,322	5,923,507	\$0.1646	\$1,108,474	\$0.1315	\$778,660	\$1,887,134	\$196,188	\$927,507
7	\$2,145,822	5,908,698	\$0.1695	\$1,144,238	\$0.1315	\$776,714	\$1,920,952	\$224,870	\$1,152,378
8	\$2,210,197	5,893,927	\$0.1746	\$1,181,144	\$0.1315	\$774,772	\$1,955,916	\$254,280	\$1,406,658
9	\$2,276,502	5,879,192	\$0.1798	\$1,219,228	\$0.1315	\$772,835	\$1,992,063	\$284,439	\$1,691,097
10	\$2,344,797	5,864,494	\$0.1852	\$1,258,528	\$0.1315	\$770,903	\$2,029,430	\$315,367	\$2,006,464
11	\$2,415,141	5,849,833	\$0.1908	\$1,299,081	\$0.1315	\$768,976	\$2,068,056	\$347,085	\$2,353,550
12	\$2,487,596	5,835,208	\$0.1965	\$1,340,927	\$0.1315	\$767,053	\$2,107,980	\$379,616	\$2,733,165
13	\$2,562,224	5,820,620	\$0.2024	\$1,384,107	\$0.1315	\$765,136	\$2,149,243	\$412,981	\$3,146,146
14	\$2,639,090	5,806,068	\$0.2085	\$1,428,664	\$0.1315	\$763,223	\$2,191,887	\$447,203	\$3,593,349
15	\$2,718,263	5,791,553	\$0.2147	\$1,474,641	\$0.1315	\$761,315	\$2,235,956	\$482,307	\$4,075,656
16	\$2,799,811	5,777,074	\$0.2212	\$1,522,083	\$0.1315	\$759,411	\$2,281,494	\$518,317	\$4,593,973
17	\$2,883,805	5,762,632	\$0.2278	\$1,571,035	\$0.1315	\$757,513	\$2,328,548	\$555,257	\$5,149,230
18	\$2,970,319	5,748,225	\$0.2346	\$1,621,547	\$0.1315	\$755,619	\$2,377,166	\$593,154	\$5,742,384
19	\$3,059,429	5,733,854	\$0.2417	\$1,673,666	\$0.1315	\$753,730	\$2,427,396	\$632,033	\$6,374,417
20	\$3,151,212	5,719,520	\$0.2489	\$1,727,444	\$0.1315	\$751,846	\$2,479,290	\$671,922	\$7,046,338
21	\$3,245,748	5,705,221	\$0.2564	\$1,782,934	\$0.1315	\$749,966	\$2,532,900	\$712,848	\$7,759,186
22	\$3,343,121	5,690,958	\$0.2641	\$1,840,189	\$0.1315	\$748,091	\$2,588,280	\$754,841	\$8,514,027
23	\$3,443,414	5,676,731	\$0.2720	\$1,899,264	\$0.1315	\$746,221	\$2,645,485	\$797,929	\$9,311,956
24	\$3,546,717	5,662,539	\$0.2802	\$1,960,219	\$0.1315	\$744,355	\$2,704,574	\$842,143	\$10,154,099
25	\$3,653,118	5,648,382	\$0.2886	\$2,023,110	\$0.1315	\$742,494	\$2,765,605	\$887,513	\$11,041,612
Total	\$65,520,653	\$145,539,204		\$35,347,537		\$19,131,504	\$54,479,041	\$11,041,612	
NPV								\$6,834,728	

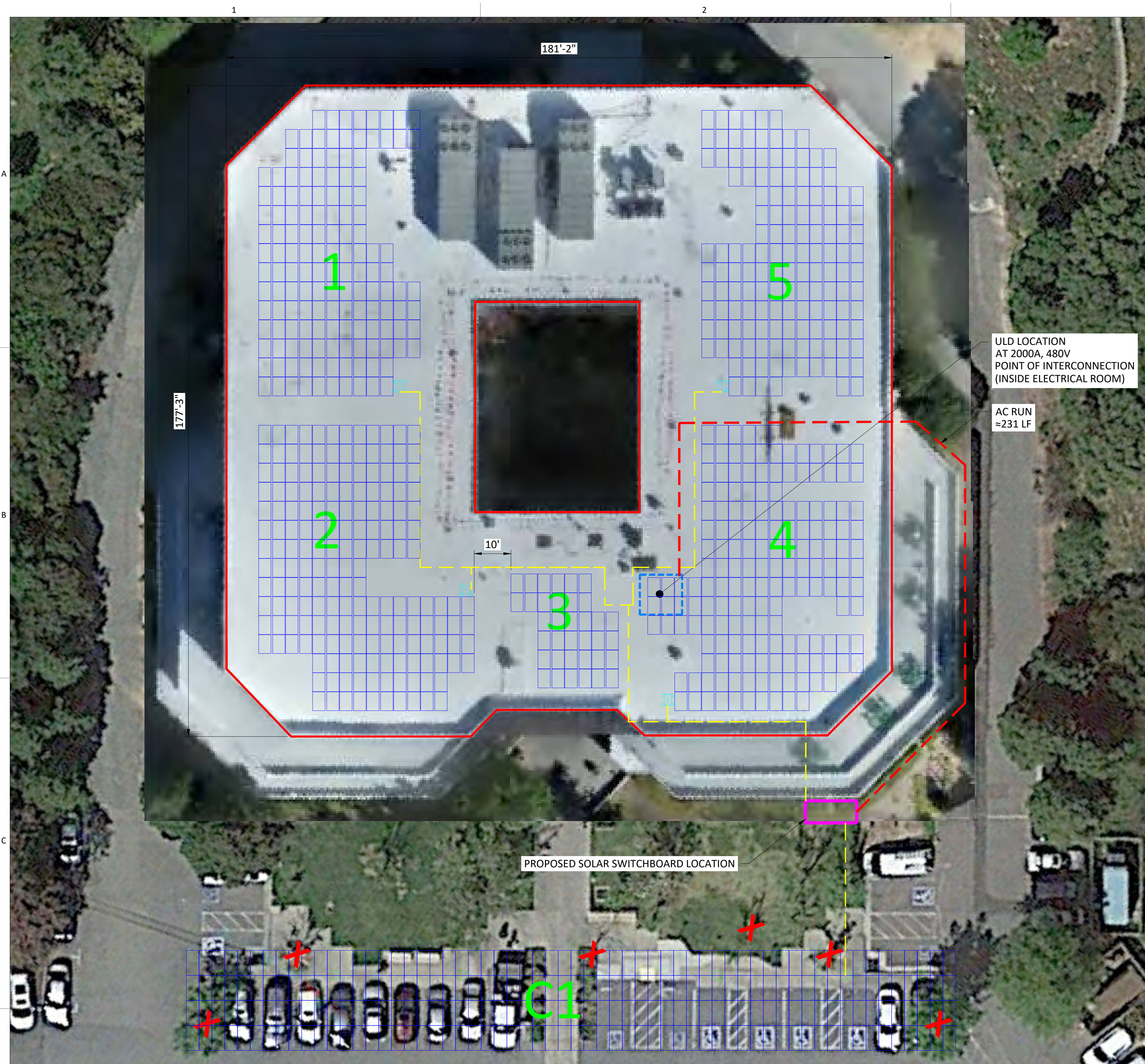
PPA Portfolio Pro-forma - Solar + Storage Upside

Solar + Storage Economics	
System Size (kWp)	3,715
Storage Size (kWp)	2,500
25-Year / 0% PPA Rate	\$0.1315
Storage PPA Adder	\$0.0306
Cumulative Net Savings (25yr)	\$13,158,636
25 Year Net Present Value (NPV)	\$8,454,684

Solar Only Economics	
System Size (kWp)	3,715
25-Year / 0% PPA Rate	\$0.1315
Cumulative Net Savings (25yr)	\$11,-41,612
25 Year Net Present Value (NPV)	\$6,834,728

Year	Savings				Costs					Solar + Storage		Solar Only	
	Utility Bill No Solar (\$)	Solar Energy Generated (kWh)	Avoided Cost (\$/kWh)	Savings from Energy Storage	Residual Utility Bill (\$)	Annual PPA Rate (\$/kWh)	PPA Payment (\$)*	Storage Payment (\$)	Hybrid Bill Utility + Solar (\$)	Net Savings (\$)	Cumulative Net Savings (\$)	Net Savings (\$)	Cumulative Net Savings (\$)
1	\$1,797,092	5,998,109	\$0.1680	\$259,101	\$530,032	\$0.1315	\$788,467	\$183,305	\$1,501,804	\$295,288	\$295,288	\$219,492	\$219,492
2	\$1,851,005	5,983,114	\$0.1462	\$266,874	\$709,275	\$0.1315	\$786,496	\$182,847	\$1,678,617	\$172,388	\$467,676	\$88,360	\$307,852
3	\$1,906,535	5,968,156	\$0.1506	\$274,880	\$732,806	\$0.1315	\$784,530	\$182,390	\$1,699,725	\$206,810	\$674,486	\$114,320	\$422,172
4	\$1,963,731	5,953,236	\$0.1551	\$283,127	\$757,104	\$0.1315	\$782,568	\$181,934	\$1,721,606	\$242,125	\$916,611	\$140,932	\$563,104
5	\$2,022,643	5,938,353	\$0.1598	\$291,620	\$782,195	\$0.1315	\$780,612	\$181,479	\$1,744,286	\$278,357	\$1,194,968	\$168,215	\$731,319
6	\$2,083,322	5,923,507	\$0.1646	\$300,369	\$808,104	\$0.1315	\$778,660	\$181,025	\$1,767,790	\$315,532	\$1,510,501	\$196,188	\$927,507
7	\$2,145,822	5,908,698	\$0.1695	\$309,380	\$834,858	\$0.1315	\$776,714	\$180,572	\$1,792,144	\$353,678	\$1,864,179	\$224,870	\$1,152,378
8	\$2,210,197	5,893,927	\$0.1746	\$318,662	\$862,483	\$0.1315	\$774,772	\$180,121	\$1,817,376	\$392,821	\$2,257,000	\$254,280	\$1,406,658
9	\$2,276,502	5,879,192	\$0.1798	\$328,221	\$891,007	\$0.1315	\$772,835	\$179,671	\$1,843,513	\$432,990	\$2,689,989	\$284,439	\$1,691,097
10	\$2,344,797	5,864,494	\$0.1852	\$338,068	\$920,460	\$0.1315	\$770,903	\$179,222	\$1,870,584	\$474,213	\$3,164,203	\$315,367	\$2,006,464
11	\$2,415,141	5,849,833	\$0.1908	\$348,210	\$950,871	\$0.1315	\$768,976	\$178,773	\$1,898,620	\$516,522	\$3,680,725	\$347,085	\$2,353,550
12	\$2,487,596	5,835,208	\$0.1965	\$358,656	\$982,271	\$0.1315	\$767,053	\$178,327	\$1,927,650	\$559,945	\$4,240,670	\$379,616	\$2,733,165
13	\$2,562,224	5,820,620	\$0.2024	\$369,416	\$1,014,691	\$0.1315	\$765,136	\$177,881	\$1,957,708	\$604,516	\$4,845,186	\$412,981	\$3,146,146
14	\$2,639,090	5,806,068	\$0.2085	\$380,499	\$1,048,166	\$0.1315	\$763,223	\$177,436	\$1,988,824	\$650,266	\$5,495,452	\$447,203	\$3,593,349
15	\$2,718,263	5,791,553	\$0.2147	\$391,914	\$1,082,728	\$0.1315	\$761,315	\$176,992	\$2,021,035	\$697,228	\$6,192,680	\$482,307	\$4,075,656
16	\$2,799,811	5,777,074	\$0.2212	\$0	\$1,522,083	\$0.1315	\$759,411	\$0	\$2,281,494	\$518,317	\$6,710,997	\$518,317	\$4,593,973
17	\$2,883,805	5,762,632	\$0.2278	\$0	\$1,571,035	\$0.1315	\$757,513	\$0	\$2,328,548	\$555,257	\$7,266,254	\$555,257	\$5,149,230
18	\$2,970,319	5,748,225	\$0.2346	\$0	\$1,621,547	\$0.1315	\$755,619	\$0	\$2,377,166	\$593,154	\$7,859,408	\$593,154	\$5,742,384
19	\$3,059,429	5,733,854	\$0.2417	\$0	\$1,673,666	\$0.1315	\$753,730	\$0	\$2,427,396	\$632,033	\$8,491,441	\$632,033	\$6,374,417
20	\$3,151,212	5,719,520	\$0.2489	\$0	\$1,727,444	\$0.1315	\$751,846	\$0	\$2,479,290	\$671,922	\$9,163,362	\$671,922	\$7,046,338
21	\$3,245,748	5,705,221	\$0.2564	\$0	\$1,782,934	\$0.1315	\$749,966	\$0	\$2,532,900	\$712,848	\$9,876,210	\$712,848	\$7,759,186
22	\$3,343,121	5,690,958	\$0.2641	\$0	\$1,840,189	\$0.1315	\$748,091	\$0	\$2,588,280	\$754,841	\$10,631,051	\$754,841	\$8,514,027
23	\$3,443,414	5,676,731	\$0.2720	\$0	\$1,899,264	\$0.1315	\$746,221	\$0	\$2,645,485	\$797,929	\$11,428,980	\$797,929	\$9,311,956
24	\$3,546,717	5,662,539	\$0.2802	\$0	\$1,960,219	\$0.1315	\$744,355	\$0	\$2,704,574	\$842,143	\$12,271,123	\$842,143	\$10,154,099
25	\$3,653,118	5,648,382	\$0.2886	\$0	\$2,023,110	\$0.1315	\$742,494	\$0	\$2,765,605	\$887,513	\$13,158,636	\$887,513	\$11,041,612
Total	\$65,520,653	145,539,204			\$30,528,540		\$19,131,504		\$52,362,017	\$13,158,636		\$11,041,612	
NPV										\$8,454,684		\$6,834,728	

Increased Savings w/ Storage
\$2.5M Greater Savings Thru Year 15



- LEGEND:**
- PROPOSED LIGHT POLE REMOVAL
 - ✕ PROPOSED TREE REMOVAL
 - PROPOSED EQUIPMENT PAD
 - PROPOSED POINT OF INTERCONNECTION
 - AC CONDUITS (SSB-POI)
 - AC CONDUITS (SPB-SSB)
 - AC CONDUITS (INV-SPB)

PROJECT SUMMARY

PROJECT SUMMARY	ROOF	CARPORT	TOTAL
TOTAL # OF MODULE	672	240	912
MODULE TYPE	SPR-X22-360-COM	SPR-X21-470-COM	
# OF INVERTER	4	2	6
DC SYSTEM SIZE (KW)	241.92	112.80	354.72
AC SYSTEM SIZE (KW)	224	92	316

STRUCTURAL DESIGN PARAMETERS

WIND SPEED ASCE 7-10 (MPH)	110
EXPOSURE CATEGORY	C
TRANSITIONAL DISTANCE (FT)	
GROUND SNOW LOAD (PSF)	
SPECTRAL RESPONSE (SDS)	1.013
Ss	1.52
S1	0.6
SEISMIC HAZARD LEVEL	2
SITE CLASS	
SEISMIC IMPT. FACTOR (IP)	1.5
OCCUPANCY CATEGORY	II

RACKING TYPE

RACKING TYPE	ROOF A
RACKING TECHNOLOGY	HELIX DUAL-TILT
ANCHOR TYPE	OMG PowerGrip Plus
BALLAST BLOCK WEIGHT (LBS)	14
ROOF MEMBRANE	
SEISMIC OFFSETS FOR UNANCHORED ARRAYS	
MAX ROOF SLOPE	1:12
MIN. OFFSET FROM ROOF EDGE (FT)	15

BUILDING CHARACTERIZATIONS

ROOF HEIGHT (FT)	44
ROOF LENGTH (FT)	181
ROOF WIDTH (FT)	177
PARAPET HEIGHT (FT)	3
SPWR AZIMUTH (DEGREES)	-40
MAX ALLOWABLE PRESSURE (PSF)	12
MAX ALLOWABLE WEIGHT (LBS)	

BALLAST AND ANCHOR SUMMARY

SYSTEM WEIGHT (LBS)	75196
AVERAGE PSF	5.8
MAX PSF	12.0
# BALLAST PER ROOF	2993
# OF ANCHOR PER ROOF	95
# MODULE PER ROOF	672
TOTAL # OF BALLASTS	2993
TOTAL # OF ANCHORS	95
TOTAL # OF MODULES	672



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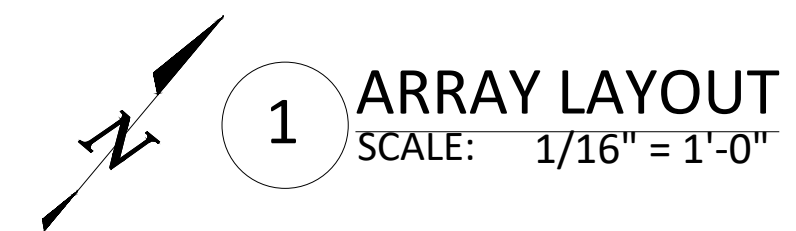


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THE PROPOSED ARRAY LAYOUT SHOWN IS DESIGNED TO FIT EXISTING CONDITIONS AS THEY ARE DESCRIBED ON THIS DRAWING. LAYOUT AND QUANTITIES ARE SUBJECT TO CHANGE BASED ON SUNPOWER VERIFICATION OF ACTUAL SITE CONDITIONS.

TIER 1

- NOTES:**
- 110 MPH WIND ZONE (ASCE 7-10) CATEGORY II, EXPOSURE C.
 - CORROSION RATE: [1.0µm/yr.], [C2: 11%, C3: 99%]
 - METER #10100543591
 - ARRAY SHOWN ON AERIAL IMAGE
 - ARRAY MOUNTING STRUCTURE HELIX CARPORT 1.5
 - STANDARD CANOPY LOW-END CLEARANCE: 13.5' PROVIDED FOR STANDARD VEHICLE
 - BUILDING CODE REQUIRES 20' MIN. CLEARANCE FROM EXISTING BUILDINGS
 - FIRE DEPARTMENT REQUIRES 20' MIN. CLEARANCE ALONG EMERGENCY ACCESS ROUTES
 - TOTAL OF TREES TO BE REMOVED: 6
 - TOTAL OF LIGHT POLE TO BE REMOVED: 0



ARRAY SUMMARY TABLE - ROOF

ARRAY	M60U_121 (18 STR)	M60U_121 (14 STR)	M42U_121 (12 STR)	TOTAL STRINGS	TOTAL #OF MODULE	DC POWER (KW)	AC POWER (KW)	AC-RUN (INV-SSB)
1			1	12	144	51.84	46	220
2	1			15	180	64.8	66	160
3				3	36	12.96		
4		1		14	168	60.48	66	65
5			1	12	144	51.84	46	195
	1	1	2	56	672	241.92	224	

ARRAY SUMMARY TABLE - PFT

CANOPY	LABEL	#MODULE	#STRING	KW (DC)	M42U_121 (12 STR)	KW (AC)	TILT	AZIMUTH CSI	AZIMUTH SPWR	AC RUN (INV-SSB)
C1	4x60	240	24	112.8	2	92	10°	140°	-40°	42

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RICHMOND, CA 94804 USA
(510) 540-0550

CONTRA COSTA COUNTY
50 DOUGLAS DRIVE
1000 WARD ST.
MARTINEZ, CA 94553

ARRAY LAYOUT

ENGINEER'S STAMP

REV	DESIGN #	DATE	DB	CB	RA	DJ
A	D-0091301	08-17-18				

OPPORTUNITY 0001557288

PROJECT ---

0 1/2" 1"

IF BAR IS NOT ONE INCH, DRAWING IS NOT TO SCALE

SHEET **AL1**

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1 ARRAY LAYOUT
SCALE: 1/64" = 1'-0"

NOTES:

- 110 MPH WIND ZONE (ASCE 7-10) CATEGORY II, EXPOSURE C.
- CORROSION RATE: [1.0µm/yr.],[C2: 11%, C3: 99%]
- METER #PG&E 7555R0
- ARRAY SHOWN ON AERIAL IMAGE
- ARRAY MOUNTING STRUCTURE HELIX CARPORT 1.5
- STANDARD CANOPY LOW-END CLEARANCE: 13.5' PROVIDED FOR STANDARD VEHICLE
- BUILDING CODE REQUIRES 20' MIN. CLEARANCE FROM EXISTING BUILDINGS
- FIRE DEPARTMENT REQUIRES 20' MIN. CLEARANCE ALONG EMERGENCY ACCESS ROUTES
- TOTAL OF TREES TO BE REMOVED: 21
- TOTAL OF LIGHT POLE TO BE REMOVED: 6

PANELBOARD - CARPORT	CANOPY	LABEL	#MODULE	#STRING	KW (DC)	M80U_122 (18 STR)	M60U_122 (15 STR)	M42U_122 (12 STR)	M36U_122 (9 STR)	KW (AC)	TILT	AZIMUTH CSI	AZIMUTH SPWR	AC RUN (SPB-SSB)
SPB01	1	6x75	450	45	211.5	1	1	1		195	10°	140°	-40°	318
SPB02	2	6x85	510	51	239.7	2	1		232	256				
SPB03	3	6x95	570	57	267.9	2		1	251.6	192				
SPB04	4	6x95	570	57	267.9	2		1	251.6	42				
			2100	210	987.00	7	2	3	2	930.2				

- LEGEND:**
- PROPOSED LIGHT POLE REMOVAL
 - X PROPOSED TREE REMOVAL
 - PROPOSED EQUIPMENT PAD
 - PROPOSED POINT OF INTERCONNECTION
 - AC CONDUITS (SSB-POI)
 - AC CONDUITS (SPB-SSB)
 - AC CONDUITS (INV-SPB)

PROJECT SUMMARY

PROJECT SUMMARY	CARPORT
TOTAL # OF MODULE	2100
MODULE TYPE	SPR-X21-470-COM
# OF INVERTER	14
DC SYSTEM SIZE (kW)	987.00
AC SYSTEM SIZE (kW)	930.20



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TIER 1

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ENGINEER'S STAMP

CONTRA COSTA COUNTY
30 DOUGLAS DRIVE
 30 DOUGLAS DRIVE
 MARTINEZ, CA 94553

ARRAY LAYOUT

REV	DESIGN #	DATE	DB	CB	RA	DI
A	D-00913100	08-16-18				

OPPORTUNITY 0001557288

PROJECT ---

0 1/2" 1"

IF BAR IS NOT ONE INCH, DRAWING IS NOT TO SCALE

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1 ARRAY LAYOUT
SCALE: 1/32" = 1'-0"

PROJECT SUMMARY	
PROJECT SUMMARY	ROOF
TOTAL # OF MODULE	460
MODULE TYPE	SPR-X22-360-COM
# OF INVERTER	3
DC SYSTEM SIZE (KW)	165.60
AC SYSTEM SIZE (KW)	171.60

STRUCTURAL DESIGN PARAMETERS	
WIND SPEED ASCE 7-10 (MPH)	110
EXPOSURE CATEGORY	C
TRANSITIONAL DISTANCE (FT)	
GROUND SNOW LOAD (PSF)	0
SPECTRAL RESPONSE (SDS)	0.8
S _s	1.5
S ₁	0.6
SEISMIC HAZARD LEVEL	1
SITE CLASS	D
SEISMIC IMPT. FACTOR (IP)	1.0
OCCUPANCY CATEGORY	II

RACKING TYPE		
RACKING TYPE	ROOF A	ROOF B
RACKING TECHNOLOGY	HELIX DUAL-TILT	HELIX DUAL-TILT
ANCHOR TYPE	OMG PowerGrip Plus	OMG PowerGrip Plus
BALLAST BLOCK WEIGHT (LBS)	14	14
ROOF MEMBRANE		
SEISMIC OFFSETS FOR UNANCHORED ARRAYS		
MAX ROOF SLOPE	1:12	1:12
MIN. OFFSET FROM ROOF EDGE (FT)	6	6

BUILDING CHARACTERIZATIONS		
ROOF HEIGHT (FT)	27	29
ROOF LENGTH (FT)	188	115
ROOF WIDTH (FT)	143	98
PARAPET HEIGHT (FT)	3	3
SPWR AZIMUTH (DEGREES)	28	28
MAX ALLOWABLE PRESSURE (PSF)	12	12
MAX ALLOWABLE WEIGHT (LBS)		

BALLAST AND ANCHOR SUMMARY		
SYSTEM WEIGHT (LBS)	27769	17035
AVERAGE PSF	5.1	4.9
MAX PSF	11.3	9.4
# BALLAST PER ROOF	1059	595
# OF ANCHOR PER ROOF	27	16
# MODULE PER ROOF	280	180
TOTAL # OF BALLASTS	1059	595
TOTAL # OF ANCHORS	27	16
TOTAL # OF MODULES	280	180

- LEGEND:
- PROPOSED LIGHT POLE REMOVAL
 - PROPOSED TREE REMOVAL
 - PROPOSED EQUIPMENT PAD
 - PROPOSED POINT OF INTERCONNECTION
 - AC CONDUITS (SSB-POI)
 - AC CONDUITS (SPB-SSB)
 - AC CONDUITS (INV-SPB)



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TIER 1

ARRAY SUMMARY TABLE - ROOF							
ARRAY	M60U_121 (18 STR)	M36U_121 (10 STR)	TOTAL STRINGS	TOTAL #OF MODULE	DC POWER (KW)	AC POWER (KW)	AC RUN (INV-SSB)
1	1		18	180	64.8	66	285
2			1	10	3.6		
3		1	9	90	32.4	39.6	430
4	1		18	180	64.8	66	40
TOTAL	2	1	46	460	165.6	171.6	

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RICHMOND, CA 94804 USA
(510) 640-0550

CONTRA COSTA COUNTY
30 MUIR RD

ENGINEER'S STAMP

30 MUIR RD
MARTINEZ, CA 94553

ARRAY LAYOUT

REV	DESIGN #	DATE	DB	CB	IF	DI
A	D-0091302	08-16-18				

REVISIONS

DESCRIPTION: PROPOSAL

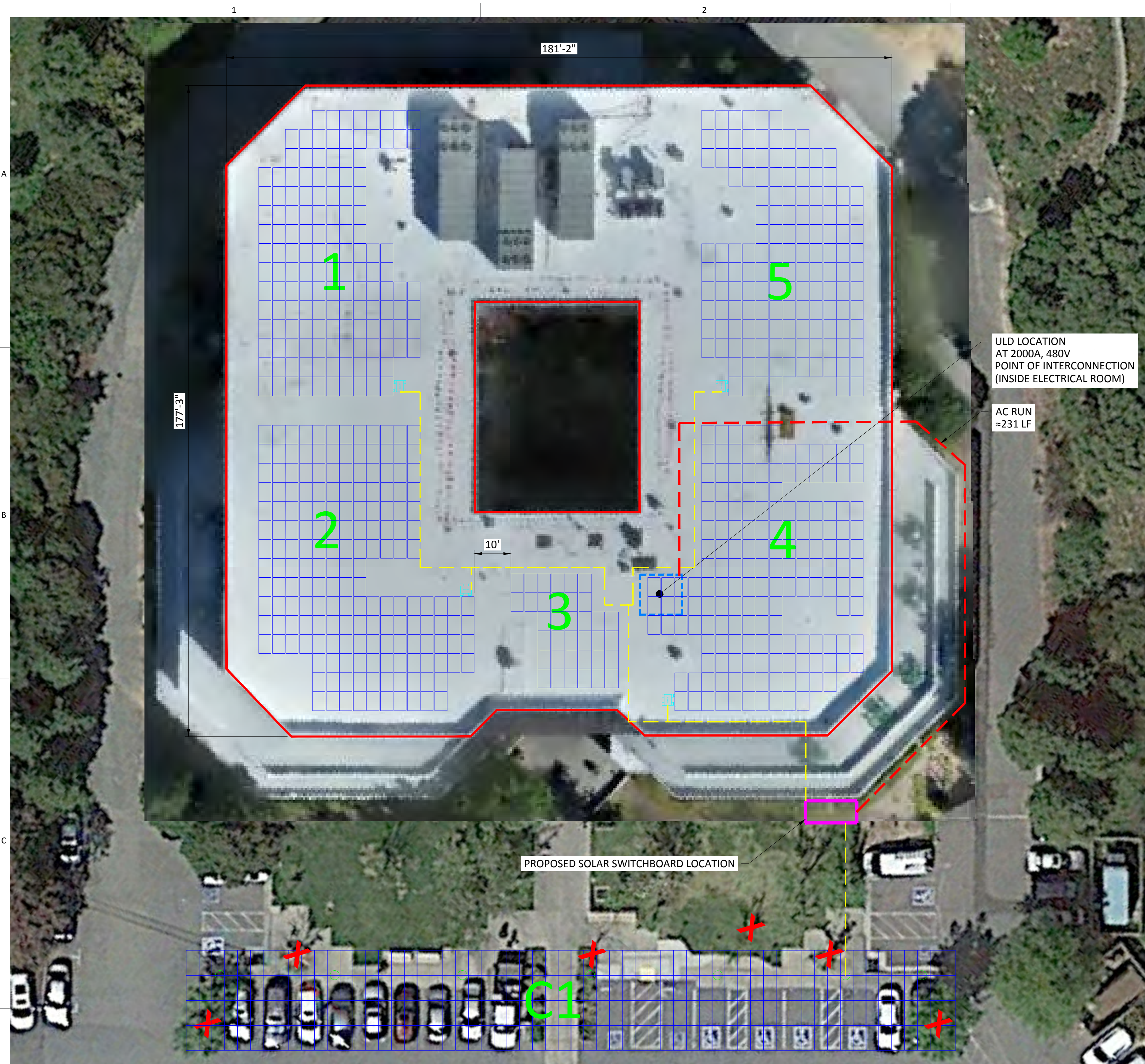
OPPORTUNITY

0001557288

PROJECT

SHEET

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- LEGEND:**
- PROPOSED LIGHT POLE REMOVAL
 - PROPOSED TREE REMOVAL
 - PROPOSED EQUIPMENT PAD
 - PROPOSED POINT OF INTERCONNECTION
 - AC CONDUITS (SSB-POI)
 - AC CONDUITS (SPB-SSB)
 - AC CONDUITS (INV-SPB)

PROJECT SUMMARY

PROJECT SUMMARY	ROOF	CARPORT	TOTAL
TOTAL # OF MODULE	672	240	912
MODULE TYPE	SPR-X22-360-COM	SPR-X21-470-COM	
# OF INVERTER	4	2	6
DC SYSTEM SIZE (KW)	241.92	112.80	354.72
AC SYSTEM SIZE (KW)	224	92	316

STRUCTURAL DESIGN PARAMETERS

WIND SPEED ASCE 7-10 (MPH)	110
EXPOSURE CATEGORY	C
TRANSITIONAL DISTANCE (FT)	
GROUND SNOW LOAD (PSF)	
SPECTRAL RESPONSE (SDS)	1.013
Ss	1.52
S1	0.6
SEISMIC HAZARD LEVEL	2
SITE CLASS	
SEISMIC IMPT. FACTOR (IP)	1.5
OCCUPANCY CATEGORY	II

RACKING TYPE

RACKING TYPE	ROOF A
RACKING TECHNOLOGY	HELIX DUAL-TILT
ANCHOR TYPE	OMG PowerGrip Plus
BALLAST BLOCK WEIGHT (LBS)	14
ROOF MEMBRANE	
SEISMIC OFFSETS FOR UNANCHORED ARRAYS	
MAX ROOF SLOPE	1:12
MIN. OFFSET FROM ROOF EDGE (FT)	15

BUILDING CHARACTERIZATIONS

ROOF HEIGHT (FT)	44
ROOF LENGTH (FT)	181
ROOF WIDTH (FT)	177
PARAPET HEIGHT (FT)	3
SPWR AZIMUTH (DEGREES)	-40
MAX ALLOWABLE PRESSURE (PSF)	12
MAX ALLOWABLE WEIGHT (LBS)	

BALLAST AND ANCHOR SUMMARY

SYSTEM WEIGHT (LBS)	75196
AVERAGE PSF	5.8
MAX PSF	12.0
# BALLAST PER ROOF	2993
# OF ANCHOR PER ROOF	95
# MODULE PER ROOF	672
TOTAL # OF BALLASTS	2993
TOTAL # OF ANCHORS	95
TOTAL # OF MODULES	672



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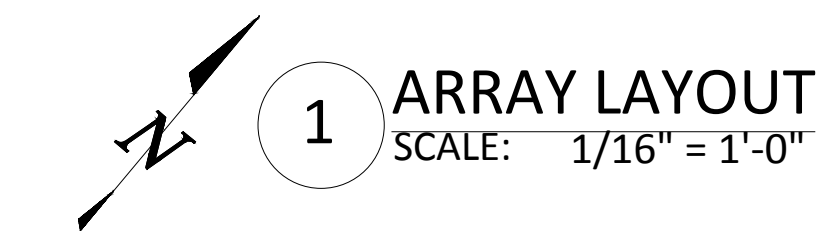


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TIER 1

- NOTES:**
- 110 MPH WIND ZONE (ASCE 7-10) CATEGORY II, EXPOSURE C.
 - CORROSION RATE: [1.0µm/yr.], [C2: 11%, C3: 99%]
 - METER #10100543591
 - ARRAY SHOWN ON AERIAL IMAGE
 - ARRAY MOUNTING STRUCTURE HELIX CARPORT 1.5
 - STANDARD CANOPY LOW-END CLEARANCE: 13.5' PROVIDED FOR STANDARD VEHICLE
 - BUILDING CODE REQUIRES 20' MIN. CLEARANCE FROM EXISTING BUILDINGS
 - FIRE DEPARTMENT REQUIRES 20' MIN. CLEARANCE ALONG EMERGENCY ACCESS ROUTES
 - TOTAL OF TREES TO BE REMOVED: 6
 - TOTAL OF LIGHT POLE TO BE REMOVED: 0



ARRAY SUMMARY TABLE - ROOF

ARRAY	M60U_121 (18 STR)	M60U_121 (14 STR)	M42U_121 (12 STR)	TOTAL STRINGS	TOTAL #OF MODULE	DC POWER (KW)	AC POWER (KW)	AC-RUN (INV-SSB)
1			1	12	144	51.84	46	220
2	1			15	180	64.8	66	160
3				3	36	12.96		
4		1		14	168	60.48	66	65
5			1	12	144	51.84	46	195
	1	1	2	56	672	241.92	224	

ARRAY SUMMARY TABLE - PFT

CANOPY	LABEL	#MODULE	#STRING	KW (DC)	M42U_121 (12 STR)	KW (AC)	TILT	AZIMUTH CSI	AZIMUTH SPWR	AC RUN (INV-SSB)
C1	4x60	240	24	112.8	2	92	10°	140°	-40°	42

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CONTRA COSTA COUNTY
50 DOUGLAS DRIVE

1000 WARD ST.
MARTINEZ, CA 94553

ARRAY LAYOUT

ENGINEER'S STAMP

REV	DESIGN #	DATE	DB	CB	RA	DJ
A	D-0091301	08-17-18				

OPPORTUNITY 0001557288

PROJECT ---

0 1/2" 1"

IF BAR IS NOT ONE INCH, DRAWING IS NOT TO SCALE

SHEET **AL1**

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- LEGEND:**
- PIER LOCATION
 - PROPOSED LIGHT POLE REMOVAL
 - X PROPOSED TREE REMOVAL
 - PROPOSED EQUIPMENT PAD
 - PROPOSED POINT OF INTERCONNECTION
 - AC CONDUITS (SSB-POI)
 - AC CONDUITS (SPB-SSB)
 - AC CONDUITS (INV)

- PFT NOTES:**
- EXPOSURE C.
 - CORROSION RATE: [1.0µm/yr],[C2: 11%, C3: 99%]
 - METER #TBD
 - ARRAY SHOWN ON AERIAL IMAGE
 - ARRAY MOUNTING STRUCTURE HELIX CARPORT 1.5
 - STANDARD CANOPY LOW-END CLEARANCE: 11' PROVIDED FOR STANDARD VEHICLE
 - BUILDING CODE REQUIRES 20' MIN. CLEARANCE FROM EXISTING BUILDINGS
 - FIRE DEPARTMENT REQUIRES 20' MIN. CLEARANCE ALONG EMERGENCY ACCESS ROUTES
 - TOTAL OF TREES TO BE REMOVED: 8
 - TOTAL OF LIGHT POLE TO BE REMOVED: 4

PROJECT SUMMARY

PROJECT SUMMARY	ROOF	CARPORT	TOTAL
TOTAL # OF MODULE	168	800	968
MODULE TYPE	SPR-X21-345-COM	SPR-X21-470-COM	
# OF INVERTER	1	5	6
DC SYSTEM SIZE (kW)	57.96	376.00	433.96
AC SYSTEM SIZE (kW)	66	361	427.00

STRUCTURAL DESIGN PARAMETERS

WIND SPEED (ASCE 7-10 (MPH))	110
EXPOSURE CATEGORY	B
TRANSITIONAL DISTANCE (FT)	
GROUND SNOW LOAD (PSF)	
SPECTRAL RESPONSE (SDS)	1.045
S5	1.568
S1	0.6
SEISMIC HAZARD LEVEL	2
SITE CLASS	D
SEISMIC IMPT. FACTOR (IP)	1.5
OCCUPANCY CATEGORY	II

RACKING TYPE

RACKING TYPE	ROOF A
RACKING TECHNOLOGY	HELIX DUAL-TILT
ANCHOR TYPE	OMG PowerGrip Plus
BALLAST BLOCK WEIGHT (LBS)	14
ROOF MEMBRANE	
SEISMIC OFFSETS FOR UNANCHORED ARRAYS	
MAX ROOF SLOPE	1:12
MIN. OFFSET FROM ROOF EDGE (FT)	4

BUILDING CHARACTERIZATIONS

ROOF HEIGHT (FT)	42
ROOF LENGTH (FT)	106
ROOF WIDTH (FT)	175
PARAPET HEIGHT (FT)	3
SPWR AZMUTH (DEGREES)	-26
MAX ALLOWABLE PRESSURE (PSF)	12
MAX ALLOWABLE WEIGHT (LBS)	

BALLAST AND ANCHOR SUMMARY

SYSTEM WEIGHT (LBS)	17548
AVERAGE PSF	5.4
MAX PSF	8.7
# BALLAST PER ROOF	
# OF ANCHOR PER ROOF	
# MODULE PER ROOF	
TOTAL # OF BALLASTS	703
TOTAL # OF ANCHORS	0
TOTAL # OF MODULES	168



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TIER 1

SUNPOWER
1444 HARBOUR WAY SOUTH
RICHMOND, CA 94804 USA
(510) 940-0500

ENGINEER'S STAMP

CONTRA COSTA COUNTY
595 CENTER
595 CENTER AVE.
MARTINEZ, CA 94553

REVISIONS

REV	DATE	DESCRIPTION	BY	CHK
A	08-24-18	PROPOSAL		

PROJECT: 0001557288
SHEET: AL1

ARRAY SUMMARY TABLE - ROOF

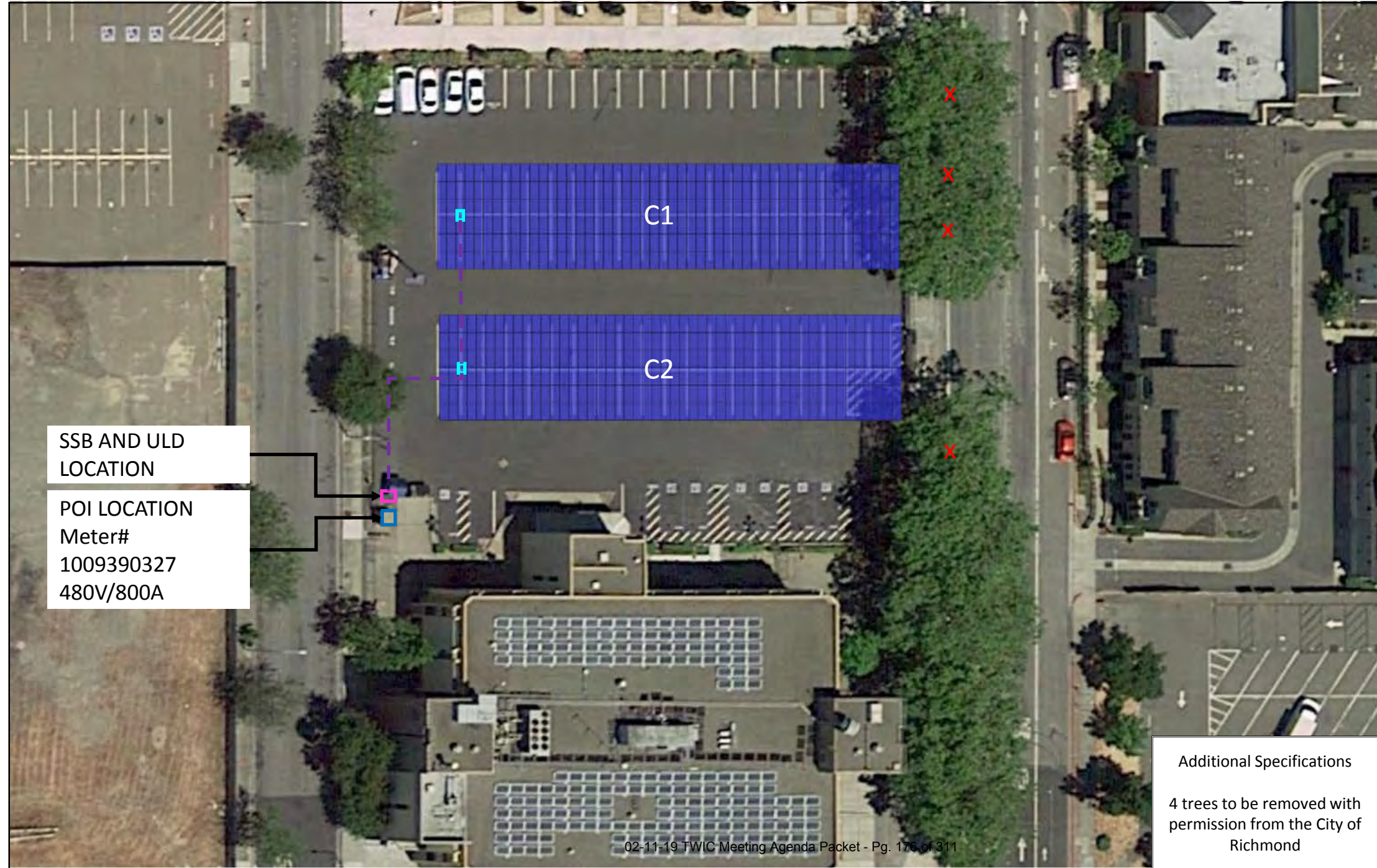
ARRAY	M60U_121 (14 STR)	TOTAL STRINGS	TOTAL #OF MODULE	DC POWER (KW)	AC POWER (KW)	AC RUN (INV-SSB)
R1	1	14	168	57.960	66	46

ARRAY SUMMARY TABLE - PFT

PANELBOARD - CARPORT	CANOPY	LABEL	#MODULE	#STRING	KW (DC)	M80U_121 (18 STR)	M60U_121 (14 STR)	M42U_121 (12 STR)	KW (AC)	TILT	AZIMUTH CSI	AZIMUTH SPWR	AC RUN (INV-SPB)	AC RUN (SPB-SSB)
SPB01	1	4x35	140	14	65.8		1		66	10°	244°	64°	116	316
	2	6x20	120	12	56.4			1	46					
	3	4x45	180	18	84.6	1			83					
SPB02	4	6x60	360	36	169.2	2			166				148	
	TOTAL		800	80	376.00	3	1	1	361					

8/25/2018 4:38 AM

0001557288_AL_595-CENTER_PFT_AJWG



SSB AND ULD
LOCATION

POI LOCATION
Meter#
1009390327
480V/800A

Additional Specifications

4 trees to be removed with
permission from the City of
Richmond

SUNPOWER

1414 HARBOUR WAY SOUTH
RICHMOND, CA 94804 USA
(510) 540 - 0550

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CONTRA COSTA COUNTY

**1305 MACDONALD AVE,
RICHMOND, CA 94801**

System Specifications

SPR-X21-470W Modules
282.0 kWp / 240.6 kWAC
180° Az, 10° Tilt



480 POINT OF INTERCONNECTION
(INSIDE ELECTRICAL ROOM)

ULD LOCATION
(MOUNTED OUTSIDE)

PROPOSED SOLAR
SWITCHBOARD LOCATION

1 ARRAY LAYOUT
SCALE: 1/16" = 1'-0"

PROJECT SUMMARY	
PROJECT SUMMARY	ROOF
TOTAL # OF MODULE	336
MODULE TYPE	SPR-X21-345-COM
# OF INVERTER	2
DC SYSTEM SIZE (kW)	115.92
AC SYSTEM SIZE (kW)	105.60

STRUCTURAL DESIGN PARAMETERS	
WIND SPEED ASCE 7-10 (MPH)	110
EXPOSURE CATEGORY	B
TRANSITIONAL DISTANCE (FT)	0
GROUND SNOW LOAD (PSF)	0
SPECTRAL RESPONSE (SDS)	0.8
Ss	1.5
S1	0.6
SEISMIC HAZARD LEVEL	1
SITE CLASS	D
SEISMIC IMPT. FACTOR (IP)	1.0
OCCUPANCY CATEGORY	II

RACKING TYPE	
RACKING TYPE	ROOF A
RACKING TECHNOLOGY	HELIX DUAL-TILT
ANCHOR TYPE	OMG PowerGrip Plus
BALLAST BLOCK WEIGHT (LBS)	14
ROOF MEMBRANE	
SEISMIC OFFSETS FOR UNANCHORED ARRAYS	
MAX ROOF SLOPE	1:12
MIN. OFFSET FROM ROOF EDGE (FT)	4

BUILDING CHARACTERIZATIONS	
ROOF HEIGHT (FT)	45
ROOF LENGTH (FT)	196
ROOF WIDTH (FT)	127
PARAPET HEIGHT (FT)	3
SPWR AZIMUTH (DEGREES)	-26
MAX ALLOWABLE PRESSURE (PSF)	12
MAX ALLOWABLE WEIGHT (LBS)	14

BALLAST AND ANCHOR SUMMARY	
SYSTEM WEIGHT (LBS)	34502
AVERAGE PSF	5.3
MAX PSF	11.3
# BALLAST PER ROOF	
# OF ANCHOR PER ROOF	
# MODULE PER ROOF	
TOTAL # OF BALLASTS	1307
TOTAL # OF ANCHORS	0
TOTAL # OF MODULES	336

- LEGEND:
- PROPOSED LIGHT POLE REMOVAL
 - X PROPOSED TREE REMOVAL
 - PROPOSED EQUIPMENT PAD
 - PROPOSED POINT OF INTERCONNECTION
 - AC CONDUITS (SSB-POI)
 - AC CONDUITS (SPB-SSB)
 - AC CONDUITS (INV-SPB)



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TIER 1

ARRAY	M60U_121 (18 STR)	M36U_121 (10 STR)	TOTAL STRINGS	TOTAL #OF MODULE	DC POWER (KW)	AC POWER (KW)	AC RUN (INV-SSB)
1		1	8	96	33.12		
2			2	24	8.28		100
3	1		18	216	74.52	66	25
TOTAL	1	1	28	336	115.92	105.6	

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CONTRA COSTA COUNTY
597 CENTER AVE
MARTINEZ, CA 94553

REV	DESIGN #	DATE	DB	CB	IF	DI
A	D-0091447	08-27-18				

REVISIONS
DESCRIPTION
PROPOSAL

OPPORTUNITY 0001557288

PROJECT ---

0 1/2" 1"
IF BAR IS NOT ONE INCH, DRAWING IS NOT TO SCALE

SHEET **AL1**



1 ARRAY LAYOUT
SCALE: 1/32" = 1'-0"

PROJECT SUMMARY	
PROJECT SUMMARY	ROOF
TOTAL # OF MODULE	936
MODULE TYPE	SPR-X21-345-COM
# OF INVERTER	6
DC SYSTEM SIZE (KW)	322.92
AC SYSTEM SIZE (KW)	296.00

STRUCTURAL DESIGN PARAMETERS	
WIND SPEED ASCE 7-10 (MPH)	110
EXPOSURE CATEGORY	B
TRANSITIONAL DISTANCE (FT)	
GROUND SNOW LOAD (PSF)	0
SPECTRAL RESPONSE (SDS)	0.8
Ss	1.5
S1	0.6
SEISMIC HAZARD LEVEL	1
SITE CLASS	D
SEISMIC IMPT. FACTOR (IP)	1.0
OCCUPANCY CATEGORY	II

RACKING TYPE	
RACKING TYPE	ROOF A
RACKING TECHNOLOGY	HELIX DUAL-TILT
ANCHOR TYPE	OMG PowerGrip Plus
BALLAST BLOCK WEIGHT (LBS)	14
ROOF MEMBRANE	
SEISMIC OFFSETS FOR UNANCHORED ARRAYS	
MAX ROOF SLOPE	1:12
MIN. OFFSET FROM ROOF EDGE (FT)	4

BUILDING CHARACTERIZATIONS	
ROOF HEIGHT (FT)	47
ROOF LENGTH (FT)	97
ROOF WIDTH (FT)	106
PARAPET HEIGHT (FT)	1
SPWR AZIMUTH (DEGREES)	-38
MAX ALLOWABLE PRESSURE (PSF)	12
MAX ALLOWABLE WEIGHT (LBS)	

BALLAST AND ANCHOR SUMMARY	
SYSTEM WEIGHT (LBS)	936622
AVERAGE PSF	9
MAX PSF	5
# BALLAST PER ROOF	
# OF ANCHOR PER ROOF	
# MODULE PER ROOF	
TOTAL # OF BALLASTS	3311
TOTAL # OF ANCHORS	0
TOTAL # OF MODULES	936

- LEGEND:
- PROPOSED LIGHT POLE REMOVAL
 - X PROPOSED TREE REMOVAL
 - PROPOSED EQUIPMENT PAD
 - PROPOSED POINT OF INTERCONNECTION
 - AC CONDUITS (SSB-POI)
 - AC CONDUITS (SPB-SSB)
 - AC CONDUITS (INV-SPB)



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TIER 1

ARRAY SUMMARY TABLE - ROOF										
PANELBOARD - ROOF	ARRAY	M60U_121 (16 STR)	M42U_121 (14 STR)	M42U_121 (12 STR)	TOTAL STRINGS	TOTAL #OF MODULE	DC POWER (KW)	AC POWER (KW)	AC RUN (INV-SPB)	AC RUN (SPB-SSB)
SPB01	1	1			16	192	66.24	66	140	300
	2			1	12	144	49.68	46	85	
	3		1		14	168	57.96	46	60	
SPB02	4			1	12	144	49.68	46	45	150
	5			1	12	144	49.68	46	60	
	6			1	12	144	49.68	46	25	
TOTAL		1	1	4	78	936	322.92	296		

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ENGINEER'S STAMP

CONTRA COSTA COUNTY
1000 WARD ST
MARTINEZ, CA 94553

ARRAY LAYOUT

REV	DESIGN #	DATE	CB	DB	CB
A	D-0051449	08-28-18	AA	AA	AA

REVISIONS
DESCRIPTION
PROPOSAL

OPPORTUNITY 0001557288

 PROJECT ---

 SHEET **AL1**

0 1/2" 1"

IF BAR IS NOT ONE INCH, DRAWING IS NOT TO SCALE



1
ARRAY LAYOUT
 SCALE: 1/32" = 1'-0"

NOTES:

1. 110 MPH WIND ZONE (ASCE 7-10) CATEGORY II, EXPOSURE C
2. CORROSION RATE: [1.7um./yr],[C3: 83%, C4: 99%]
3. METER #1004577984
4. ARRAY SHOWN ON AERIAL IMAGE
5. ARRAY MOUNTING STRUCTURE HELIX CARPORT 1.5
6. STANDARD CANOPY LOW-END CLEARANCE: 11' PROVIDED FOR STANDARD VEHICLE
7. BUILDING CODE REQUIRES 20' MIN. CLEARANCE FROM EXISTING BUILDINGS
8. FIRE DEPARTMENT REQUIRES 20' MIN. CLEARANCE ALONG EMERGENCY ACCESS ROUTES
9. TOTAL OF TREES TO BE REMOVED: 19
10. TOTAL OF LIGHT POLE TO BE REMOVED: 9

ARRAY SUMMARY TABLE - CARPORT														
PANELBOARD - CARPORT	CANOPY	LABEL	#MODULE	#STRING	KW (DC)	M80U_121 (18 STR)	M60U_121 (16 STR)	M42U_121 (12 STR)	KW (AC)	TILT	AZIMUTH CSI	AZIMUTH SPWR	AC RUN (INV-SPB)	AC RUN (SPB-SSB)
SPB01	1	4x60	240	24	112.8			2	92	10°	157°	-23°	30,140	30
	2	6x60	360	36	169.2	2			166	10°	157°	-23°	65,205	
SPB02	3	6x60	360	36	169.2	2			166	10°	157°	-23°	30,140	150
	4	4x40	160	16	75.2		1		66	10°	157°	-23°	70	
TOTAL			1120	112	526.4	4	1	2	490					

PROJECT SUMMARY

PROJECT SUMMARY	CARPORT
TOTAL # OF MODULE	1120
MODULE TYPE	SPR-X21-470-COM
# OF INVERTER	7
DC SYSTEM SIZE (KW)	526.40
AC SYSTEM SIZE (KW)	490.00



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 TIER 1

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CONTRA COSTA COUNTY
 2530 ARNOLD DR
 MARTINEZ, CALIFORNIA 94553

ARRAY LAYOUT

REV	DESIGN #	DATE	DB	CB	BS	DI
A	D-0091444	08-27-18				

REVISIONS DESCRIPTION PROPOSAL
 OPPORTUNITY 0001557288
 PROJECT ---

IF BAR IS NOT ONE INCH, DRAWING IS NOT TO SCALE
 SHEET AL1



1 ARRAY LAYOUT
SCALE: 1/32" = 1'-0"

NOTES:

- 110 MPH WIND ZONE (ASCE 7-10) CATEGORY II, EXPOSURE C
- CORROSION RATE: [1.2µm/yr],[C2: 4%, C3: 99%]
- ARRAY SHOWN ON AERIAL IMAGE
- ARRAY MOUNTING STRUCTURE HELIX CARPORT 1.5
- STANDARD CANOPY LOW-END CLEARANCE: 11' PROVIDED FOR STANDARD VEHICLE
- BUILDING CODE REQUIRES 20' MIN. CLEARANCE FROM EXISTING BUILDINGS
- FIRE DEPARTMENT REQUIRES 20' MIN. CLEARANCE ALONG EMERGENCY ACCESS ROUTES
- TOTAL OF TREES TO BE REMOVED: 9
- TOTAL OF LIGHT POLE TO BE REMOVED: 5

ARRAY SUMMARY TABLE - CARPORT														
PANEL BOARD - CARPORT	CANOPY	LABEL	#MODULE	#STRING	KW (DC)	M80U_121 (18 STR)	M60U_121 (15 STR)	M42U_121 (12 STR)	KW (AC)	TILT	AZIMUTH CSI	AZIMUTH SPWR	AC RUN (INV-SPB)	AC RUN (INV-SSB)
SPB01	1	6x50	300	30	141	1		1	129	10°	144°	-36°		
	2	6x45	270	27	126.9		1	1	112	10°	144°	-36°	95	30
SPB02	3	6x60	360	36	169.2	2			166	10°	144°	-36°		160
TOTAL			930	93	437.1	3	1	2	407					

LEGEND:

- X PROPOSED TREE REMOVAL
- PROPOSED LIGHT POLE REMOVAL
- PIER LOCATION
- PROPOSED EQUIPMENT PAD
- PROPOSED POINT OF INTERCONNECTION
- AC CONDUITS (SSB-POI)
- AC CONDUITS (SPB-SSB)
- AC CONDUITS (INV-SPB)

PROJECT SUMMARY

PROJECT SUMMARY	CARPORT
TOTAL # OF MODULE	930
MODULE TYPE	SPR-X21-470-COM
# OF INVERTER	6
DC SYSTEM SIZE (kW)	437.1
AC SYSTEM SIZE (kW)	407



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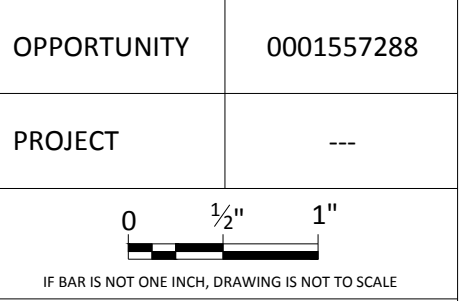
CONTRA COSTA COUNTY
4545 DELTA FAIR BLVD
4545 DELTA FAIR BLVD
ANTIOCH, CA 94509

ARRAY LAYOUT

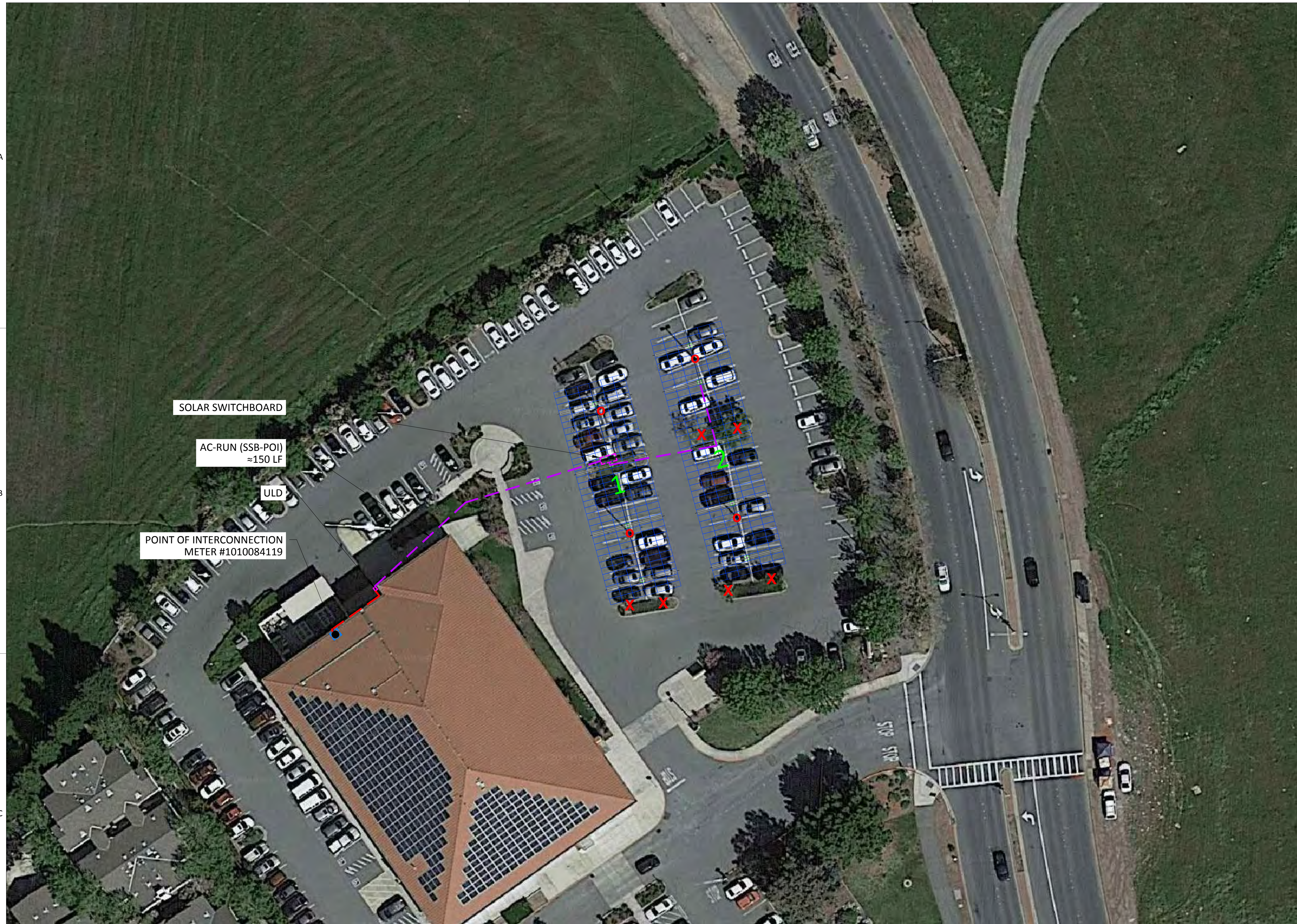
REV	DATE	DESCRIPTION	BY	CHKD
A	08-27-18	PROPOSAL	AA	DJ

REVISIONS

DESIGN #	D-0091445
OPPORTUNITY	0001557288
PROJECT	---



IF BAR IS NOT ONE INCH, DRAWING IS NOT TO SCALE
SHEET **AL1**



1
ARRAY LAYOUT
 SCALE: 1/32" = 1'-0"

NOTES:

1. 110 MPH WIND ZONE (ASCE 7-10) CATEGORY II, EXPOSURE C
2. CORROSION RATE: [1.8µm/yr],[C3: 75%, C4: 99%]
3. ARRAY SHOWN ON AERIAL IMAGE
4. ARRAY MOUNTING STRUCTURE: HELIX CARPORT 1.5
5. STANDARD CANOPY LOW-END CLEARANCE: 11' PROVIDED FOR STANDARD VEHICLE
6. BUILDING CODE REQUIRES 20' MIN. CLEARANCE FROM EXISTING BUILDINGS
7. FIRE DEPARTMENT REQUIRES 20' MIN. CLEARANCE ALONG EMERGENCY ACCESS ROUTES
8. TOTAL OF TREES TO BE REMOVED: 4
9. TOTAL OF LIGHT POLE TO BE REMOVED: 4

CANNOPY	LABEL	# MODULE	# STRING	KW (DC)	M42U_121 (12STR)	M36U_121 (9 STR)	KW (AC)	TILT	AZIMUTH CSI	AZIMUTH SPWR	AC RUN (INV-SSB)
1	6x35	210	21	98.70	1	1	85.6	10°	255°	75°	95, 95
2	6x40	240	24	112.80	2		92.0	10°	255°	75°	30
TOTAL		450	45	211.50	3	1	177.6				

- LEGEND:**
- PROPOSED LIGHT POLE REMOVAL
 - X PROPOSED TREE REMOVAL
 - PIER LOCATION
 - PROPOSED EQUIPMENT PAD
 - PROPOSED POINT OF INTERCONNECTION
 - AC CONDUITS (SSB-POI)
 - AC CONDUITS (SPB-SSB)
 - AC CONDUITS (INV-SPB)

PROJECT SUMMARY

PROJECT SUMMARY	CARPORT
TOTAL # OF MODULE	450
MODULE TYPE	SPR-X21-470-COM
# OF INVERTER	4
DC SYSTEM SIZE (kW)	211.50
AC SYSTEM SIZE (kW)	177.60



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 TIER 1

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ENGINEER'S STAMP

CONTRA COSTA COUNTY
4549 DELTA FAIR BLVD

4594 DELTA FAIR BLVD
ANTIOCH, CA 94509

ARRAY LAYOUT

REV	DESIGN #	DATE	DB	CB	HG	ID
A	D-0091446	08-28-18				

REVISIONS

DESCRIPTION: PROPOSAL

OPPORTUNITY: 0001557288

PROJECT: ---

0 1/2" 1"

IF BAR IS NOT ONE INCH, DRAWING IS NOT TO SCALE

SHEET AL1

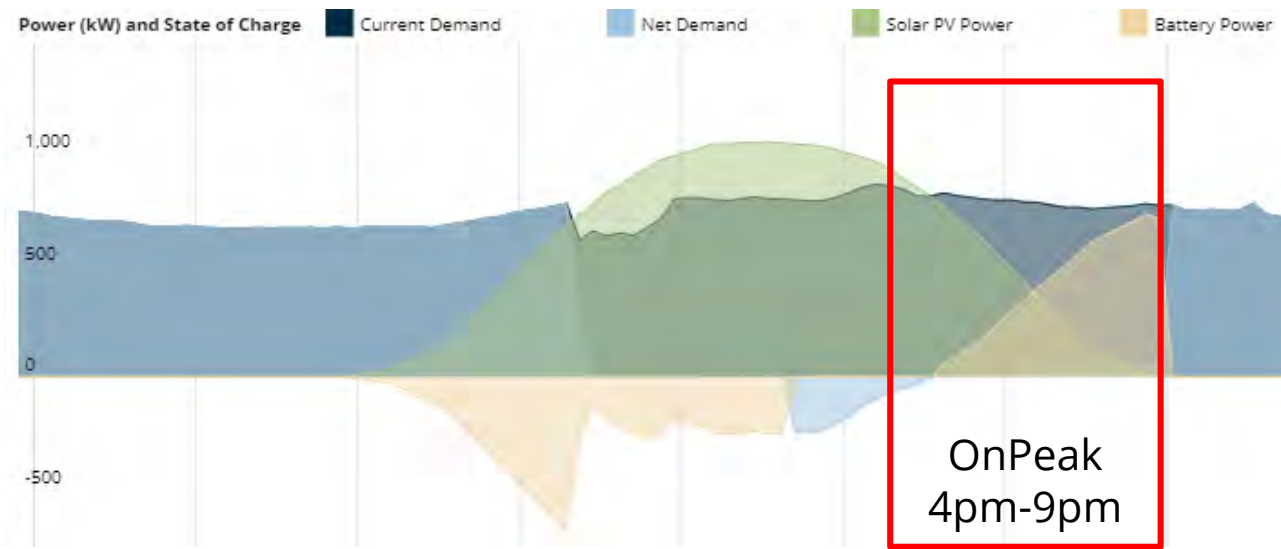
Option S Decision Overview – Critical for Storage Option

The August 9th CPUC decision mandates PG&E to create an Option S Rate

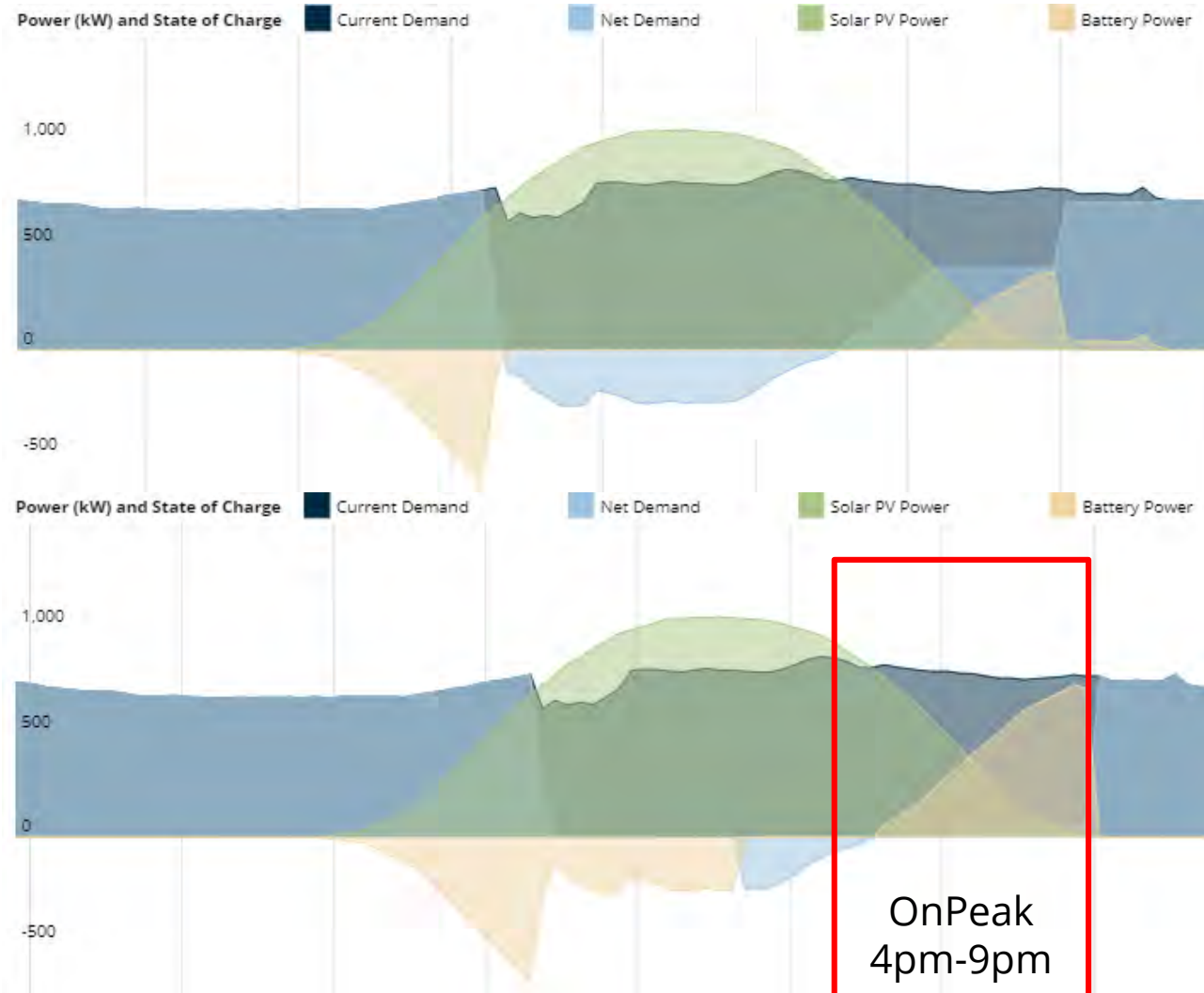
- **Option S will be available** at the earlier of 1) the same time proposed rate tariffs are available for opt-in enrollment (**Oct 2019**), or 2) **January 1, 2020**
- “The energy storage system must have a **rated capacity** in watts which is **at least 10% of the customer’s peak demand** over the previous 12 months.”
- “Option S shall collect **all distribution demand charge revenue through daily demand charges** for participating E-19V, E-19, and E-20 customers, for Option S customers.”
- “After **duplicating the Option R rate design**, **80%** of the revenue that would otherwise be collected from customers by non-coincident distribution demand charges (referred to by PG&E as “maximum” demand charges) shall be collected instead through daily demand charges **assessed during the peak period only (4 p.m. to 9 p.m.** for MLLP customers) for customers on Option S.”
- “**20%** of the revenue that would otherwise be collected from customers by non-coincident distribution demand charges **shall be collected through a non-coincident distribution demand charge** for customers on Option S, except that no distribution demand charges may be assessed between 9 a.m. and 2 p.m. each day.”
- **Cap of 150MW** (50MW per rate class for E-19V, E-19 and E-20)

How Option S Impacts Customer Savings

- Duplication of Option R rate design and associated energy rates, preserves solar economics under Option S
- Having the majority (80%) of demand charges assessed from 4pm-9pm creates a demand period that Solar + Storage are very effective at managing
- Charging from Off Peak Solar and Discharging during On Peak to manage demand charges creates stacking energy arbitrage value



2500 Alhambra, July 21st



Option R Grandfathered

- 704 kW Average Max Monthly Demand
- \$36,080 ESS Demand Savings
- \$20,592 ESS Energy Savings

Option S

Annual:

- 289 kW Average Daily Max Demand
- \$70,280 ESS Demand Savings
- \$49,775 ESS Energy Savings

Contra Costa County Portfolio

Site Name	Solar Rate	ESS System Size (kW)	ESS System Size (kWh)	ESS Cost (\$/year)	Option R				Option S			
					ESS Energy Savings (\$/year)	ESS Demand Savings (\$/year)	Total ESS Savings (\$/year)	Net Savings (\$/year)	ESS Energy Savings (\$/year)	ESS Demand Savings (\$/year)	Total ESS Savings (\$/year)	Net Savings (\$/year)
1000 Ward	E19S Option R	500	950	\$34,035	-\$293	-\$425	\$22,280	-\$11,755	\$23,463	\$34,344	\$57,807	\$23,772
30 Douglas	E19 S Option R (Grandfathered)	500	950	\$34,035	-\$2,807	\$20,714	\$20,003	-\$14,032	\$7,974	\$46,902	\$55,965	\$21,930
50 Douglas	E19S Option R	500	950	\$34,035	\$207	-\$3,009	\$23,730	-\$10,305	\$2,992	\$44,882	\$47,875	\$13,840
2350 Arnold	E19S Option R	500	950	\$34,035	\$1,227	\$407	\$23,707	-\$10,328	\$5,909	\$38,514	\$44,423	\$10,388
595 Center	E19S Option R	500	950	\$34,035	\$468	-\$3,602	\$18,029	-\$16,006	\$16,931	\$36,101	\$53,032	\$18,997
		2500	4750	\$170,175	-\$1,197	\$14,084	\$107,748	-\$62,427	\$57,268	\$200,743	\$259,101	\$88,926
2500 Alhambra	E20P Option R	1000	1900	\$57,641	\$20,592	\$36,080	\$55,914	-\$1,728	\$49,775	\$70,281	\$120,056	\$62,415

Option S Unknowns

- **Daily Demand Rates**
 - CALSSA has requested illustrative Daily Demand Rates from PG&E that are expected to be released by end of Nov 2018
 - Estimate of Daily Demand rate calculated by scaling the Daily Demand Rate estimated by SEIA that was given in a Rate Design Q&A Session
- **Securing Option S allocation under 150MW cap**
 - More information about how to apply for Option S will be in PG&E advise letter
 - Will there be a queue?
 - Will existing storage customers be able to switch to Option S?

Your Best Partner for Sustainable Energy Savings



Execution
Certainty



Best Products
and Solutions



Committed
Partner



Execution
Certainty



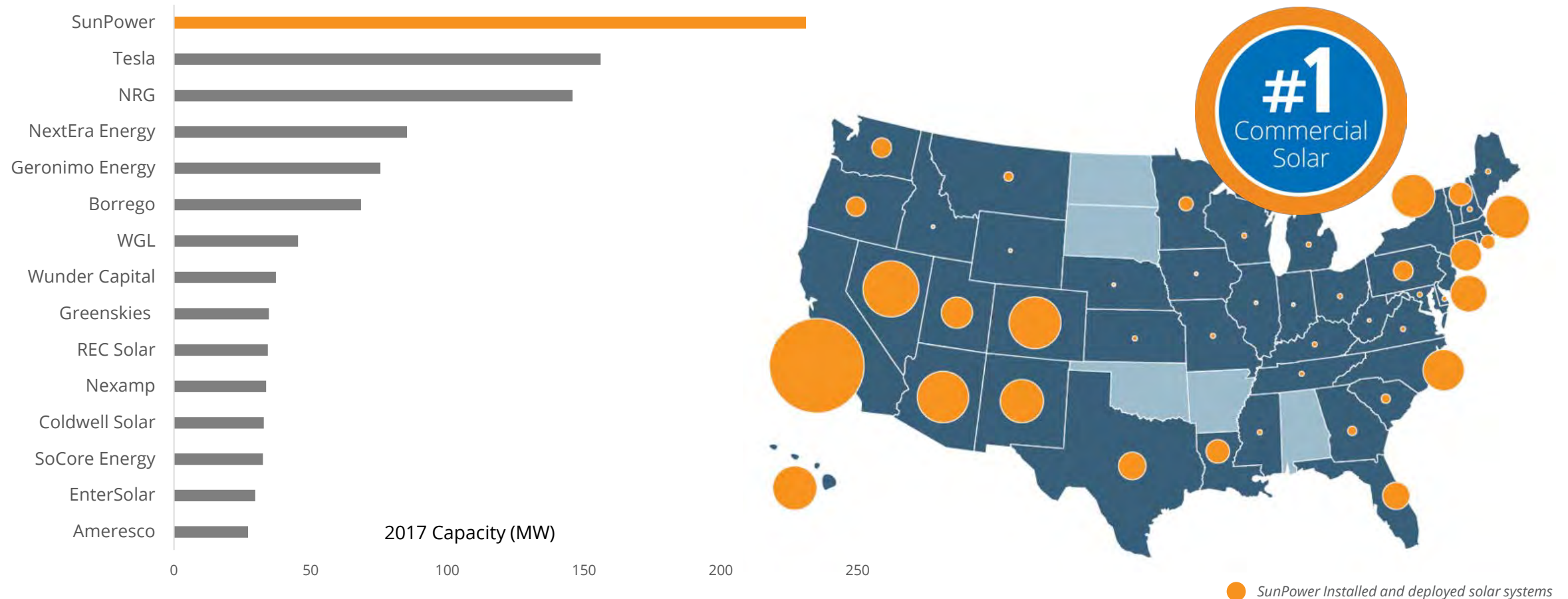
We make solar seamless and easy for you.

Expertise in in product selection, project design,
financing, construction, grid connection and operations.

Full service, coast to coast

SunPower is the trusted #1 commercial solar provider for large corporate customers, with more than 33 years' experience, 9.2 gigawatts installed and \$10 billion financed worldwide. We've simplified the process, providing you with the best possible solar experience.

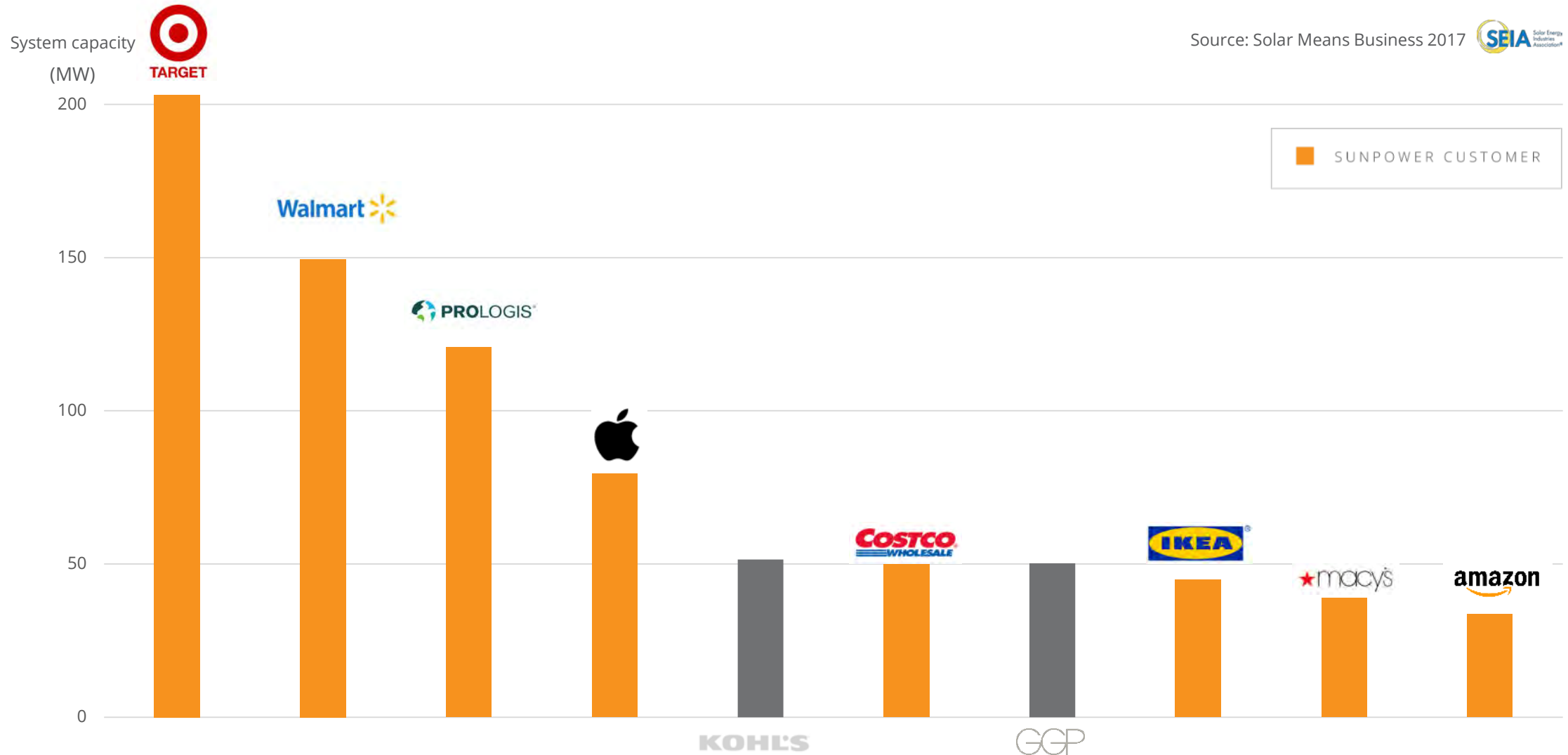
A recent GTM Research report confirms SunPower is the No. 1 U.S. commercial solar provider based on 2017 delivered projects - and information collected from installers, developers, asset owners and financiers.



Source: Greentech Media Research, 2018

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8 of Top 10 corporate solar buyers chose SunPower



Over \$10B in solar project financing

Financing that fits your needs, with maximum returns.

The SunPower solar financing team are helpful facilitators for our customers. Our primary goal is finding and executing the best financial solution to achieve your organization's energy objectives and the very best long-term ROI.



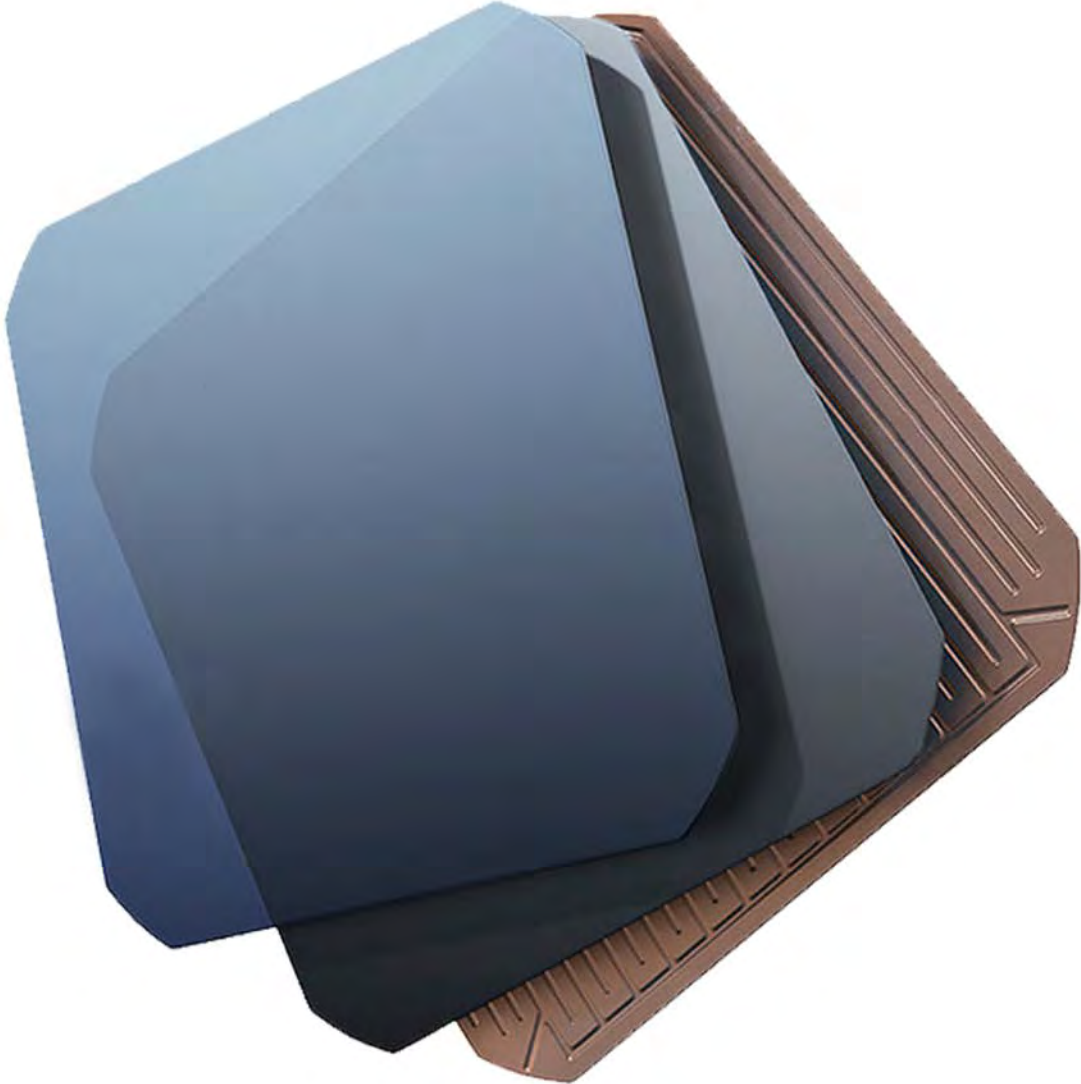
Best Products and Solutions



SunPower technology is different, and better.
For uncompromised performance and dependable results.

Higher savings start with different, better cells

- 25.2% efficient solar cell maximizes system power production
- Fundamentally different design enhances reliability, eliminating 86% of the reasons cells fail¹
- This adds up to better reliability and more power over time, giving you improved economics and more savings



	SUNPOWER®	vs.	Conventional Solar
MORE ENERGY	No grid lines on cell front		 Lines of metal paste
HIGHER RELIABILITY	Solid metal backing		 Metal paste on back of cell
HIGHER RELIABILITY	Thick connections		 Thin connections

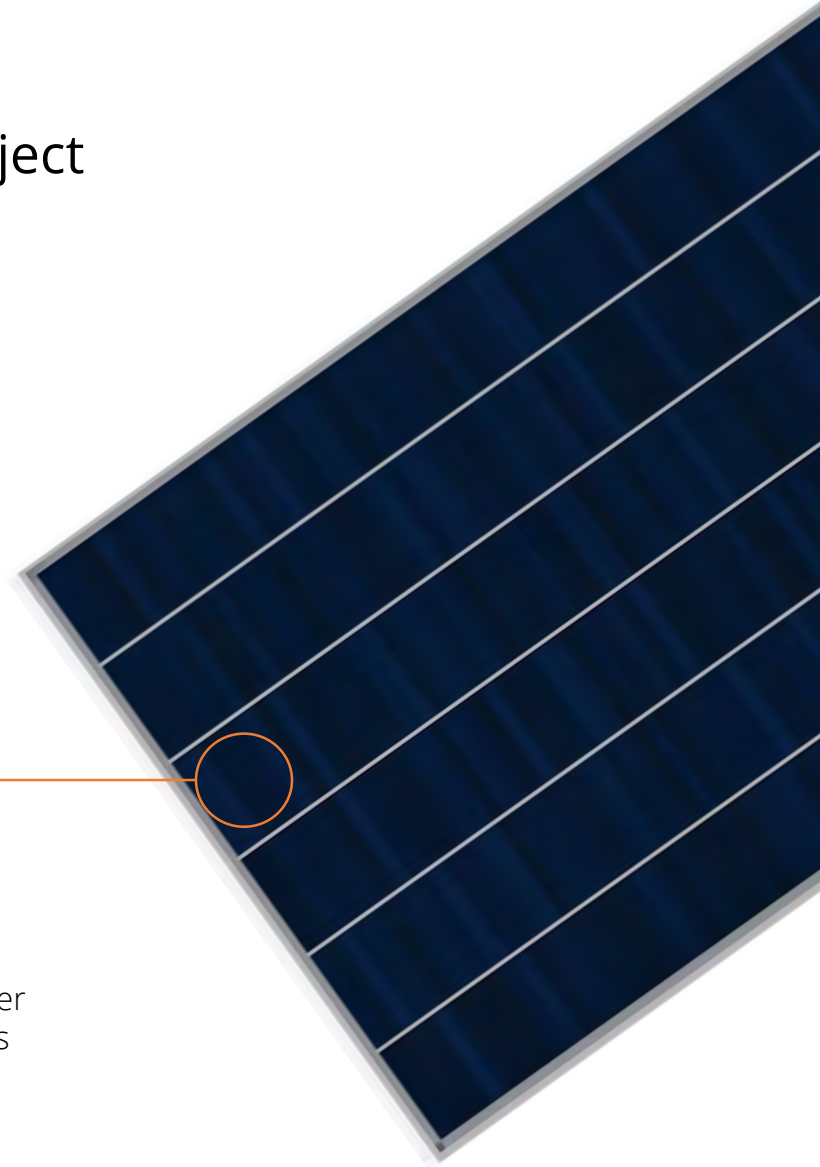
Module choice so you can select the right technology for your project



A close-up view of a solar panel with a grid of small, square cells. An orange circle highlights one of the cells, with a line pointing to the text below.

SunPower® Maxison® Cell-based Modules

- Highest efficiency module you can buy¹
- Unmatched reliability²
- Up to 60% more energy in the same space over the first 25 years³
- Best choice for constrained areas to maximize lifetime energy production



A close-up view of a solar panel with a grid of larger, rectangular cells. An orange circle highlights one of the cells, with a line pointing to the text below.

SunPower® Performance Series Modules

- Superior in every way to Conventional Modules—efficiency, quality, and reliability
- Backed by the same 25-year Product and Power Warranty covering Maxison cell-based modules
- Best choice for minimizing up-front project costs

Our Warranty

The industry's best modules, best warranty

- The proven reliability of SunPower® modules enables the industry's best warranty
- We eliminate the loopholes and gaps found in other solar warranties to offer the highest level of protection on your investment
- We stand behind every module we ship to homes, businesses and power plants around the world to provide you with the confidence to secure your energy future

CONVENTIONAL MODULES		
POWER	PRODUCT	SERVICE
25 YEARS	5-15 YEARS	0-10 YEARS

vs.

SUNPOWER®		
POWER	PRODUCT	SERVICE
25 YEARS		

POWER

SunPower's power warranty is the highest in solar—for 25 years

PRODUCT

SunPower covers all product defects for the full 25 years

SERVICE

SunPower will repair or replace defective modules within 25 years of purchase



Commercial Carport and Rooftop Solutions

Make a visible statement on your sustainability goals

SunPower® Helix™ Carport System

- Designed by architects and engineers to deliver the best in value, performance and elegance
- Each component is engineered for greater reliability and longer system life
- System features surpass industry standards for safety and durability



SunPower® Helix™ Roof Single Tilt System

- Optimizes energy output per kW
- Ideal for unconstrained roofs
- Ideal for customers prioritizing IRR



Maximizing the value of solar + storage

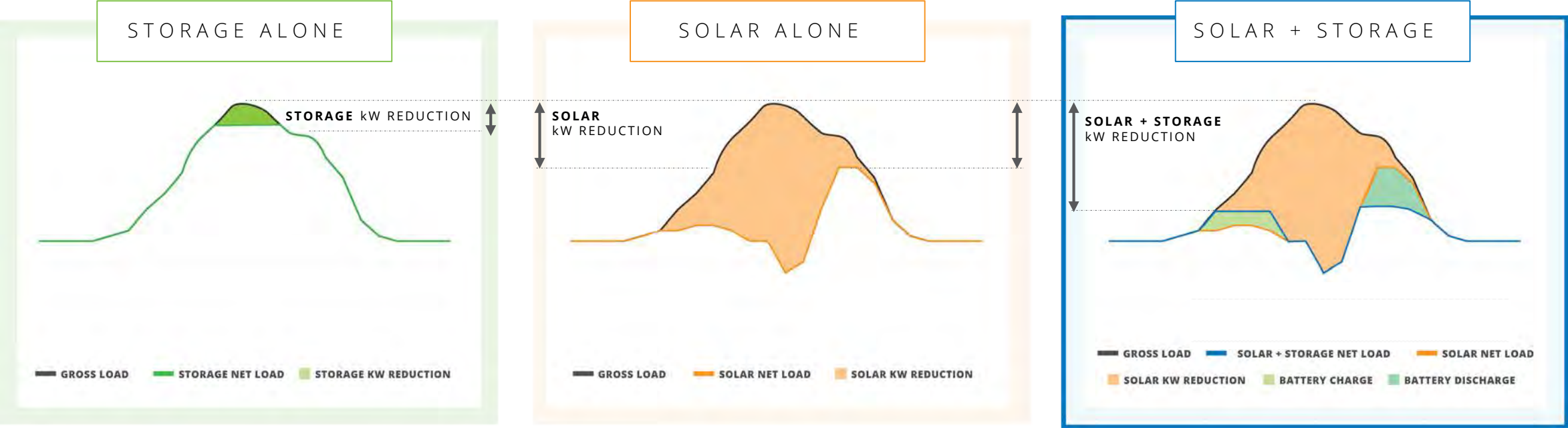
- **Lower your electricity costs**
Realize significant reductions in your monthly utility demand charges with Helix™ Storage.
- **Realize savings quicker**
Design, installation, and O&M services are seamlessly integrated to provide a turnkey solution that speeds your time to savings.
- **Minimize disruptions**
Your system is delivered on a timeline and budget that's right for you—certainty that's backed by SunPower's 30+ years of experience.



Storage Image courtesy of Lockheed Martin

Solar and storage are better together

While solar does provide demand charge savings; when paired with energy storage that is charged and discharged at the most opportune times, demand charge reductions become more reliable.



Smaller peak reduction from "flatter" usage pattern

Limited value for morning and evening peaks

Maximum savings

Committed Partner



We are committed to your success and sustainability goals.

Sustainability matters to you and to us.

Rigorous safety protocol helps ensure your project is on time and on budget

Our safety standards are based on decades of experience and ensure the well-being of our contractors and workers.

Safety lapses cause delays, higher costs and accidents, which is why we plan ahead to protect your investment at every milestone.



ON-SITE SAFETY

- Design review and approval
- Project kickoff with hazard analysis and site safety plan
- Weekly safety and quality control audits
- Daily team reports, review of on-site hazards and construction calls
- Thorough investigation of near misses, accidents and corrective actions
- Customer solar safety training



CORPORATE CULTURE

- Dedicated to safe, injury-free workplaces
- Training required for staff, managers and executives
- Extensive programs: fall protection, excavation, crane, rigging, OSHA compliance, etc.
- Quarterly reviews and awards
- Total RIR reporting

Sustainable manufacturing

At every step of the product lifecycle, from manufacturing to end of life, we work to minimize resource usage and maximize environmental benefits.



SunPower facilities in De Vernejoul and Toulouse, France, and Mexicali, Mexico have landfill-free verification from NSF Sustainability, meaning these facilities divert more than 99% of their waste, with 1% or less going to landfills.



SunPower has LEED certifications at facilities globally, including our San Jose headquarters and Mexicali manufacturing sites. The SunPower Malaysia administration building is certified LEED Platinum and the manufacturing facility is certified LEED Gold. The regional operating headquarters in the Philippines is certified LEED Platinum.



SunPower is the world's first and only solar panel company to earn the prestigious Cradle to Cradle Certified™ Silver designation for our direct current E-Series and X-Series panels.¹



In 2016, SunPower published its first Declare label for E- and X-Series panels, providing details on where the products are assembled, their life expectancy and end-of-life options.

Strengthen your sustainability goals and increase your facility value

SunPower systems contribute more for your LEED certification

- 40 points are required for Basic LEED Certification, and a SunPower solar system with Cradle to Cradle Certified™ solar panels can contribute across several credit categories.
- On a typical project², a solar system contributes 5 points, and Using Cradle to Cradle™ certified SunPower products and reducing construction waste can yield an additional 10 points.



SunPower is a member of the US Green Building Council, the organization which denotes expertise in the field of green building.



- Renewable energy production

3

3



- Heat Island Reduction

2

2



- Environmental product declarations
- Material ingredients
- Sourcing of raw materials
- Construction + waste management
- Avoidance of chemicals of concern

10

LEED POINTS

Conventional Panels

SunPower Maxeon Panels

Get your projects done right

Deliver great savings



Execution Certainty

- 33 years of global experience installing 9.2GW with over \$10B in financing.
- No. 1 U.S. commercial solar provider based on 2017 delivered projects³
- The most expertise in product selection, project design, financing, construction, grid connection and operations.



Best Products and Solutions

- World and industry record breaking technology in cells, modules and systems with the highest performance and the lowest degradation rate.
- A broad portfolio for more choice and a better fit for your needs.
- Solutions that deliver the most energy for predictable savings and dependable results.
- Industry's largest investment in solar R&D and the best warranty.



Committed Partner

- No other solar company offers such a complete best technology and delivery, custom financing options, customer service, community programs and sustainability practices.
- Highest safety standards in the industry.
- Commitment to our communities, with programs like Horizons and Solar Academies for learning, mentorship and workforce training opportunities.



DEMAND BETTER SOLAR®

SUNPOWER®

Important Information

1. Based on search of datasheet values from websites of top 10 manufacturers per IHS, as of January 2017.
2. A typical project assumes core and shell or major renovation with at least 48% of the energy offset by solar, sufficient products to qualify for Material and Resource categories, and at least 33% of the hardscape covered with solar. LEED, USGBC and the related logo are trademarks owned by the U.S. Green Building Council and are used with permission
3. Greentech Media Research, 2018

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Contra Costa County Board of Supervisors

Subcommittee Report

TRANSPORTATION, WATER & INFRASTRUCTURE COMMITTEE

10.

Meeting Date: 02/11/2019

Subject: CONSIDER report to the Board of Supervisors on the status of items.

Submitted For: TRANSPORTATION, WATER & INFRASTRUCTURE
COMMITTEE,

Department: Conservation & Development

Referral No.: N/A

Referral Name: N/A

Presenter: John Cunningham, DCD

Contact: John Cunningham
(925)674-7833

Referral History:

This is an annual Administrative Item of the Committee.

Referral Update:

See attached Status Report on Referrals to the Committee.

Recommendation(s)/Next Step(s):

REVIEW Status Report and DIRECT staff to forward the report to the Board of Supervisors with revisions as appropriate.

Fiscal Impact (if any):

None.

Attachments

TWIC2018ReferralReport

Status Report: Referrals to the Transportation, Water, and Infrastructure Committee - 2018

Submitted: February 11, 2019 TWIC Meeting

Referral	Status
<p>1. Review legislative matters on transportation, water, and infrastructure.</p>	<ul style="list-style-type: none"> • Recommended the Board of Supervisors (BOS) ADOPT positions of various state transportation bills as follows (Various Dates): <ul style="list-style-type: none"> • Greenhouse Gas Reduction Fund: Senior & Disabled Transportation. • SB 914 – Construction Manager at Risk: Support • Coalition Against Bigger Trucks: Weight/Length Limitations (Federal): support • Received reports regarding the status of the Iron Horse Corridor relative to legacy obligations to the State. Various Dates. Related: Referral #s 12 & 15(b). • Monitored SB 1/RMRA activities in compliance with new requirements. April • Recommended that the Board of Supervisors approve the County's legislative proposal, "Seniors/Persons with Disabilities Transportation Funding Program" September • The Committee provided recommendations to the full BOS for revisions to the County's state and federal legislative platforms. September, October, November • The Committee forwarded a recommendation to the full BOS to transmit a letter to MTC regarding the CASA housing initiative. September
<p>2. Review applications for transportation, water and infrastructure grants to be prepared by the Public Works and Conservation and Development Departments.</p>	<ul style="list-style-type: none"> • The Committee reviewed and approved (for distribution to the BOS) Active Transportation Grants to MTC and Caltrans. July • The Committee reviewed and approved (for distribution to the BOS) a Caltrans Sustainable Transportation Planning Grants for the March Creek MultiModal Corridor Project. October
<p>3. Monitor the Contra Costa Transportation Authority (CCTA) including efforts to implement Measure J.</p>	
<p>4. Monitor EBMUD and Contra Costa Water District projects and activities.</p>	

Referral	Status
<p>5. Review projects, plans and legislative matters that may affect the health of the San Francisco Bay and Delta, including but not limited to conveyance, flood control, dredging, climate change, habitat conservation, governance, water storage, development of an ordinance regarding polystyrene foam food containers, water quality, supply and reliability, consistent with the Board of Supervisors adopted <i>Delta Water Platform</i>.</p>	<ul style="list-style-type: none"> • The Committee received several reports on the Flood Control Capital Improvement Plan for fiscal years 2017/2018 to 2023/2024. September • Received a report on the MRP 2.0 Implementation Plan, sent the item to the full BOS. October
<p>6. Review and monitor the establishment of Groundwater Sustainability Agencies and Groundwater Sustainability Plans for the three medium priority groundwater basins within Contra Costa County as required by the Sustainable Groundwater Management Act.</p>	<ul style="list-style-type: none"> • Received a report on implementation of the Sustainable Groundwater Management Act of 2014 (SGMA) November
<p>7. Review issues associated with County flood control facilities.</p>	<ul style="list-style-type: none"> • The Committee received several reports on the Flood Control Capital Improvement Plan for fiscal years 2017/2018 to 2023/2024. September
<p>8. Monitor creek and watershed issues and seek funding for improvement projects related to these issues.</p>	<ul style="list-style-type: none"> • Related items in #5
<p>9. Monitor the implementation of the Integrated Pest Management (IPM) policy.</p>	<p><i>TWTC staff requested that the 2018 be brought to the Committee in 2019</i></p>
<p>10. Monitor the status of county park maintenance issues including, but not limited to, transfer of some County park maintenance responsibilities to other agencies and implementation of Measure WW grants and expenditure plan.</p>	<ul style="list-style-type: none"> • Received a report on Measure WW implementation. November

Referral	Status
<p>12. Monitor the implementation of the County Complete Streets Policy.</p>	<ul style="list-style-type: none"> • The Committee received an update from staff on the implementation of Complete Streets policies and the related Vision Zero effort. July • The Committee reviewed and approved bringing the Contra Costa Centre I-680/Treat Boulevard Bicycle and Pedestrian Plan to the full Board of Supervisors for approval and authorized staff to seek implementation funding. April • Accepted the <i>2018-19 - 2024/25 CRIPP Report</i>, referred the item to the full BOS for public hearing and approval. October
<p>11. Monitor and report on the East Contra Costa County Habitat Conservation Plan (HCP).</p>	<ul style="list-style-type: none"> • Received the ECCCHCP's "Year in Review Report" September
<p>13. Monitor and report on the Underground Utilities Program.</p>	<ul style="list-style-type: none"> • Activities also relate to Referral #15b
<p>14. Monitor implementation of the Letter of Understanding (LOU) with PG&E for the maintenance of PG&E streetlights in Contra Costa.</p>	<ul style="list-style-type: none"> • Received a status report on street light service coordination effort between PG&E and the County Public Works Department. October
<p>15a. Freight transportation issues, including but not limited to potential increases in rail traffic such as that proposed by the Port of Oakland and other possible service increases, safety of freight trains, rail corridors, and trucks that transport hazardous materials, the planned truck route for North Richmond; and the deepening of the San Francisco-to-Stockton Ship Channel.</p>	
<p>15b. Monitor the Iron Horse Corridor Management Program.</p>	<p>See referral #1 for related activities.</p>
<p>16. Monitor and report on the eBART Project.</p>	

Referral	Status
<p>17. Review transportation plans and services for specific populations, including but not limited to County Low Income Transportation Action Plan, Coordinated Human Services Transportation Plan for the Bay Area, Priorities for Senior Mobility, Bay Point Community Based Transportation Plan, Contra Costa County Mobility Management Plan, and the work of Contra Costans for Every Generation.</p>	<ul style="list-style-type: none"> ● See Referrals #2, 3 for related actions. ● The Committee received a report on the Accessible Transportation Strategic Plan. November ● Received a report from Mobility Matters on their Rides 4 Veterans Program. September
<p>18. Monitor issues of interest in the provision of general transportation services, including but not limited to public transportation and taxicab, transportation network companies.</p>	<ul style="list-style-type: none"> ● Received a report and provided direction on the status of the effort to establish a taxicab ordinance for the unincorporated areas. February
<p>19. Monitor the statewide infrastructure bond programs.</p>	
<p>20. Monitor implementation and ensure compliance with the single-use carryout bag ban consistent with Public Resources Code, Chapter 5.3 (resulting from Senate Bill 270 [Padilla – 2014]).</p>	
<p>21. Monitor efforts at the State to revise school siting guidelines and statutes.</p>	<ul style="list-style-type: none"> ● Received a joint report from CCHS, the Hazardous Materials Commission, and DCD that included recommendations to the State relative to the Title 5 (School Siting) update process. TWIC recommended that a letter to the State including the comments be brought to the full BOS. The letter was transmitted in May. March/May <p><i>(Related: In January 2019 CSAC staff reached out to County staff requesting a copy of our school siting reform proposals.)</i></p>
<p>22. Monitor issues related to docked and dockless bike share programs.</p>	<ul style="list-style-type: none"> ● Received a report on dockless bikeshare and directed staff to develop policies and agreements in a collaborative manner with interested parties. March ● Provided further direction to staff relative to the adoption of an ordinance. July
<p>23. Monitor efforts related to water conservation including but not limited to turf conversion, graywater, and other related landscaping issues.</p>	<p>The Committee received a report on the status of the Contra Costa County Green Infrastructure Plan Update. July</p>



Contra Costa County Board of Supervisors

Subcommittee Report

TRANSPORTATION, WATER & INFRASTRUCTURE COMMITTEE

11.

Meeting Date: 02/11/2019

Subject: REVIEW Communication, News, Miscellaneous Items of Interest to the Committee and DIRECT staff as appropriate.

Submitted For: TRANSPORTATION, WATER & INFRASTRUCTURE COMMITTEE,

Department: Conservation & Development

Referral No.: N/A

Referral Name: N/A

Presenter: John Cunningham, DCD

Contact: John Cunningham
(925)674-7833

Referral History:

"Communication, News, Miscellaneous Items of Interest" is a standing item on the TWIC agenda.

Referral Update:

Communication Received:

CCTA

- CCTA 2018 Activities and Accomplishments Report
- January "Items of Interest" report

Leland Frayseth - Resident

Email Re: Los Vaqueros Dam Erosion

News/Articles/Editorials/Etc:

"Transport Topics", December 2018: Rep. DeFazio on Earmarks Ban: 'Don't Think We Need That Rule'

Recommendation(s)/Next Step(s):

RECEIVE information and DIRECT staff as appropriate.

Fiscal Impact (if any):

N/A

Attachments

January 16, 2019 RTPC Memo ("Items of Interest")

Rep. DeFazio on Earmarks Ban_ 'Don't Think We Need That Rule'_ Transport Topics

LelandFraysethLVersion

CCTA - 2018_Accomplishments.pdf 02-11-19 TWIC Meeting Agenda Packet - Pg. 210 of 311



COMMISSIONERS

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Robert Taylor,
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Janet Abelson

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Tom Butt

Loella Haskew

David Hudson

Karen Mitchoff

Julie Pierce

Kevin Romick

Renata Sos

Randell H. Iwasaki,
Executive Director

MEMORANDUM

To: Matt Todd, TRANSPAC
Lisa Bobadilla, SWAT
Jamar Stamps, TRANSPLAN
Cedric Novenario, TVTC
John Nemeth, WCCTAC
Derek Farmer, LPMC

From: *MR for:*
Randell H. Iwasaki, Executive Director

Date: January 22, 2019

Re: Items of interest for circulation to the Regional Transportation Planning
Committees (RTPCs)

At its January 16, 2019 meeting, the Authority discussed the following item, which may be of interests to the Regional Transportation Planning Committees:

- 1. Quarterly Project Status Report (QPSR).** This report outlines the status of current Measure projects. It also lists all completed projects. *The Authority Board approved the attached QPSR for October–December 2018.*

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Suite 100
Walnut Creek
CA 94597
PHONE: 925.256.4700
FAX: 925.256.4701
www.ccta.net



QUARTERLY PROJECT STATUS REPORTS

October - December 2018



CONTRA COSTA
transportation
authority



ON-GOING PROJECTS

A. PROJECTS MANAGED BY AUTHORITY

1106S2	I-680 Auxiliary Lanes – Segment 2	1
● 5002	State Route 4: Mokelumne Bike Trail/Pedestrian Crossing	3
5005	State Route 4: Balfour Road Interchange – Phase 1	5
6001	Interstate 680/State Route 4 Interchange Improvements: State Route 4 Widening – Phase 3	7
6002/6004	State Route 242/Clayton Road Ramps	9
● 6006	State Route 4 Operational Improvements: Interstate 680 to Bailey Road	11
● 7002	Interstate 80/San Pablo Dam Road Interchange Improvements	13
7003	Interstate 80/Central Avenue Interchange Improvements	15
8001	Interstate 680 Carpool Lane Completion/Express Lanes	17
● 8009	Innovate 680	19
● 10001-06	Shared Autonomous Vehicle Pilot Program	21
28002	State Route 4 (SR4) Integrated Corridor Management (ICM).....	23

B. PROJECTS MANAGED BY BOTH AUTHORITY AND OTHER AGENCIES

1001/1698	Caldecott Tunnel Fourth Bore	25
3001/1407	State Route 4 East Widening: Somersville Road to State Route 160	27
4001	Hercules Rail Station	29

C. PROJECTS MANAGED BY OTHER AGENCIES

1216/24003	Pacheco Boulevard Improvements	31
● 1222	Operational Improvements on Parallel Arterials	33
1723	Danville Road and Street Preservation	35
2001/2101	East County Rail Extension (eBART) (new)	37
4002/27001	Martinez Intermodal Station – Phase 3	39
10001-03	Comprehensive Wayfinding System for Central Contra Costa BART Stations	41
● 10001-04	Electronic Bicycle Facilities at Central Contra Costa BART Stations	43
10001-05	Concord BART Plaza Redesign.....	45
10001-07	Pleasant Hill Parking Structure Elevator Renovation	47
10001-08	Walnut Creek BART TOD Public Access Improvements.....	49
10002-01	Transit Oriented Development and Access Improvements at West Contra Costa BART Stations	51
10002-03	Electronic Bicycle Facilities at West Contra Costa BART Stations	53
● 10002-05	Comprehensive Wayfinding System for West Contra Costa BART Stations	55
10002-07	El Cerrito del Norte BART Station	57
10003-03	Lafayette BART Bike Station.....	59
10003-07	Lafayette Station Site Improvements.....	61
10003-08	Downtown Orinda Streetscape Master Plan	63
24004	Kirker Pass Road Truck Lanes (Northbound)	65
24011	Downtown Corridors Traffic Improvements	67
24012	Farm Bureau Road Safe Route to Schools	69
24014	St. Mary’s Road - Rheem Boulevard and Bollinger Canyon Road Roundabouts	71
24016	Canyon Road Bridge Replacement	73

ON-GOING PROJECTS

C. PROJECTS MANAGED BY OTHER AGENCIES (continued)

24022	Crow Canyon Road Pavement Rehabilitation	75
24024	Danville Boulevard/Orchard Court Complete Streets Improvements	77
24031	Alhambra Creek Bridge and Ferry Street Enhancements	79
24032	Clayton Major Streets Improvements	81
28003	Main Street Downtown Improvements – Norcross Lane to 2nd Street	83

 Indicates delay in schedule, increase in cost and/or increase in funding shortfall since last update

COMPLETED PROJECTS

SOUTHWEST COUNTY

Measure C

1104	I-680/Stone Valley Road Interchange, 1998
1105	I-680/El Cerro Boulevard Interchange Ramp Signalization, 1994
1106	I-680 Auxiliary Lanes Segments 1 and 3, 2007
1107	I-680/Fostoria Way Overcrossing, 1994
1214	Commerce Avenue Extension, 2015
1600	Moraga Road Safety Improvements, 2005
1602	Camino Pablo Carpool Lots, 1996
1607	Moraga Way at Glorietta Boulevard and Camino Encinas, 2001
1608	Moraga Way Safety Improvements, 2002
1609	Moraga Way /Ivy Drive Roadway Improvements, 2004
1611	Mt. Diablo Corridor Improvements, 2001
1612	Moraga Road Corridor Improvements, 2005
1621	St. Mary's Road – Phase 2, 1999
1622	Moraga Road Structural and Safety Improvements, 2005
1623/1623W	Santa Maria Intersection Improvements, 2016
1624	Bryant Way/Moraga Way Improvements, 2005
1625/ 1625SW	Moraga Way Rehabilitation and Improvements, 2011
1711	St. Mary's Road Improvements, 1995
1715	San Ramon Valley Boulevard Improvements – Phase 1, 1996
1716	Stone Valley Road Circulation Improvements, 2003
1717	Camino Tassajara Circulation Improvements, 2004
1718	Crow Canyon Road Improvements, 2001
1719	Sycamore Valley Road Improvements, 2008
1720	San Ramon Valley Boulevard Widening – Phase 1, 1997
1722	Santa Maria Park and Ride Lot Slide Repair, 2017
1801	Camino Pablo (San Pablo Dam Corridor), 1996
2206	I-680/Sycamore Valley Road Park & Ride, 1998
2209	San Ramon Intermodal Transit Facility, 1996
3101	Iron Horse Trail – Monument to Alameda County Line, 1994
3103	Reliez Valley Road Trail – Phase 2, 2003
3106	St. Stephens/Bryant Way Trail, 1998

Measure J

10003-02	Electronic Bicycle Facilities - Southwest County BART Stations, 2016
10003-06	Orinda BART Downtown Access Ramp and Lighting, 2018
24010	Olympic Boulevard/Reliez Station Road, 2017
24015	Rheem Boulevard Landslide Repair and Repaving, 2017
24017	Camino Pablo Pavement Rehabilitation, 2016
24018	Ivy Drive Pavement Rehabilitation – Phase 2, 2017
24021	Alcosta Boulevard Pavement Rehabilitation, 2016

CENTRAL COUNTY

Measure C

1101	I-680/Burnett Avenue Ramps, 1995
1103	I-680/North Main Street Bypass, 1996

COMPLETED PROJECTS

CENTRAL COUNTY Measure C (continued)

1108	Route 242/Concord Avenue Interchange, 1997
1113	Route 242 Widening, 2001
1116	I-680 HOV Lanes, 2005
1117	I-680/SR4 Interchange, 2009
1203	Alhambra Avenue Widening, 2011
1205	Taylor Boulevard/Pleasant Hill Road/Alhambra Road Intersection Improvements, 2000
1209	South Broadway Extension, 1996
1210	Monument Boulevard/Contra Costa Boulevard/Buskirk Avenue Improvements, 1996
1215	Geary Road Improvements, 2002
1217	Bancroft/Hookston Intersection, 2004
1218	Buskirk Avenue Improvements, 2005
1219	Iron Horse Trail Crossing at Treat Boulevard, 2010
1220	Ygnacio Valley Road Slide Repair, 2008
1221	Contra Costa Boulevard Signal Coordination 2009
2208	Martinez Intermodal Facility – Phase 1, 2001
2208	Martinez Intermodal Facility - Phase 2, 2006
2210	Pacheco Transit Hub, 2014
2296	Martinez Bay Trail, 2007
3102	Walnut Creek Channel to CC Shoreline Trail, 2001

Measure J

8002	I-680 Southbound Carpool Lane Extension (restripe), Nov 2011
24005	Court Street Overcrossing – Phase 1, 2014
24006	Buskirk Avenue Widening – Phase 2, 2014
24007	Geary Road Reconstruction – Phase 3
24013	Salvio Street Complete Streets – Sidewalk, 2017
24026	Contra Costa Boulevard Improvements, December 2014
24027	Ygnacio Valley Road Permanent Restoration – Phase 2, 2015
24028	Clayton Road/Treat Boulevard/Denkinger Road Intersection Capacity Improvements, 2018
24029	Old Marsh Creek Road Overlay, 2010

WEST COUNTY

Measure C

1300	Richmond Parkway, 1996
1501	SR4 (W) Gap Closure – Phase 1, 2002
1503	SR4 (W) Willow Avenue Overcrossing, 1996
2302	Richmond Transit Village BART Parking Structures, 2015
2303	Hercules Transit Center, 2009
3111	Atlas Road Bridge, 2017
9002	Richmond Parkway Lighting, 2017
10002-01	BART – Transit Oriented Development (TOD) and Access Improvements at El Cerrito Plaza and del Norte BART Stations, 2014

Measure J

7005	Interstate 80 Integrated Corridor Mobility, 2016
9001	Richmond Parkway Upgrade Study, 2008
9003	Marina Bay Parkway Grade Separation, 2016

COMPLETED PROJECTS

EAST COUNTY

Measure C

1401	SR4 (E) Willow Pass Grade Lowering, 1995
1402	SR4 (E) Bailey Road Interchange, 1996
1403	SR4 (E) Bailey Road to Railroad Avenue, 2001
2101	BART Extension to Pittsburg/Bay Point, 1996
3003	State Route 4 East Widening: Loveridge Road to Somersville Road, 2014
3110	Marsh Creek Trail Overcrossing at SR4, 1997
3112	Big Break Regional Trail, 2010

Measure J

2002	Pittsburg Civic Center Station, 2018
5001	State Route 4/State Route 160 Connector Ramps, 2016
5006	Vasco Road Safety Improvements Project – Phase 1, 2011
5010	SR4 Bypass: Segments 1 and 3, 2008
5002/5003	State Route 4: Widen to 4 Lanes – Laurel Road to Sand Creek Road & Sand Creek Road Interchange, 2015

ACRONYMS AND ABBREVIATIONS

AB 1171	Assembly Bill 1171
ABAG	Association of Bay Area Governments
ARRA	American Recovery and Reinvestment Act of 2009
ATP	Active Transportation Program
BAIFA	Bay Area Infrastructure Financing Authority
CCWD	Contra Costa Water District
CMAQ	Congestion Mitigation and Air Quality Improvement Program
CMIA	Corridor Mobility Improvement Account
ECCRFFA	East Contra Costa Regional Fee and Financing Authority
EEMP	Environmental Enhancement and Mitigation
IIP	Interregional Improvement Program
IMD	Interstate Maintenance Discretionary Funds
HM7	Maintenance program for radio communications
LWCF	Land and Water Conservation Fund
LPP	Local Partnership Program in SB1
PPM	Planning, Programming, and Monitoring
RIP	Regional Improvement Program
RM 1	Regional Measure 1
RM 2	Regional Measure 2
PBTF	Pedestrian, Bicycle, and Trail Facilities (Measure J program)
RTIP	Regional Transportation Improvement Plan
SCCR	South Contra Costa Regional Fee
SHOPP	State Highway Operation and Protection Program
SLPP	State Local Partnership Program
STA	State Transit Assistance
STIP	State Transportation Improvement Program
TBD	To be determined (funding not currently identified)
TDA	Transportation Development Act
TE	Transportation Enhancement
TCRP	Traffic Congestion Relief Program
TIGER II	Transportation Investment Generating Economic Recovery II
TLC	Transportation for Livable Communities (Measure J program)
TVTDF	Tri-Valley Transportation Development Fee
WCCTAC	West Contra Costa Transportation Advisory Committee – Subregional Transportation Mitigation Program

Project Interstate 680 Auxiliary Lanes, Segment 2 (# 1106S2)
Sponsor Contra Costa Transportation Authority
Subregion Southwest County

Scope

Construct auxiliary lanes between Crow Canyon Road in San Ramon and Sycamore Valley Road in Danville along I-680 in both directions. The project is the last segment of auxiliary lanes in both directions of I-680 between Bollinger Canyon Road in San Ramon and Diablo Road in Danville.

Status

- The auxiliary lanes were opened to traffic in July 2014.
- The field work for the landscaping and first year of plant establishment was accepted by Caltrans at the end of April 2018.
- The Authority awarded a 4-year plant establishment and maintenance contract CT478 to Bortolussi & Watkin (B&W) on March 21, 2018. Work under this contract started on April 25, 2018.

Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- Four-year plant establishment period is underway. The plants and trees are doing well and have noticeably grown.
- A final report on the use of SLPP funds was submitted to Caltrans.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	Complete
Design	Complete
Right of Way and Utilities	Complete
Construction	Complete
Post Construction	2015-2022

Estimated Cost by Project Phase (\$ 000s)

	<i>Amount</i>
Project Management	\$983
Planning	—
Environmental Clearance	—
Design	3,834
Right of Way and Utilities	10
Construction	27,664
Construction Management	4,336
Total	\$36,827

Funding by Source (\$ 000s)

	<i>Amount</i>
SCCR	\$7,100
TVTDF	7,800
IMD	3,200
STIP	18,000
SLPP	1,000
Total	\$37,100

Project Interstate 680 Auxiliary Lanes, Segment 2 (# 1106S2) – continued

Major Project Contracts Managed by Authority

Contract/ Resolution No.	Amend No.	Expiration Date	Agency Consultant	Description	Appropriated Amount	Billed to Date (10/31/2018)	Estimate at Completion	Percent Billed	Percent Physically Complete
317	1	12/31/2019	Mark Thomas & Co.	Design Services for I-680 Auxiliary Lane –Segment 2	\$3,705,000	\$3,221,243	\$3,515,000	86.9%	100%
336	8	12/31/2018	S&C Engineers, Inc.	Construction Management Services for I-680	\$2,048,670	\$2,030,220	\$2,048,670	99%	99.5%
407	1	6/30/2018	Bortolussi & Watkin, Inc.	Landscaping Contract	\$1,807,586	\$1,678,594	\$1,762,586	92%	100%
478	—	5/25/2022	Bortolussi & Watkin, Inc.	Plant Establishment and Maintenance	\$611,000	\$132,935	\$611,000	21.7%	15%

Project State Route 4 Mokelumne Bike Trail/Pedestrian Overcrossing (portion of # 5002)
Sponsor Contra Costa Transportation Authority
Subregion East County

Scope

Construct a pedestrian and bicycle overcrossing (POC) near the Mokelumne Trail at SR 4. The overcrossing will include a multi-span bridge with columns in the SR 4 median. The bridge approaches will be constructed on earthen embankments.

Status

- The CEQA clearance is complete.
- The current focus is to obtain approval of Caltrans Permit Engineering Evaluation Report (PEER).
- 100% design is currently being developed.
- Right of Way appraisals are underway.

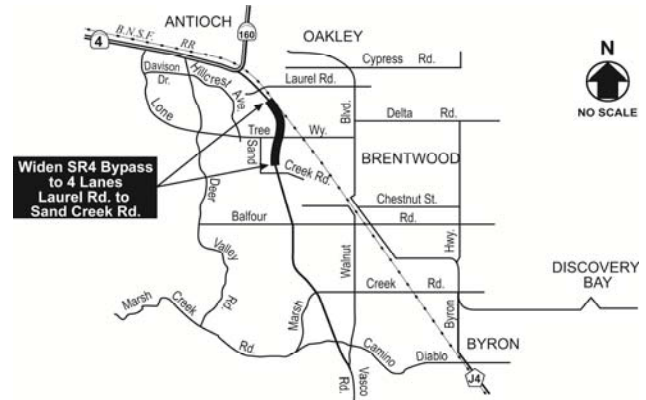
Issues/Areas of Concern

- Construction funding for the project has not been secured.
- Project costs may escalate as schedule is impacted by funding shortfall.
- The NEPA clearance, if needed, may be problematic.
- BART's eBART Next Segment Study identifies a potential future station in the vicinity of the Mokelumne Trail POC.

Update from Previous Quarterly Report

- The project team is working with Caltrans on the approval of the Permit Engineering Evaluation Report (PEER) and Encroachment Permit.
- Staff is assisting with facilitation of the maintenance agreement between Caltrans and the City of Brentwood.
- Addendum #14 to the environmental document for the SR4 Bypass Project was approved by the SR4 Bypass Authority to reflect the latest POC design.
- Agreement No. 511 with East Contra Costa Irrigation District (ECCID) was approved on October 17, 2018 for Fee-for-Services related to Right-of-Way and approval of project.
- Cost has been updated based on latest information.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	Complete
Design	2014-2019
Right of Way and Utilities	2018-2019
Construction	2019-2020
Post Construction	—

Estimated Cost by Project Phase (\$ 000s)

	<i>Amount</i>
Project Management	\$45
Planning	—
Environmental Clearance	—
Design	872
Right of Way and Utilities	1,380
Construction	8,845
Construction Management	1,025
Total	\$12,167

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$522
Measure J – BART	150
BART	200
ECCRFA	1,270
TBD	10,025
Total	\$12,167

Project State Route 4 Mokelumne Bike Trail/Pedestrian Overcrossing (portion of # 5002) – continued

Major Project Contracts Managed by Authority

Contract No.	Amend No.	Contract Expiration	Agency/ Consultant	Description	Appropriated Amount	Billed to Date (10/31/2018)	Estimate at Completion	Percent Billed	Percent Physically Complete
358	1	6/30/2019	Mark Thomas & Company, Inc.	PS&E	\$872,000	\$603,738	\$872,000	69%	85%
511	—	10/17/2021	East Contra Costa Irrigation District (ECCID)	ROW and Project Approval	\$3,000	\$0	\$3,000	0%	0%

Project State Route 4 Balfour Road Interchange – Phase 1 (# 5005)
Sponsor Contra Costa Transportation Authority/SR 4 Bypass Authority
Subregion East County

Scope

Construct a new SR 4 bridge crossing over Balfour Road in Brentwood providing one southbound and one northbound lane for SR 4; northbound and southbound SR 4 loop on-ramps, servicing both westbound and eastbound Balfour Road traffic; and northbound and southbound SR 4 diagonal off-ramps.

Status

- Project is in the construction phase.
- The notice-to-proceed (NTP) for the construction contract was issued on February 6, 2017.
- PG&E, Kinder Morgan, and AT&T utility relocation activities are complete.
- Ribbon cutting was held on December 10, 2018.

Issues/Areas of Concern

- There were concerns over night-time pile driving and noise impacts to residents. Construction phasing was changed for work to be performed during the day and be completed before school starts.

Update from Previous Quarterly Report

- The project was scheduled for completion in December 2018. However, due to temperature-sensitive paving operations, the completion of the project, which may include additional paving on local streets, is now expected to be Spring of 2019.
- Ribbon cutting held on December 10, 2018.
- Construction activities are concluding.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	Complete
Design	Complete
Right of Way and Utilities	Complete
Construction	2017-2019
Post Construction	—

Estimated Cost by Project Phase (\$ 000s)

	<i>Amount</i>
Project Management	\$1,651
Planning	—
Environmental Clearance	628
Design	4,939
Right of Way and Utilities	14,684
Construction	42,745
Construction Management	8,018
Total	\$72,665

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$46,000
ECCRFFA	26,000
CCWD	1,580
Total	\$73,580

Project SR 4 Balfour Road Interchange – Phase 1 (# 5005) – continued

Major Project Contracts Managed by Authority

Contract No.	Amend No.	Contract Expiration	Agency/ Consultant	Description	Appropriated Amount	Billed to Date (10/31/2018)	Estimate at Completion	Percent Billed	Percent Physically Complete
354	4	6/30/2016 / Closed	Quincy Engineering, Inc.	Design Services	\$4,938,891	\$4,938,823	\$4,938,891	100%	100%
369	2	6/30/2018 / Closed	Kinder Morgan	Design and Long Lead Procurement	\$3,530,000	\$3,400,761	\$3,400,761	96.3%	100%
404	2	12/31/2019	PSOMAS	Construction Mgmt. Services	\$6,710,400	\$6,057,730	\$6,710,400	90.2%	80%
410	2	6/30/2019	PG&E	Joint Trench	\$2,155,279	\$2,004,701	\$2,155,279	95.7%	99%
411	—	12/31/2017 / Closed	PG&E	Transmission Towers	\$1,895,280	\$1,007,946	\$1,007,946	53%	100%
419	1	12/31/2018	East Contra Costa Co. Habitat Conservancy	Habitat Conservation Plan	\$467,303	\$465,185	\$467,303	99.5%	100%
420	1	3/16/2021 / Closed	Kinder Morgan	Pipeline/Facility Relocation	\$7,237,500	\$6,972,227	\$6,972,227	96.3%	100%
427	—	6/30/2019	Brosamer & Wall/Bay Cities Joint Venture	Construction Services	\$37,973,146	\$34,564,197	\$40,811,317	91%	86%
430	2	12/31/2019	Quincy Engineering, Inc.	Design Services during Construction	\$1,307,395	\$1,048,379	\$1,327,964	80%	76%
436	—	12/31/2018	AT&T	Utility Relocation	\$400,410	\$400,410	\$400,410	100%	100%
441	1	3/16/2021	Kinder Morgan	Pipeline Inspection/Monitoring	\$390,000	\$219,473	\$390,000	56%	72%

Project	Interstate 680/State Route 4 Interchange Improvement: State Route 4 Widening, Phase 3 (# 6001)
Sponsor	Contra Costa Transportation Authority
Subregion	Central County

Scope

Construct three-level interchange, as follows:

- Phase 1 – NB I-680 to WB SR 4 connector.
- Phase 2 – EB SR 4 to SB I-680 connector.
- Phase 3 – SR 4 widening: Morello Avenue to SR 242 and replacement of Grayson Bridge.
- Phase 4 – SB I-680 to EB SR 4 connector.
- Phase 5 – WB SR 4 to NB I-680 connector.

Due to a funding shortfall, Phase 3 will be constructed first. The remaining phases will be constructed as funding becomes available.

Status

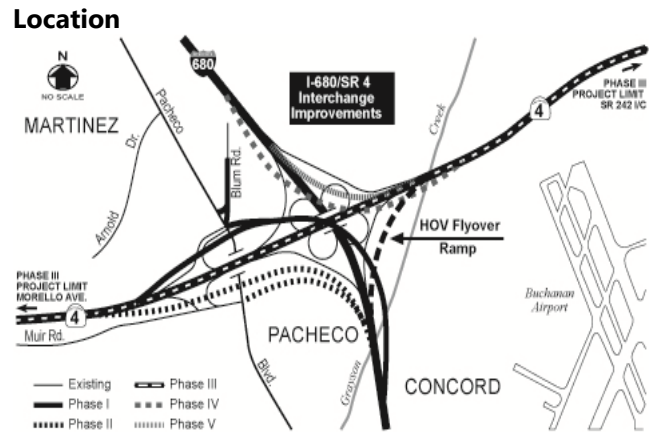
- Phase 3 construction contract was awarded on October 17, 2018.

Issues/Areas of Concern

- Funding has not yet been secured for future phases.

Update from Previous Quarterly Report

- Construction contract 505 was awarded to Brosamer & Wall by the Authority Board on October 17, 2018.
- Contractor obtained all necessary encroachment permits to mobilize to the site.
- Contractor is in process of submitting all documents needed to proceed with the work. All regulatory permits were received along with the mitigation requirements. Agreements with mitigation bank were executed.
- Utility relocation work was completed in November 2018.
- A need for temporary construction easement and permanent footing easement at Solano Creek requires an eminent domain process. Process was initiated; however, a work around right of way (ROW) certification was issued by Caltrans in March 2018. The full ROW was issued by Caltrans with an effective date to enter the easement on December 26, 2018.



Schedule

	Phase 3	Other Phases
Planning	Complete	Complete
Environmental Clearance	Complete	Complete
Design	Complete	TBD
Right of Way and Utilities	Complete	TBD
Construction	2018-2021	TBD
Post Construction	2020-2021	TBD

Estimated Cost by Project Phase (\$ 000s)

	Amount	
	Phase 3	Other Phases
Project Management	\$1,700	—
Planning	583	—
Environmental Clearance	2757	\$900
Design	10,111	32,400
Right of Way and Utilities	12,921	10,900
Construction	97,449	270,400
Construction Management	10,674	32,400
Total	\$136,195	\$347,000

Funding by Source (\$ 000s)

	Amount	
	Phase 3	Other Phases
Measure J	\$35,000	—
Measure C	17,300	—
STIP-RIP	23,900	—
SHOPP	21,596	—
LPP (formula)	4,799	—
LPP (competitive)	33,600	\$347,000
Total	\$136,195	\$347,000

Project Interstate 680/State Route 4 Interchange Improvement: State Route 4 Widening, Phase 3 (# 6001) – continued

Major Project Contracts Managed by Authority

Contract No.	Amend No.	Contract Expiration	Agency/ Consultant	Description	Appropriated Amount	Billed to Date (10/31/2018)	Estimate at Completion	Percent Billed	Percent Physically Complete
372	6	12/31/2018	WMH Corporation	Design	\$10,015,789	\$10,011,865	\$10,015,789	99.9%	100%
398	2	6/30/2020	Contra Costa Flood Control	Hydraulic Evaluation and Permitting	\$125,148	\$77,578	\$125,148	70%	75%
473	—	12/31/2021	The Hanna Group	Construction Management	\$9,414,978	\$329,437	\$9,414,978	3%	2%
493	—	12/31/2018	Elsie Gridley Mitigation Bank	Sale of Vernal Pool Establishment Credits	\$606,150	\$606,150	\$606,150	100%	100%
494	—	12/31/2018	Elsie Gridley Mitigation Bank	Reservation of Vernal Pool Establishment Credits	\$450,000	\$171,000	\$450,000	38%	50%
495	—	3/31/2021	WMH Corporation	Design Services during Construction	\$999,937	\$109,694	\$999,937	10%	0%
496	—	6/30/2021	Contra Costa Flood Control	Design on Lower Walnut Creek Restoration	\$190,000	\$190,000	\$190,000	100%	0%
505	—	12/31/2022	Brosamer & Wall	Construction Services	86,305,703	\$0	\$86,305,703	0%	0%

Project State Route 242/Clayton Road Ramps (# 6002/6004)
Sponsor City of Concord/Contra Costa Transportation Authority
Subregion Central County

Scope

Construct an interchange and local road improvements on SR 242 between I-680 and Concord Avenue to improve circulation within the Concord central business area. Improvements may include constructing an on-ramp and associated acceleration/weaving lane to northbound SR 242 near the intersection of Clayton Road and Market Street in Concord and an off-ramp and associated deceleration lane from southbound SR 242 near Clayton Road.

Status

- The Environmental Document (ED) was certified in December 2016 and the Project Report (PR) was approved in June 2017.

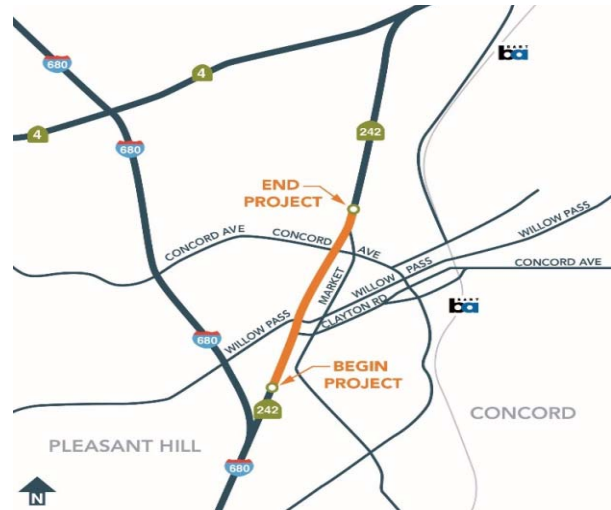
Issues/Areas of Concern

- The project has a significant funding shortfall.
- Conflicts between current project plan and recommendations from bicycle advocacy group will need to be addressed during final design.

Update from Previous Quarterly Report

- The project is on hold while funding for future phases is being identified.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	Complete
Design	TBD
Right of Way and Utilities	TBD
Construction	TBD
Post Construction	—

Estimated Cost by Project Phase (\$ 000s)

	<i>Amount</i>
Project Management	\$730
Planning	670
Environmental Clearance	2,400
Design	5,700
Right of Way and Utilities	16,200
Construction	40,200
Construction Management	6,800
Total	\$72,700

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$4,990
TBD	67,710
Total	\$72,700

Project State Route 242/Clayton Road Ramps (# 6002/6004) – continued

Major Project Contracts Managed by Authority

Contract No.	Amend No.	Contract Expiration	Agency/ Consultant	Description	Appropriated Amount	Billed to Date (10/31/2018)	Estimate at Completion	Percent Billed	Percent Physically Complete
321	4	9/29/2017 /Closed	WMH Corporation	Project Study Report/Project Development Support (PSR/PDS) and Project Approval/ Environmental Document (PA/ED)	\$2,442,582	\$2,442,499	\$2,442,582	100%	PSR/PDS 100% PA/ED 100%

Project State Route 4 Operational Improvements: Interstate 680 to Bailey Road – Initial Phase (# 6006)

Sponsor Contra Costa Transportation Authority/City of Concord
Subregion Central County

Scope

Initial Phase (Eastbound): 1) Replace the existing acceleration lanes at Port Chicago Highway (PCH) on ramp with an auxiliary (Aux) lane from PCH on ramp to Willow Pass Road off ramp. 2) Extend this Aux lane from Willow Pass Road off ramp to Willow Pass Road on ramp. 3) Add second exit lane San Marco Blvd off ramp.

Future Phases (as funding becomes available):

Eastbound

B/w Port Chicago Hwy Interchange (I/C) and Willow Pass Rd I/C

1) Add Aux lane b/w PCH on ramp & Willow Pass Rd off ramp.

B/w Willow Pass Rd I/C and San Marco Blvd I/C

2) Add Aux lane b/w Willow Pass Rd on ramp & San Marco Blvd off ramp.

At San Marco I/C

3) Add new mixed flow lane from San Marco Blvd off ramp to San Marco Blvd on ramp.

B/w San Marco Blvd I/C and Bailey Rd I/C

4) Add Aux lane from San Marco Blvd loop on ramp to existing deceleration lane at Bailey Rd off ramp.

From SR 242 off ramp to Port Chicago Highway off ramp

5) Extend existing mixed flow lane from I-680 on ramp to PCH off ramp.

Westbound

At SR242/SR4 I/C

6) Modify one of the existing mandatory exit lanes to SR242 to an optional exit lane, allowing 3 lanes to both SR242 exit and WB SR4.

From Port Chicago Hwy I/C to Willow Pass Rd I/C

7) Add mixed flow lane from Willow Pass Rd on ramp to existing mainline lane just east of Port Chicago Hwy (PCH) off ramp.

8) Add second exit lane at Port Chicago Highway off ramp.

9) Add Aux lane from Willow Pass Road on ramp to second exit to PCH.

At Willow Pass Rd I/C

10) Add mixed flow lane b/w Willow Pass off ramp & Willow Pass on ramp.

B/w Willow Pass Rd I/C and San Marco Blvd I/C

11) Add Aux lane b/w San Marco Blvd on ramp and Willow Pass off ramp.

At San Marco Blvd I/C & b/w San Marco Blvd I/C and Bailey Rd I/C

12) Extend existing acceleration lane at Bailey Rd on ramp to existing Aux lane b/w San Marco on ramp & Willow Pass off ramp.

Status

- PSR-PDS was approved in May 2017.
- The Initial Phase of the project is in the Project Approval/Environmental Document (PA/ED) Phase.

Issues/Areas of Concern

- The Overall Project has significant funding shortfall.

Update from Previous Quarterly Report

- Consultant team has begun the Data Collection task and has submitted Traffic Analysis Approach Memo to Caltrans for review
- Staff and consultant team is working with Caltrans to strategize on the type of ED for CEQA/NEPA clearance.
- Cost has been updated based on latest information.

Location



Schedule

	Initial Phase	Remaining Phases
Planning	Complete	Complete
Environmental Clearance	2018-2021	TBD
Design	2021-2022	TBD
Right of Way and Utilities	2021-2022	TBD
Construction	2023-2025	TBD
Post Construction	—	TBD

Estimated Cost by Project Phase (\$ 000s)

	Initial Phase	Remaining Phases
Project Management	\$314	—
Planning	834	—
Environmental Clearance	1,800	\$7,300
Design	7,500	22,900
Right of Way and Utilities	300	850
Construction	49,600	183,000
Construction Management	8,500	31,300
Total	\$68,848	\$245,350

Funding by Source (\$ 000s)

	Initial Phase	Remaining Phases
Measure J	\$4,515	—
STIP	7,500	—
STP	1,100	—
TBD (shortfall)	55,733	\$245,350
Total	\$68,848	\$245,350

Project State Route 4 Operational Improvements: Interstate 680 to Bailey Road – Initial Phase (# 6006) – continued

Major Project Contracts Managed by Authority

Contract No.	Amend No.	Contract Expiration	Agency/ Consultant	Description	Appropriated Amount	Billed to Date (10/31/2018)	Estimate at Completion	Percent Billed	Percent Physically Complete
391	4	12/31/2018	Mark Thomas & Co.	Project Study Report/Project Development Support (PSR/PDS)	\$640,000	\$640,000	\$640,000	100%	100%
499 (Task Order 1)	—	9/19/2018	Mark Thomas & Co	Project Approval/ Environmental Document (PA/ED)	\$1,603,529	\$2,668	\$1,603,529	1%	0%

Project Interstate 80/San Pablo Dam Road Interchange Improvements (# 7002)
Sponsor City of San Pablo/Contra Costa Transportation Authority
Subregion West County

Scope

Reconstruct the existing I-80/San Pablo Dam Road interchange (including modifications to the El Portal Drive and McBryde Avenue ramps) and provide improved pedestrian and bicycle facilities.

To match available funding, the project will be completed in two phases. The first phase will relocate the El Portal Drive on-ramp to westbound (WB) I-80 to the north, extend the auxiliary lane along WB I-80 between San Pablo Dam Road off-ramp and El Portal Drive on-ramp, and reconstruct the Riverside Avenue pedestrian overcrossing. Remaining improvements including the construction a new connector road on the west side of I-80 to connect SPDR to McBryde Avenue with a new bridge over Wildcat Creek, reconstructing the on- and off-ramps to SPDR, replacing the existing SPDR overcrossing with a 6-lane structure, and realigning Amador Street will be completed as part of the second phase when funding becomes available.

Status

- Construction of Phase 1 is complete.
- The new pedestrian overcrossing opened to the public on October 25, 2016.
- The new El Portal Drive on-ramp opened to traffic on Monday, February 20, 2017.
- The bridge has been accepted by Caltrans.

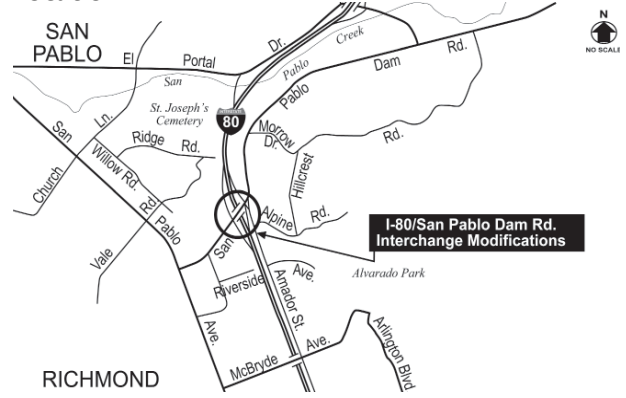
Issues/Areas of Concern

- Staff is coordinating with the City of San Pablo to determine EBMUD’s responsibility for the relocation cost of a water main along El Portal Drive.
- Phase 2 has a significant funding shortfall.

Update from Previous Quarterly Report

- The as-builts are currently being reviewed by Caltrans.
- WCCTAC approved allocation of \$436,000 in Subregional Transportation Mitigation Fees for Phase 1 at its meeting on December 14, 2018.

Location



Schedule

	Dates	
	Phase 1	Phase 2
Planning	Complete	Complete
Environmental Clearance	Complete	Complete
Design	Complete	2019-2020
Right of Way and Utilities	Complete	2020-2022
Construction	Complete	2022-2024
Post Construction	—	2024-2025

Estimated Cost by Project Phase (\$ 000s)

	Amount	
	Phase 1	Phase 2
Project Management	\$399	\$200
Environmental Clearance	2,239	—
Design	6,691	2,015
Right of Way and Utilities	7,971	14,000
Construction	22,200	56,500
Construction Management	3,006	8,035
Total	\$42,506	\$80,750

Funding by Source (\$ 000s)

	Amount	
	Phase 1	Phase 2
Measure J*	\$13,110	—
Local City	3,009	—
STIP-PPM	9	—
STIP	15,000	\$9,200
RM2	8,000	—
ATP	2,000	—
WCCTAC	1,136	5,964
EBMUD	242	—
TBD	—	65,586
Total	\$42,506	\$80,750

*\$1.1 million in Measure J was exchanged with STP funds from MTC.

Project Interstate 80/San Pablo Dam Road Interchange Improvements (# 7002) – continued

Major Project Contracts Managed by Authority

Contract No.	Amend No.	Contract Expiration	Agency/Consultant	Description	Appropriated Amount	Billed to Date (10/31/2018)	Estimate at Completion	Percent Billed	Percent Physically Complete
212	3	12/31/2010 / Closed	URS	PA/ED	\$2,238,684	\$2,238,684	\$2,238,684	100%	100%
316 ⁽¹⁾	4	12/31/2018	URS	Design	\$6,691,000	\$6,670,441	\$6,691,000	99.7%	99.8%
330	9	12/31/2018	S&C Engineers, Inc.	CM/Utilities	\$65,300	\$64,421	\$64,421	98%	100%
362	3	3/31/2025	Contra Costa County	Right of Way	\$802,900	\$765,701	\$802,900	95.5%	99%
370	1	12/31/2018	EBMUD	Design/Utilities	\$499,590	\$499,590	\$499,590	100%	100%
381	1	3/31/2025	PG&E	Utilities/Electrical	\$550,167	\$529,469	\$529,469	96%	100%
382	—	3/31/2025	AT&T	Utilities	\$31,049	\$0	\$31,049	0%	100%
384	—	3/31/2025	PG&E	Utilities/Gas	\$362,503	\$35,327	\$362,503	9%	0%
385	1	3/31/2025	EBMUD	Construction/Utilities	\$2,647,750	\$2,470,260	\$2,470,260	96%	100%
386	—	3/31/2025	WCWD	Utilities	\$6,250	\$5,845	\$6,250	91%	100%
415	2	12/31/2018 / Closed	The Hanna Group	Construction Services	\$2,869,102	\$2,869,098	\$2,869,102	100%	100%
416	1	12/31/2018	Brosamer & Wall	Construction	\$22,200,000	\$21,929,657	\$21,929,657	100%	100%
432	—	12/31/2017 / Closed	California Conservation Corps	Construction	\$28,530	\$0	\$28,530	0%	0%

(1) Design Services During Construction (DSDC) task was added to contract and funded from savings on completed tasks.

Project Interstate 80/Central Avenue Interchange Improvements (# 7003)
Sponsor City of Richmond/Contra Costa Transportation Authority
Subregion West County

Scope

Improve overall traffic operations at the I-80/Central Avenue interchange and along Central Avenue between Rydin Road and San Pablo Avenue. The project will be completed in two phases.

The first phase will redirect left turns from westbound Central Avenue onto westbound I-80 to the adjacent I-580 eastbound on-ramp at Rydin Road during weekend peak hours; and will install traffic signals at the I-580 ramps.

The second phase will increase the spacing between the signalized intersections east of I-80 by connecting Pierce Street and San Mateo Street, converting Pierce Street access at Central Avenue to "right-in, right-out," and relocating the traffic signal at Pierce Street/Central Avenue to the San Mateo Street/Central Avenue intersection.

Status

- Phase 1 construction activities are complete.
- Phase 2 (Local Roads Realignment project) is managed by the City of Richmond. Environmental Clearance phase is currently underway with completion expected in 2019.

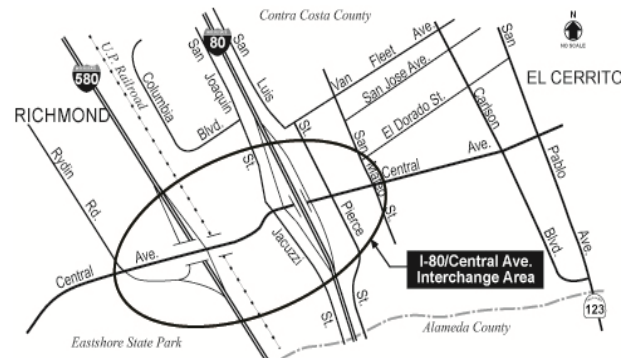
Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- Phase 1: Contractor is performing punch list activities. Post traffic analysis is underway.
- An action to decrease the construction allotment by \$34,166 was approved by the Authority Board on September 19, 2018.
- An action to decrease the construction allotment by \$8,394 was approved by the Authority Board on December 19, 2018.
- Amendment No. 2 to Contract 453 with Ghirardelli was approved by the Authority Board on September 19, 2018 for additional construction management services.
- Amendment No. 4 to Contract 406 with WSP was approved by the Authority Board on December 19, 2018 to provide additional DSDC and extend the term of the agreement.
- WCCTAC, at its meeting on December 14, 2018, approved programming \$485,000 in STMP funds for I-80/Central-Phase 2.
- At the January 2019 Authority Board meeting, approximately \$436,000 in Measure J funds will be proposed to be reprogrammed back to I-80/Central-Phase 2 in lieu of future STIP funds commitment.

Location



Schedule

	Dates	
	Phase 1	Phase 2
Planning	Complete	Complete
Environmental Clearance	Complete	2016-2019
Design	Complete	2019-2020
Right of Way and Utilities	—	2019-2021
Construction	Complete	2021-2023
Post Construction	—	—

Estimated Cost by Project Phase (\$ 000s)

	Amount	
	Phase 1	Phase 2
Project Management	\$805	—
Planning	—	—
Environmental Clearance	1,253	\$500
Design	1,122	2,000
Right of Way and Utilities	25	6,500
Construction	4,370	5,500
Construction Management	681	—
Total	\$8,256	\$14,500

Funding by Source (\$ 000s)

	Amount	
	Phase 1	Phase 2
Measure J	\$7,556	\$3,300
Federal Earmark	—	—
WCCTAC	—	627
STIP	—	7,773
Future MTC Commitment	—	2,800
City of Richmond	700	—
Total	\$8,256	\$14,500

Project Interstate 80/Central Avenue Interchange Improvements (# 7003) – continued

Major Project Contracts Managed by Authority

Contract No.	Amend No.	Expiration Date	Agency/ Consultant	Description	Appropriated Amount	Billed to Date (10/31/2018)	Estimate at Completion	Percent Billed	Percent Physically Complete
214	—	12/31/2013 / Closed	PB Americas, Inc.	Project Study Report (PSR) and Project Approval/ Environmental Document (PA/ED)	\$1,571,815	\$1,224,251	\$1,224,251	78%	100%
406	4	6/30/2019	WSP USA Inc. (formerly PB Americas, Inc.)	Plans, Specifications, and Estimates (PS&E)	\$1,130,207	\$1,084,070	\$1,130,207	96%	99%
445	—	12/31/2017	UPRR	Right of Entry	\$20,000	\$2,699	\$20,000	14%	100%
453 ⁽¹⁾	3	6/30/2019	Ghirardelli Associates	Construction Management Services	\$714,799	\$711,622	\$714,799	99.5%	99%
463	—	12/31/2019	Ghilotti Brothers	Construction	\$4,326,948	\$3,990,124	\$4,326,948	92%	99%

(1) An amendment for date extension was approved by the Authority Board on November 14, 2018.

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Expiration Date	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
16-50-P	10/19/2016	—	10/18/2019	City of Richmond	PA/ED, Design, and ROW	\$2,970,000	\$370,942	4/30/2018

Project Interstate 680 HOV Completion and Express Lanes Project (# 8001)
Sponsor Contra Costa Transportation Authority/MTC/Caltrans
Subregion Central County

Scope

Construct a high occupancy vehicle (HOV) lane on southbound I-680 between North Main Street in Walnut Creek and Rudgear Road in Alamo and convert the HOV lane to an express lane on southbound I-680 from just south of Marina Vista Avenue in Martinez to Rudgear Road in Walnut Creek.

Status

- Construction contract 491 was awarded to Bay Cities Paving & Grading, Inc. on July 18, 2018. Project is now under construction and the Authority is administering the construction contract.
- MTC will administer the construction contract for the installation of the Express Lane equipment which will follow the completion of the civil work under contract 491.
- Cost estimate does not include TransCore work currently estimated at \$12 million, which will be entirely funded by BAIFA.

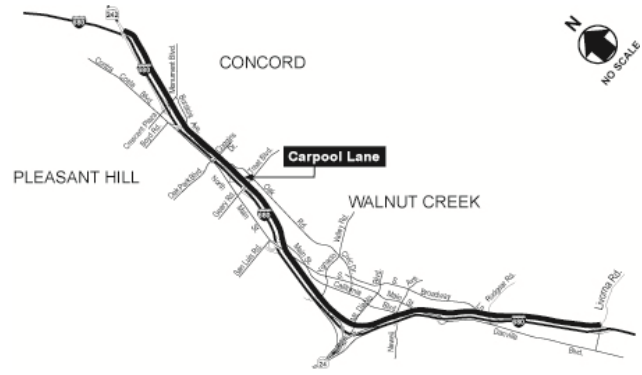
Issues/Areas of Concern

- The relocation of the backhaul fiber from Livorna to Olympic must be closely coordinated due to timing of the work. Schedule coordination has started and project team does not currently anticipate any impacts but will continue to monitor closely.

Update from Previous Quarterly Report

- All utility relocations were completed as of August 2018.
- Bay Cities Paving & Grading, Inc. started construction in October 2018.
- TransCore will submit tolling system 100% Plans, Specifications, and Estimate (PS&E) to Caltrans in December 2018 for permit.
- Construction progress can be followed at <https://680xpresslanesproject.com/home/>.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	Complete
Design	Complete
Right of Way and Utilities	Complete
Construction	2018-2021
Post Construction	2020-2021

Estimated Cost by Project Phase (\$ 000s)

	<i>Amount</i>
Project Management	\$1,885
Planning	—
Environmental Clearance	8,400
Design	9,900
Right of Way and Utilities	400
Construction	77,470
Construction Management	14,200
Total	\$112,255

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J*	\$40,000
RM2	19,400
STIP/RIP	15,600
BAIFA**	40,000
Total	\$115,000

*\$6.49 million is expected to be paid back by TVTC in FY2024 and FY2025.

** BAIFA will also fund TransCore work estimated at \$12 million bringing total funding to \$127 million.

Project Interstate 680 HOV Completion and Express Lanes Project (# 8001) – continued

Major Project Contracts Managed by Authority

Contract No.	Amend No.	Contract Expiration	Agency/ Consultant	Description	Appropriated Amount	Billed to Date (10/31/2018)	Estimate at Completion	Percent Billed	Percent Physically Complete
320	—	12/31/2014 / Closed	Parsons	Feasibility Study/ Environmental Clearance for I-680 HOV Completion	\$2,492,550	\$2,395,267	\$2,395,267	96%	100%
376	6	12/31/2018	HDR Engineering, Inc.	Feasibility Study/ Environmental Clearance / PS&E for Express Lanes and Design for I-680 HOV Completion	\$12,470,000	\$12,268,973	\$12,270,000	98.3%	100%
448	—	12/31/2020	WSP/Parsons Brinckerhoff	Construction Management Services	\$10,238,924	\$957,680	\$10,238,924	9.3%	10%
454	—	12/31/2018	Contra Costa County	ROW Acquisition Services	\$43,000	\$38,610	\$43,000	89%	89%
462	—	12/31/2018	PG&E	Utilities	\$20,000	\$0	\$20,000	0%	100%
476	—	9/20/2018 / Closed	ArborWorks, Inc.	Construction Services/Tree Removal	\$688,723	\$635,272	\$635,272	99%	100%
479, 480, 481, 482, 483, 484	—	12/31/2021	PG&E	Construction of Service Points on behalf of Caltrans	\$50,000	\$0	\$50,000	0%	0%
491	—	12/31/2021	Bay Cities	Construction Services	\$64,570,784	\$952,512	\$64,570,784	1%	2%
497	—	12/31/2021	HDR Engineering, Inc.	DSDC/ Landscape PS&E	\$1,099,492	\$53,319	\$1,099,492	4.8%	5%

Project Innovate 680 (# 8009)
Sponsor Contra Costa Transportation Authority
Subregion Central and Southwest County

Scope

Implement the following strategies:

Strategy No. 1: Complete HOV/Express Lanes

Eliminate the gap in existing carpool lanes in the NB direction and convert to an express lane to increase efficiency.

Strategy No. 2: Cool Corridor "Hot Spots"

Improve congestion "hot spots" caused by high-volume weaving areas around N. Main Street, Lawrence Way, Treat Blvd, and other locations south of SR 24 (Livorna Road, etc.). This strategy will be completed with Strategy 1 since they are interdependent.

Strategy No. 3: Increase Efficiency of Bus Service

Increase bus service efficiency by improving express bus service, implementing bus operations on shoulder (BOS), and increasing technology-based intermodal transit centers/managed park and ride lots.

Strategy No. 4: Enhance TDM Strategies

Provide enhanced 511 mobile app providing options to make informed decisions about mode choice, travel time, and cost per trip.

Strategy No. 5: Provide First Mile/Last Mile Connections

Implement Shared Autonomous Vehicles (SAVs) to improve transit connectivity and to shift travelers from Single Occupant Vehicles (SOVs).

Strategy No. 6: Innovative Operational Strategies

Deploy a suite of technology-based solutions to maximize the efficiency of the roadway system integrating adaptive ramp metering, integrated corridor management, incident management, and decision support systems.

Strategy No. 7: Prepare Corridor for the Future

Prepare corridor to accommodate the evolution of CV applications and AV technologies for improved traffic flow by building new and upgraded vehicle-to-infrastructure and vehicle-to-vehicle communications.

Status

- Caltrans approval of the final Project Study Report/Project Development Study for the I-680 NB Express Lane project (Strategies 1 & 2) was delayed as a new District Directive called to eliminate oversight costs to project sponsor was issued in November 2018.

Issues/Areas of Concern

- Significant funding is needed for all projects.
- BOS may require special legislation and will need CHP approval.

Update from Previous Quarterly Report

- The Authority approved the release of the RFP to procure Corridor Manager and Project Innovative Team to manage the program.
- I-680 NB Express Lane (Strategy 1 & 2)* – The Authority approved the release of the NB EL RFP to prepare Project Approval and Environmental Clearance of the project in September 2018.
- MTC has programmed an additional \$6 million in STP funds for project in September 2018 as part of a fund exchange agreement with the Authority.
- Bus on Shoulder (Strategy 3)* – Authority staff is in negotiation with selected consultant to prepare the PSR-PR and other documents for project approvals.

Location



Schedule

	NB HOV Strategy 1-2	BOS Strategy 3a	Technology Strategy 4-7	Bus Service Strategy 3b
Planning	2017-2018	2017-2019	2017-2019	2017-2019
Env. Clearance	2019-2021	2019-2020	2019-2020	2019-2020
Design	2020-2022	2020-2021	2020-2021	2019-2020
Right of Way/Utilities	2021-2022	2020-2021	2020-2021	2020-2021
Construction	2023-2025	2021-2022	2021-2022	2021-2022
Post Construction	—	—	—	—

Estimated Cost by Phase (\$ 000s)

	NB HOV Strategy 1-2	BOS Strategy 3a	Technology Strategy 4-7	Bus Service Strategy 3b
Project Management	\$4,500	\$200	\$900	\$600
Planning	600	400	1,000	600
Env. Clearance	15,450	500	2,900	1,000
Design	28,325	900	5,400	1,500
Right of Way/Utilities	5,000	—	—	12,000
Construction Mgmt.	38,625	1,100	6,500	3,500
Construction	257,500	6,000	36,000	39,000
Total	\$350,000	\$9,100	\$52,700	\$58,200

**operations costs estimated at \$18 million/year not included

Funding by Source (\$ 000s)

	NB HOV Strategy 1-2	BOS Strategy 3a	Technology Strategy 4-7	Bus Service Strategy 3b
Measure J*	\$6,584	\$4,100	\$18,200	\$6,116
STMP (TVTD)	—	—	2,000	—
MTC (STP)	14,205	—	—	—
Measure J (TLC)	—	—	—	1,500
SB1-LPP Formulaic	2,286	—	—	—
Regional Measure 3	75,000	5,000	1,800	3,200
TBD (shortfall)	251,925	—	30,700	47,384
Total	\$350,000	\$9,100	\$52,700	\$58,200

*\$4 million in Measure J funds was exchanged for STP funds.

Project Innovate 680 (# 8009) – continued

Major Project Contracts Managed by Authority

Contract No.	Amend No.	Contract Expiration	Agency/ Consultant	Description	Appropriated Amount	Billed to Date (10/31/2018)	Estimate at Completion	Percent Billed	Percent Physically Complete
--									

Project Shared Autonomous Vehicle Pilot Program (# 10001-06)
Sponsor Contra Costa Transportation Authority
Subregion Central County

Scope

The project will initiate the planning and testing required for the implementation of the Shared Autonomous Vehicle Pilot Program. Project activities include testing, design, and consensus building with stakeholders. Initial project testing will be conducted at the GoMentum Station site as well as on non-public roads within the Bishop Ranch Development.

Status

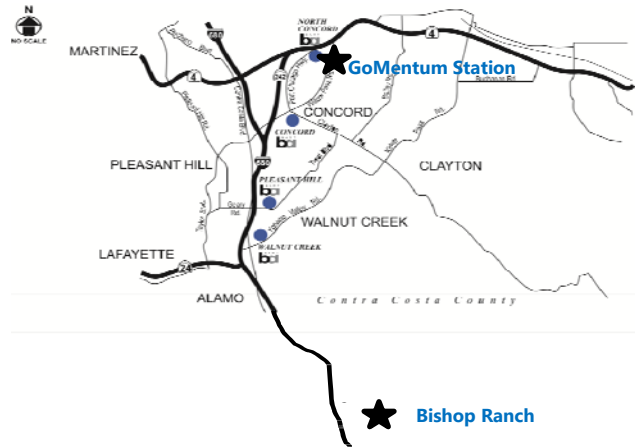
- Project is in the planning stages. Early deployment is anticipated to be at a BART station in Central County.
- Working on the approval of the First Mile/Last Mile concept

Issues/Areas of Concern

- Regulatory approval is needed.
- Complete funding has not been identified.
- Obtained DMV approval to allow SAV on public roads.

Update from Previous Quarterly Report

- Testing on public roads in the City of San Ramon through a signalized intersection is scheduled to occur in the first quarter of 2019.



Schedule

	<i>Dates</i>
Planning	2016-2020
Environmental Clearance	—
Design	2016-2021
Right of Way and Utilities	—
Construction	2020-2022*
Post Construction	—

*Construction refers to deployment of shuttles

Estimated Cost by Project Phase (\$ 000s)

	<i>Amount</i>
Project Management	\$950
Planning	829
Environmental Clearance	374
Design	2,676
Right of Way and Utilities	—
Construction	2,371*
Construction Management	—
Total	\$7,200

*Construction refers to deployment of shuttles

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$250
Private Funding	500
TFCA	1,000
State	1,500
TBD	3,950
Total	\$7,200

Project Shared Autonomous Vehicle Pilot Program (# 10001-06) - continued

Major Project Contracts Managed by Authority

Contract No.	Amend No.	Contract Expiration	Agency/ Consultant	Description	Appropriated Amount	Billed to Date (10/31/2018)	Estimate at Completion	Percent Billed	Percent Physically Complete
435	4	6/30/2019	Stantec	Project Management of SAV program	\$2,331,000	\$1,543,944	\$2,331,000	N/A	N/A

Project State Route 4 Integrated Corridor Management (ICM) (# 28002)
Sponsor Contra Costa Transportation Authority
Subregion East County

Scope

Use state-of-the-practice Intelligent Transportation System (ITS) technologies to enhance the effectiveness of the existing transportation system along State Route 4 (SR 4) and parallel/crossing arterials between State Route 160 and Interstate 80. Project elements include the following:

- Operational strategies based on real-time traffic conditions along the corridor (a.k.a. Decision Support System)
- Adaptive ramp metering
- Incident management with speed harmonization
- Traffic and transit Information System
- Arterial and transit improvements
- Connected Vehicle (CV) applications/technologies
- Integration with the I-80 ICM

The SR 4 ICM may be combined with one or more packages of the SR 4 Operational Improvements (Project 6006).

Status

- Project was awarded a FHWA Integrated Corridor Management Planning Grant.
- Completed SEMP 2 System Requirements Concepts of Operations report.

Issues/Areas of Concern

- Must compete for additional grants:
 - a) \$6 million for Phase 2 implementation
 - b) \$4.75 million CV Pilot Deployment

Update from Previous Quarterly Report

- Project is on hold pending future funding.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	2018-2019
Design	2019-2020
Right of Way and Utilities	2019-2020
Construction	2020-2022
Post Construction	—

Estimated Cost by Project Phase (\$ 000s)

	<i>Amount</i>
Project Management	\$2,250
Planning	340
Environmental Clearance	530
Design	2,175
Right of Way and Utilities	555
Construction	8,550
Construction Management	750
Total	\$15,150

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$200
FHWA	200
Measure J (Planning Funds)	200
TBD	14,750
Total	\$15,350

Project State Route 4 Integrated Corridor Management (ICM) (# 28002) – continued

Major Project Contracts Managed by Authority

Contract No.	Amend No.	Contract Expiration	Agency/ Consultant	Description	Appropriated Amount	Billed to Date (10/31/2018)	Estimate at Completion	Percent Billed	Percent Physically Complete
435	—	6/30/2019	Stantec	Project Management	\$315,000	\$315,000	\$315,000	100%	100%

Project Caldecott Tunnel Fourth Bore (# 1001/1698)
Sponsor Contra Costa Transportation Authority/Caltrans
Subregion Southwest County

Scope

Construct a new two-lane fourth bore between Contra Costa and Alameda counties along SR 24 north of the existing bores.

Status

- The new bore opened to traffic in November 2013.
- Caltrans accepted the tunnel construction contract on March 12, 2015.
- Final habitat restoration work is in progress.
- All planting work included in the landscaping project has been completed.
- The 3-year plant establishment period began in February 2016.

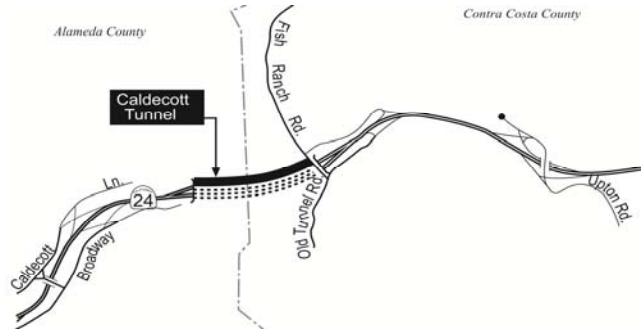
Issues/Areas of Concern

- CCTA and Caltrans are in discussions over the Caltrans administration and project support costs.

Update from Previous Quarterly Report

- Caltrans Accounting Unit completed the final accounting for project.
- CCTA has requested and will review the cost breakdown.
- Caltrans is seeking an extension to the Construction Cooperative Agreement to allow for completion of all reimbursement transactions.
- Landscaping plant establishment period will end in February 2019.
- Cost updated to reflect enhancement projects in Berkeley and Oakland, as well as final cost accounting provided by Caltrans.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	Complete
Design	Complete
Right of Way and Utilities	Complete
Construction	Complete
Post Construction	Complete

Estimated Cost by Project Phase (\$ 000s)

	<i>Amount</i>
Project Management	—
Planning	—
Environmental Clearance	\$20,487
Design	33,105
Right of Way and Utilities	1,100
Construction	301,295
Construction Management	57,164
Total	\$413,150

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$121,130
Federal Earmark (SAFETEA-LU)	1,440
STIP-RIP	4,000
STIP-IIP	15,300
TCRP	20,000
RM2	44,767
ARRA	195,129
CMIA	11,043
Maintenance HM7 (State)	350
Total	\$413,150

Project Caldecott Tunnel Fourth Bore (# 1001/1698) – continued

Major Project Contracts Managed by Authority

Contract No.	Amend No.	Contract Expiration	Agency/ Consultant	Description	Appropriated Amount	Billed to Date (10/31/2018)	Estimate at Completion	Percent Billed	Percent Physically Complete
261	10	9/30/2017 / Closed	Parsons	On-Call Design Services during Construction	\$9,228,000	\$9,227,119	\$9,227,119	99.9%	100%
262	4	6/30/2015 / Closed	PB Americas, Inc.	Construction Management	\$17,938,466	\$17,723,759	\$17,723,759	99%	100%

Project Sponsor Subregion	State Route 4 Widening: Somersville Road to State Route 160 (# 3001/1407) Contra Costa Transportation Authority/Caltrans East County
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Scope

Widen SR 4 East to eight lanes (three mixed flow lanes and one high occupancy vehicle lane in each direction) from Somersville Road to Hillcrest Avenue (plus auxiliary lanes) including a wide median for transit; and to six lanes (three mixed flow lanes in each direction) from Hillcrest Avenue to the interchange with SR 160 and the new SR 4 Bypass.

The project was constructed in five segments:

- Segment 1: Somersville Road to Contra Loma Blvd.
- Segment 2: Contra Loma Blvd. to A St./Lone Tree Way.
- Segment 3A: A St./Lone Tree Way to Hillcrest Ave.
- Segment 3B: Hillcrest Ave. to SR 160.
- Corridor-wide: Landscaping.

Status

Segment 1 – Somersville Interchange

- Segment was open to traffic in December 2013.

Segment 2 – Contra Loma Interchange & G St. Overcrossing

- Construction began in March 2012 and was completed in February 2016.

Segment 3A – A Street Interchange & Cavallo Undercrossing

- Construction began in August 2012 and was accepted as complete in May 2017.

Segment 3B – Hillcrest Avenue to SR 160

- Construction began in March 2013 and was substantially completed in September 2016 and closeout activities are ongoing. Bike safety improvements have been implemented.

Corridor-wide

- Ribbon cutting ceremony held on July 20, 2016.

Corridor Landscaping

- Contract 1 (Loveridge to Century) bids were opened in December 2017. Construction started in early 2018 with project completion, inclusive of the plant establishment period, in 2021.
- Contract 2 (Somersville to Cavallo) was advertised on March 12, 2018 and construction has started. Completion, inclusive of plant establishment, is anticipated to be in 2022/23.
- Contract 3 (Hillcrest to Laurel Rd. and on SR 160) design was completed and construction bid opened in December 2018. Completion, inclusive of plant establishment, is anticipated to be in 2022/23.

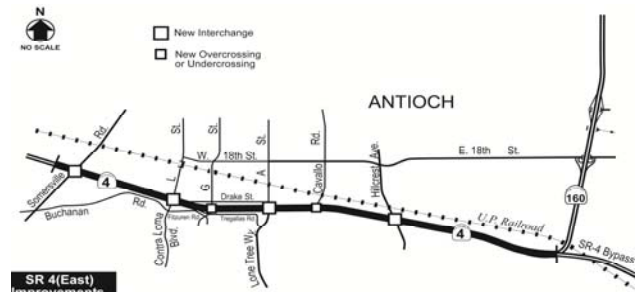
Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- The three corridor landscape contracts are all in the construction phase.

Location



Schedule

	<i>Dates</i>
Planning	—
Environmental Clearance	Complete
Design	Complete
Right of Way and Utilities	Complete
Construction (highway)	Complete
Construction (landscape)	2018-2019
Post Construction	2017-2022

Estimated Cost by Project Phase (\$ 000s)

	<i>Amount</i>
Project Management	—
Preliminary Studies/Planning	—
Environmental Clearance	\$400*
Design	35,500
Right of Way and Utilities	61,800
Construction	220,000
Construction Management	57,000
Total	\$374,700

*Under project 1406/3003

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure C	\$31,900
Measure J	94,100
CMIA	68,300
STIP/RIP	38,500
Federal (SAFETEA-LU)	1,600
Federal Earmark (other)	1,100
SLPP	24,400
Bridge Tolls (e-BART median)	64,000
Measure J (e-BART median)	26,000
Bridge Tolls (e-BART structures)	13,600
Measure J (e-BART structures)	15,300
City	1,800
Total	\$380,600

Project State Route 4 Widening: Somersville Road to State Route 160 (# 3001/1407) – continued

Major Project Contracts Managed by Authority

Contract No.	Amend No.	Contract Expiration	Agency/ Consultant	Description	Appropriated Amount	Billed to Date (10/31/2018)	Estimate at Completion	Percent Billed	Percent Physically Complete
183	—	Closed	Mark Thomas & Co.	Strategic Planning Study	\$78,432	\$78,432	\$78,432	100%	100%
202	5	12/31/2012 / Closed	Mark Thomas & Co.	Final Design	\$6,310,895	\$6,310,895	\$6,310,895	100%	100%
203	6	6/30/2012 / Closed	BKF Engineers	Final Design	\$7,197,373	\$7,197,373	\$7,197,373	100%	100%
204	8	12/31/2012 / Closed	TY Lin International	Final Design	\$15,491,438	\$15,491,438	\$15,491,438	100%	100%
208	8	12/31/2019	Contra Costa County Real Property	ROW Acquisition Svcs /Closeout	\$7,948,054	\$7,370,902	\$7,948,054	92.5%	93.5%
211	10	12/31/2018	Harris & Associates	Corridor Integration Team	\$3,719,411	\$3,710,142	\$3,719,411	99.7%	99.8%
219	1	12/31/2010 / Closed	PB Americas	Construction Management	\$93,058	\$93,058	\$93,058	100%	100%
270	2	6/30/2014 / Closed	Vali Cooper & Assoc.	Construction Management	\$3,630,881	\$3,630,881	\$3,630,881	100%	100%
271	6	6/30/2016 / Closed	Jacobs	Construction Management	\$5,133,375	\$4,926,777	\$4,926,777	96%	100%
284	4	6/30/2016 / Closed	Scott Systems, Inc.	Architectural Treatment	\$328,840	\$328,014	\$328,014	100%	100%
305	1	6/30/2015 / Closed	Mark Thomas & Co.	Design Svcs During Construction	\$625,000	\$617,560	\$617,560	99%	100%
341, 348, 355, 402*	—	12/31/2025	PG&E & AT&T	Utility Relocation	\$2,693,473	\$2,592,208	\$2,700,000	96.2%	100%
327	4	6/30/2019	BKF	Design Svcs During Construction	\$1,409,500	\$1,365,634	\$1,391,704	96.9%	98.7%
330	9	12/31/2018	S&C Engineers**	Construction Management	\$10,991,025	\$10,906,695	\$10,991,025	99.2%	100%
332	1	12/31/2016 / Closed	Jacobs Project Management Co.	Construction Management	\$5,084,360	\$4,267,954	\$4,267,954	83.9%	100%
339	5	6/30/2019	TY Lin International	Design Svcs During Construction	\$2,634,155	\$2,617,546	\$2,634,155	99.3%	99.5%
350	—	5/16/2020	BART	Construction Services	\$9,000,000	\$8,818,702	\$8,818,702	100%	100%
351	—	6/30/2018	Bay Cities Paving	Construction – Segment 3B	\$56,113,358	\$52,826,845	\$56,113,358	94%	100%

*Only open contracts shown **S&C Engineers contract includes \$65,300 for San Pablo Dam Road work

Project Hercules Rail Station (# 4001)
Sponsor City of Hercules
Subregion West County

Scope

Construct a passenger rail station (including interim parking, station platform, signage, plaza, etc.) and track-related improvements (including retaining walls and signal equipment relocation in Hercules). The City of Hercules now commonly refers to this project as the “Hercules Intermodal Transit Center Project” to scope the project for both rail and ferry transit service. This multi-modal center would unite the Amtrak intercity rail (Capitol Corridor and San Joaquin Corridor), WestCAT local and regional buses and the Water Emergency Transportation Authority trans-bay ferry service with additional access for cars, pedestrians, and bicyclists.

Due to the high cost and limited funding, the project will be completed in several stages as follows:

- Bay Trail (East): Construct Bay Trail from Refugio Creek to Victoria by The Bay (\$10.9M).
- Path to Transit: Construct sewer improvements, Refugio Greenway/Creekside Trail, John Muir Parkway (Phase II) and Bayfront Boulevard (\$17.6M).
- Bay Trail (West): Construct Bay Trail from Sante Fe to Bayfront (\$1.9M)
- Fuel Pipe Relocation: Relocate oil pipelines, fiber optic line and construct retaining walls for utilities (\$22.8M).
- Track and Signal Work: Construct railroad bridge, track, and signal work, retaining wall for rail station, (\$24.8M).
- Initial Rail Station: Construct rail station building, and Transit Plaza (\$7.9M).
- Trails and Plazas: Remaining Bay Trail/Civic Plaza (\$4.1M).

Status

- Construction of Bay Trail (East) is complete.
- Construction of “Path to Transit” is complete.
- Construction of Bay Trail (West) is complete.

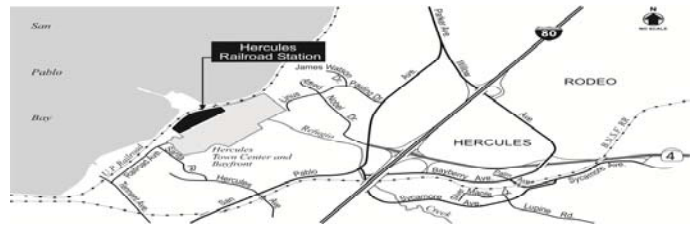
Issues/Areas of Concern

- Project has significant funding shortfall.
- Capitol Corridor has yet to agree to add Hercules as a stop along its route. Public outreach effort is underway to secure a commitment.
- Funding secured can only be used on specific stages, increasing risk for funding loss.

Update from Previous Quarterly Report

- Resolution 18-66-P was approved by the Authority Board on November 14, 2018 supporting the project.
- At its December 14, 2018 meeting, WCCTAC allocated a base amount of \$500,000 in STMP fees to project.

Location



Schedule

	Bay Trail (East)	Path to Transit	Bike Trail (West)	Remaining Phases
Planning	—	—	—	—
Env. Clearance	Complete	Complete	Complete	Complete
Design	Complete	Complete	Complete	TBD
Right of Way and Utilities	Complete	Complete	Complete	TBD
Construction	Complete	Complete	Complete	TBD
Post Construction	Complete	Complete	Complete	—

Estimated Cost by Phase (\$ 000s)

	Bay Trail (East)	Path to Transit	Bike Trail (West)	Remaining Phases
Project Management	—	—	—	—
Planning	—	—	—	—
Env. Clearance	—	—	—	—
Design*	\$2,800	\$3,100	\$175	\$13,400
Right of Way and Utilities	—	—	—	17,900
Construction	8,061	14,502	1,750	28,300
Total	\$10,861	\$17,602	\$1,925	\$59,600

*Includes environmental clearance, project & construction management

Funding by Source (\$ 000s)

	Bay Trail (East)	Path to Transit	Bike Trail (West)	Remaining Phases
Measure J	\$508	\$3,568	—	\$3,885*
Measure – TLC	—	1,240	—	—
Measure J – PBTF	—	600	—	—
OBAG	—	—	\$1,705	—
Local	1,000	4,959	—	—
STIP	3,882	4,118	—	—
STIP – TE	1,959	—	—	—
TIGER II	1,465	—	—	—
Bay Trail	198	—	—	—
East Bay Reg. Park	564	570	220	—
TCRP	—	700	—	—
STMP	—	1,000	—	500
Other	1,285	847	—	—
TBD (shortfall)	—	—	—	55,215
Total	\$10,861	\$17,602	\$1,925	\$59,600

*2.162 million has been used to acquire ROW and \$400,000 is appropriated for public outreach. \$1.323 million currently un-appropriated.

Project Hercules Rail Station (# 4001) – continued

Major Project Contracts Managed by Authority

Contract No.	Amend No.	Contract Expiration	Agency/ Consultant	Description	Appropriated Amount	Billed to Date (10/31/2018)	Estimate at Completion	Percent Billed	Percent Physically Complete
383	1	12/31/2016 / Closed	Ghirardelli Associates, Inc.	Construction Management	\$1,262,000	\$1,262,000	\$1,262,000	100%	100%

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
12-08-P	3/12/2012	3	7/15/2018	Hercules	Construction—Path to Transit and Bay Trail (East)	\$4,076,000	\$3,447,045	9/20/2018
12-06-P*	7/20/2012	2	3/21/2015 / Closed	Hercules	Right of Way	\$2,162,000	\$2,162,000	7/20/2012
15-42-G	7/15/2015	—	7/1/2024 / Closed	Hercules	Construction—Bay Trail (Part of Path to Transit)	\$1,240,000	\$1,240,000	12/30/2017
15-43-G	7/15/2015	—	7/1/2024 / Closed	Hercules	Construction—Creekside Trail Gap Closure (Part of Path to Transit)	\$600,000	\$600,000	12/08/2017
16-34-P	7/20/2016	—	7/20/2019 / Closed	Hercules	Public Outreach and Agency Coordination	\$400,000	\$400,000	1/19/2018

*City must repay Authority no later than July 1, 2024 if Station Building construction doesn't start by July 1, 2022.

Project Pacheco Boulevard Widening (# 1216/24003)
Sponsor Contra Costa County/City of Martinez
Subregion Central County

Scope

Widen Pacheco Boulevard from Blum Road to Morello Avenue, construct a railroad overcrossing, and allow for bicycle lanes, sidewalks, a median, two-way center turn lanes, and landscaping, where appropriate. The project may be completed in phases to match the funding as follows.

Phase 1 (County)

Blum Road to South Martinez city limits: Widen to two through lanes in each direction and a two-way left-turn lane.

Phase 2 (City)

South Martinez city limits to North Martinez city limits: Widen to two through lanes in each direction.

Phase 3 (County)

Realign the roadway in the vicinity of the Burlington Northern Santa Fe Railroad tracks, including the new overcrossing.

Phase 4 (County)

North Martinez city limits to Arthur Road: Widen to two through lanes in each direction and a two-way left-turn lane.

Status

- An alignment study was completed in June 2017. Under separate contract, A follow-on study of Phase 3 constructability and Blum Road is under way.
- A sub-project to widen Pacheco Blvd. at Vine Hill Creek to add sidewalks and bike lanes was completed in October 2018.
- A sub-project to improve Pacheco Blvd at Arnold Drive and install a traffic signal is in the project development phase. This project also includes street widening and utility relocation and undergrounding from Arnold Drive to Sunrise Drive.
- Measure C funds were used to environmentally clear a portion of the project near the railroad overcrossing and acquire part of the Right-of-Way.

Issues/Areas of Concern

- A significant funding shortfall exists to complete entire project.
- Coordination with the State and BNSF is required to replace the railroad overcrossing.

Update from Previous Quarterly Report

Studies

- Recommendations of Alignment Study will be presented to the Board of Supervisors in Summer 2019. The traffic and constructability study is underway and anticipated to be complete in Spring 2019.

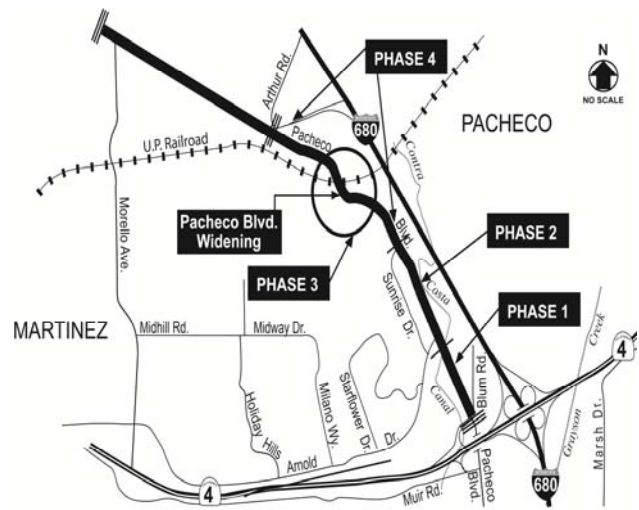
Widening at Arnold Drive

- Utility coordination with PG&E has been initiated for the relocation and undergrounding of overhead facilities from Arnold Drive to Sunrise Drive. Utility relocation is tentatively planned for FY2020-21.

Widening at Vine Hill Creek

- Construction was substantially completed in October 2018, with punch list items completed in November 2018.

Location



Schedule

	Widening at Vine Hill Creek	Widening at Arnold Drive	Remaining Phases
Planning	Complete	2018-2019	TBD
Environmental Clearance	Complete	2018-2019	TBD
Design	Complete	2018-2019	TBD
Right of Way and Utilities	Complete	2020-2021	TBD
Construction	Complete	2020-2021	TBD
Post Construction	—	—	TBD

Funding by Source (\$ 000s)

	Widening at Vine Hill Creek	Widening at Arnold Drive	Remaining Phases
Measure J	—	\$1,400	\$4,400
Martinez Area of Benefit	—	—	1,200
Measure C*	\$570	300	175
Tosco/Solano Fund	—	—	5,200
ATP	619	—	—
Other Local	87	15	—
TBD (shortfall)	—	1,785	22,925
Total	\$1,276	\$3,500	\$33,900

*In addition to amounts shown, \$1,794,000 in Measure C was appropriated and spent to environmentally clear and acquire right-of-way near the railroad track. In addition, \$450,000 in Measure C was appropriated to complete an alignment study.

Project Pacheco Boulevard Widening (# 1216/24003) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
01-12-P	7/18/2001	1	Closed	Contra Costa County	Design Services	\$493,675	\$493,675	Prior to 2009
02-17-P	7/17/2002	—	Closed	Contra Costa County	Project Management	\$429,522	\$429,522	Prior to 2009
02-18-P	7/17/2002	—	Closed	Contra Costa County	Right-of-Way Acquisitions	\$871,071	\$871,071	5/19/2010
15-13-P	4/15/2015	1	4/15/2018 / Closed	City of Martinez	Study	\$410,663	\$410,663	7/03/2017
17-17-P	5/17/2017	1	5/17/2020	Contra Costa County	Environmental Clearance, Design, and ROW services	\$382,000	\$112,818	7/23/2018
17-41-P	9/20/2017	—	9/20/2020	City of Martinez	Environmental Clearance, Design, and ROW Services	\$300,000	\$112,996	5/31/2018
18-14-P	4/18/2018	—	12/31/2018	Contra Costa County	Constructability and Traffic Study	\$117,884	\$0	—
18-36-P	6/20/2018	—	6/20/2021	Contra Costa County	Construction Phase	\$188,000	\$0	—

Project	Operational Improvements on Parallel Arterials (Measure C #1222)
Sponsor	City of Concord
Subregion	Central County

Scope

This project will improve traffic flow along the I-680/SR242 corridor in Central County by improving the efficiency of traffic operations on the parallel arterials in downtown Concord. CCTV cameras and fiber optic interconnect cable will be installed based on available budget within the corridor to improve real-time traffic monitoring, central communications, and system wide incident management.

Status

- The construction contract was awarded in September 2017.
- Construction completion is targeted for January 2019.

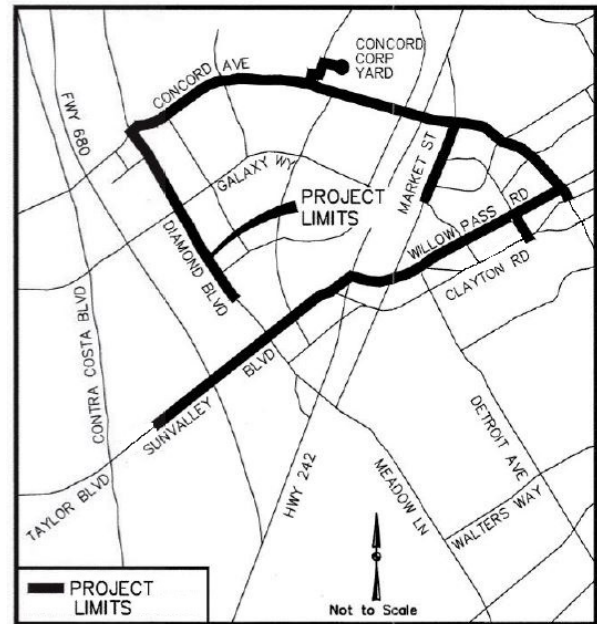
Issues/Areas of Concern

- Previous concerns regarding conduits irregularities were overcome by change orders.

Update from Previous Quarterly Report

- Cable for Concord Avenue, Diamond Boulevard and Galindo Street have been installed and commissioned. Cable for Willow Pass Road was installed in December and will be commissioned in January 2019.
- City Council acceptance expected in February 2019.
- Cost and schedule were updated to reflect the latest information.

Location



Schedule

	<i>Dates</i>
Planning	—
Environmental Clearance	—
Design	Complete
Right of Way and Utilities	—
Construction	2017-2019
Post Construction	—

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure C	\$2,893
Local Funds	1,255
Total	\$4,148

Project Operational Improvements on Parallel Arterials (Measure C #1222) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (4/30/2018)	Last Billed Date
16-03-P	1/20/2016	1	1/20/2019	City of Concord	Design Services	\$185,747	\$177,569	12/26/2017
17-13-P	4/19/2017	—	4/18/2020	City of Concord	Construction	\$2,707,356	\$1,174,503	4/30/2018

Project Danville Road and Street Preservation (Measure C #1723)
Sponsor Town of Danville
Subregion Southwest County

Scope

This pavement rehabilitation project includes pavement repairs and overlay; bridge abutment slab stabilization; traffic signal improvements; curb, gutter and sidewalk improvements; and pavement striping (Class II bike lanes) on El Cerro Boulevard and Sycamore Valley Road. The project limits consist of Sycamore Valley Road overcrossing from San Ramon Valley Blvd to Camino Ramon and El Cerro Boulevard from El Pintado Road to the El Cerro Bridge (west of La Gonda Way).

Status

- Project was awarded on April 17, 2018
- Construction began in June 2018.

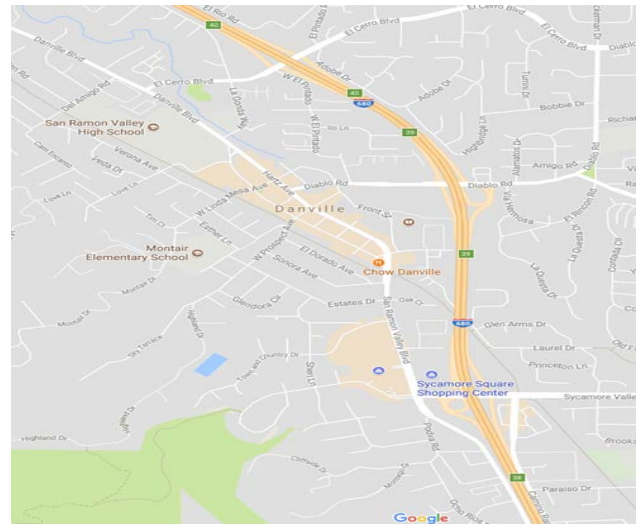
Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- Project is nearly complete. Town Council acceptance expected in January 2019.
- Project will be moved to completed list in the next update.

Location



Schedule

	<i>Dates</i>
Planning	—
Environmental Clearance	—
Design	Complete
Right of Way and Utilities	—
Construction	2018-2019
Post Construction	—

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure C	\$1,048
OBAG I	933
Local Funds	97
Total	\$2,078

Project Danville Road and Street Preservation (Measure C #1723) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
18-13-P	4/18/2018	—		Town of Danville	Construction Phase	\$1,048,000	\$0	—

Project East County Rail Extension (eBART) (# 2001/2101)
Sponsor Contra Costa Transportation Authority/BART
Subregion East County

Scope

Extend rail service eastward from the Pittsburg/Bay Point BART Station to Hillcrest Avenue within the median of SR 4 (Project 1). In addition, the parking lot at Antioch BART station at Hillcrest Avenue will be expanded by 800 spaces (Project 2).

Status

- Project #1: Revenue service started in May 2018.
- Project #2: Currently in the environmental clearance and design phase.

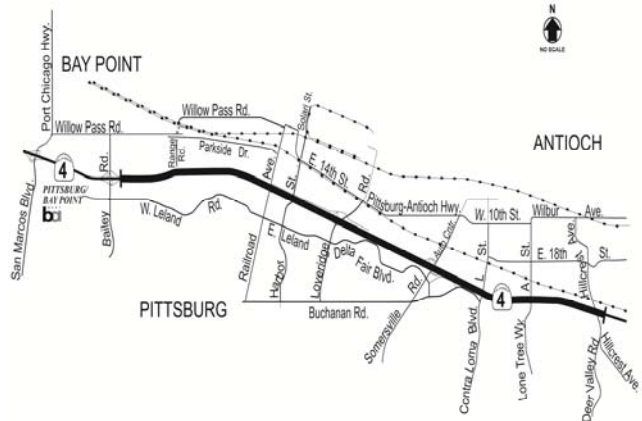
Issues/Areas of Concern

- None

Update from Previous Quarterly Report

- Project #2 is currently in the environmental clearance and design phase.
- The Authority appropriated a total of \$5.08 million at its October 2018 meeting for the expansion of Antioch BART parking lot.
- BART Board approved the project environmental clearance document at its December 6, 2018 meeting.

Location



Schedule

	Dates	
	Project #1	Project #2
Preliminary Studies/ Planning	Complete	Complete
Environmental Clearance	Complete	2018-2019
Design	Complete	2018-2019
Right of Way and Utilities	Complete	2018-2019
Construction	Complete	2019-2020
Landscaping	—	—

Funding by Source (\$ 000s)

	Amount	
	Project #1	Project #2
Measure J	\$137,700	\$5,080
BART	2,700	4,300
T-Plus	1,000	—
Prop 1B	37,000	—
RM 2	95,500	—
RM 1	61,400	—
AB1171	111,500	—
ECCRFFA	35,000	3,000
STA	300	—
TCRP	5,250	—
STIP/RIP	13,000	—
MTC	—	3,650
Other	11,191	—
Total	\$511,541	\$16,030

Project East County Rail Extension (eBART) (# 2001/2101) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
09-59-P	12/16/2009	2	12/31/2014 / Closed	BART	Transfer Platform	\$20,000,000	\$20,000,000	1/13/2014
12-15-P	5/16/2012	3	2/21/2018 / Closed	BART	Rail Procurement	\$18,254,106	\$18,254,106	6/8/2016
12-16-P	5/16/2012	2	5/16/2018	BART	Automatic Fare Collection Equipment	\$4,000,000	\$3,978,716	8/16/2018
12-53-P	9/19/2012	1	9/19/2018	BART	Destination Sign Procurement	\$700,000	\$698,223	6/12/2018
12-54-P	9/19/2012	1	9/19/2018 / Closed	BART	Sanitary Sewer Contract	\$500,000	\$500,000	2/15/2018
13-23-P	6/19/2013	2	6/30/2019 / Closed	BART	Design Services	\$442,679	\$442,679	2/26/2018
13-24-P	6/19/2013	1	6/19/2017	BART	Construction Management	\$15,000,000	\$14,533,823	6/30/2017
13-25-P	6/19/2013	1	12/31/2017 / Closed	BART	Switch Machines Procurement	\$600,000	\$600,000	6/30/2017
13-49-P	11/20/2013	2	11/20/2018	BART	Maintenance Facility Completion	\$33,594,960	\$31,851,760	8/7/2018
18-60-P	10/17/2018	—	10/17/2021	BART	Construction	\$3,257,320	\$0	—
18-61-P	10/17/2018	—	10/17/2021	BART	Construction	\$1,824,611	\$0	—

Project **Martinez Intermodal Station (# 4002/27001)**
Sponsor City of Martinez
Subregion Central County

Scope

Acquire the warehouse property north of the existing intermodal facility; demolish the existing structures; construct a parking facility to provide 175 replacement parking spaces and up to 425 additional parking spaces for use by train patrons, along with improved roadway access from Ferry Street; construct a pedestrian overcrossing above the Union Pacific Railroad facilities (to provide pedestrian access from the new parking facility to the station building); and construct a vehicle bridge over Alhambra Creek to provide a second connection to the parking facility near Berrellesa Avenue.

Status

- Construction of the pedestrian overcrossing and Ferry Street entrance are underway.
- The pedestrian overcrossing is being constructed with the Ferry Street Improvements.

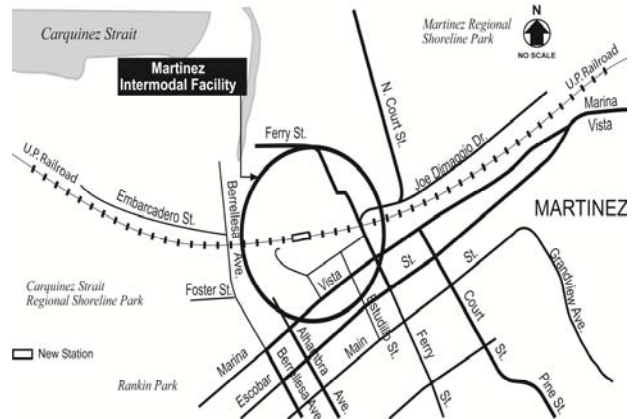
Issues/Areas of Concern

- PG&E relocation of lines and temporary shutdown of transmission line to allow installation of pedestrian bridge.
- Coordination with the Railroad during the installation of the pedestrian overcrossing.

Update from Previous Quarterly Report

- Pedestrian overcrossing improvements are being constructed with the Ferry Street improvements.
- Construction is expected to be substantially completed by March 1, 2019 and is 75% complete as of end of October 2018.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	Complete
Design	Complete
Right of Way and Utilities	Complete
Construction	2017-2019
Post Construction	—

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$10,658
STIP	5,500
Measure C	300
Total	\$16,458

Project Martinez Intermodal Station (# 4002/27001) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
11-10-P	9/21/2011	2	12/31/2018 / Closed	City of Martinez	Design	\$1,035,000	\$1,028,606	8/19/2015
14-48-P	10/15/2014	1	10/15/2020	City of Martinez	Design	\$116,700	\$112,402	5/31/2018
07-01-PJ	5/16/2007	—	5/16/2010 / Closed	City of Martinez	Right of Way	\$5,419,768	\$5,419,768	10/27/2008
11-32-P	9/21/2011	1	9/20/2020 / Closed	City of Martinez	Right of Way	\$315,168	\$169,322	5/31/2018
08-03-PJ	12/17/2008	—	12/17/2011 / Closed	City of Martinez	Construction	\$124,110	\$124,110	8/15/2011
13-28-P	7/17/2013	—	7/16/2016 / Closed	City of Martinez	Construction	\$887,123	\$887,123	4/16/2014
13-29-P	7/17/2013	1	7/17/2016 / Closed	City of Martinez	Construction	\$843,096	\$843,096	8/19/2015
17-22-P	5/17/2017	—	5/17/2020	City of Martinez	Construction	\$2,044,904	\$754,330	10/23/2018

Project	Comprehensive Wayfinding System – Central County BART Stations (# 10001-03)
Sponsor	BART
Subregion	Central County

Scope

Create and implement a cohesive, integrated wayfinding system for Central County BART stations. Improvements can be phased by station.

Status

- Construction was completed in 2013 at the Pleasant Hill Station.
- Construction was completed in 2017 at North Concord, Concord, and Walnut Creek stations.

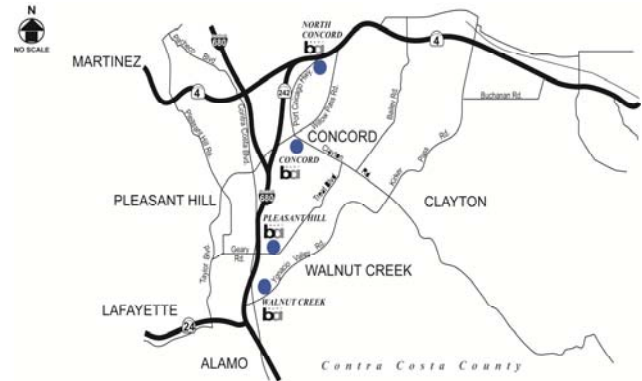
Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- BART is continuing design of the Real-Time Displays integration into the BART network. These displays will enhance and improve communication and reliability of information. The implementation is expected to be complete by early 2019.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	Complete
Design	2017-2018
Right of Way and Utilities	—
Construction	2017-2019
Post Construction	—

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$2,600
Total	\$2,600

Project Comprehensive Wayfinding System – Central County BART Stations (# 10001-03) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
10-02-P	1/20/2010	2	6/30/2019	BART	Design and Construction	\$2,600,000	\$2,507,240	11/19/2018

Project	Electronic Bicycle Facilities – Central County BART Stations (# 10001-04)
Sponsor	BART
Subregion	Central County

Scope

Install secure bicycle parking spaces at Concord, North Concord, Walnut Creek, and Pleasant Hill BART stations. The bicycle parking area design will include signage and other enhancements to create an inviting and functional bicycle parking area.

Status

- To date, a total of 527 spaces have been installed at the Walnut Creek, Pleasant Hill, Concord, and North Concord stations.
- The Pleasant Hill Bike Station is complete and operational.

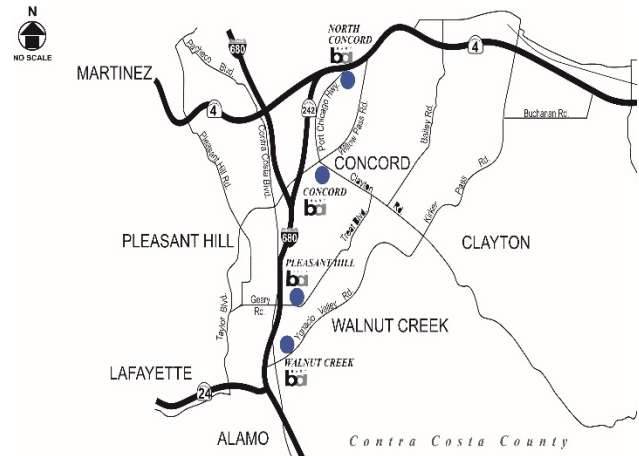
Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- The Concord Bike Station project will be incorporated with Phase 1 of the Concord BART Station Modernization Project. Design work has started on improvements to the bike parking in the paid area of the station. The project will replace the legacy wave style racks with inverted U style racks providing more spaces and the ability to lock more securely (two locking points per bike).
- Design work has started on the Bikeep installation of 20 spaces to supplement BikeLink locker parking. BikeLink locker use at Concord is above 80%. BART intends to have the Bikeep racks installed before Spring 2019 when bike parking demand will increase.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	Complete
Design	Complete
Right of Way and Utilities	—
Construction	2010-2019
Post Construction	—

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$1,805
BART	150
Total	\$1,955

Project Electronic Bicycle Facilities – Central County BART Stations (# 10001-04) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
10-03-P	1/20/2010	3	3/15/2020	BART	Design and Construction	\$1,805,000	\$1,297,034	7/26/2018

Project **Concord BART Plaza Redesign (# 10001-05)**
Sponsor BART
Subregion Central County

Scope

This project will redesign and reorient the public plaza to better connect to the City’s downtown area, add landscaping and upgrade lighting, provide pigeon mitigation, improve several critical pathways and crosswalks from the surrounding streets to the station fare gates, add sustainability features such as storm water treatments, and add decorative elements to reinforce the station’s identity with the City of Concord.

Status

- Project is in the construction phase.

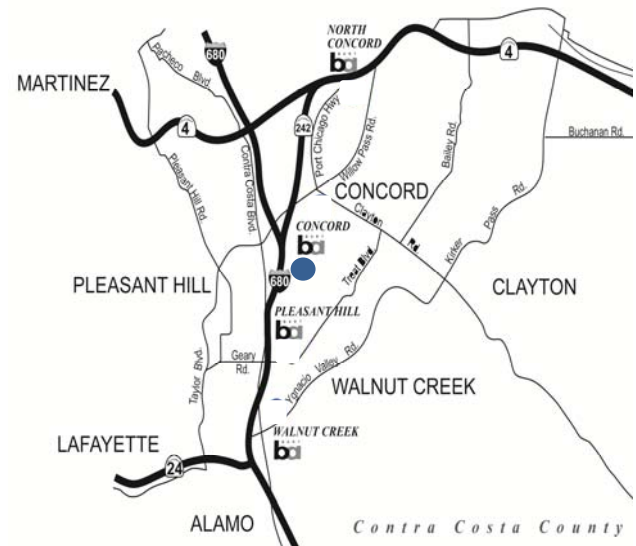
Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- Project work was sequenced to be constructed in 2 Phases. Phase 1 Substantial Completion was achieved in May 2018.
- Phase 2 construction was completed in September 2018.
- BART is currently working on the project’s close-out phase.
- Project will be moved to completed list in the next update.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	—
Design	Complete
Right of Way and Utilities	—
Construction	Complete
Post Construction	—

Funding by Source (\$ 000s)

	<i>Amount</i>
Prop 1B (Lifeline)	\$400
Prop 1B (BART)	1,500
BART	100
Measure J	4,500
Total	\$6,500

Project Concord BART Plaza Redesign (# 10001-05) – continued

Local Agency Project Contracts

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
16-16-P	5/18/2016	—	5/18/2019	BART	Construction	\$4,500,000	\$4,019,149	8/16/2018

Project Pleasant Hill Parking Structure Elevator Renovation (# 10001-07)
Sponsor BART
Subregion Central County

Scope

Perform site visit and inspection of each elevator and evaluate current state of equipment. The inspection will include the following items: door operators, door locks and pick-up rollers, door tracks and hanger rollers, fixtures, and wiring. Replace and upgrade equipment identified during the inspection as being obsolete, outdated, or at the end of its useful life.

Status

- Construction began in March 2018 and project is currently wrapping up the construction phase.
- First two elevators were returned to service in mid-September.

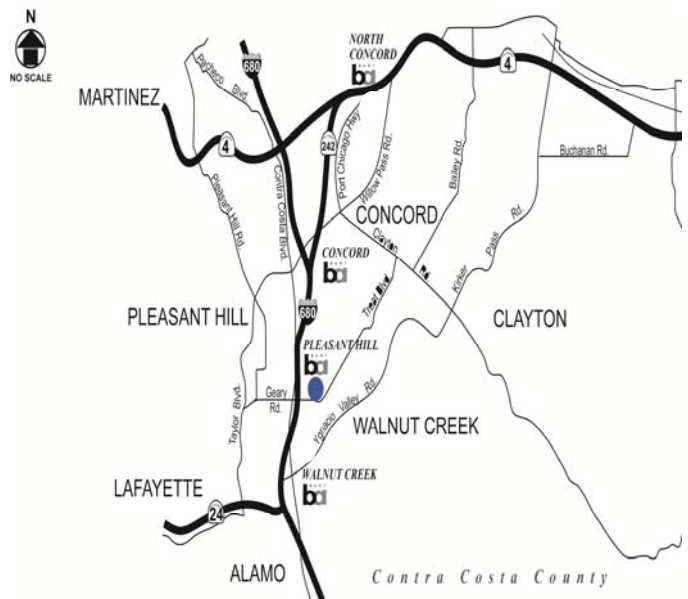
Issues/Areas of Concern

- Possible need for contract time extension.

Update from Previous Quarterly Report

- Construction on the final two elevators was completed in November and state/BART inspection will take place by early 2019.
- BART aims to close out project by end of April 2019.
- Project will be moved to completed list in the next update.

Location



Schedule

	<i>Dates</i>
Planning	—
Environmental Clearance	—
Design	Complete
Right of Way and Utilities	—
Construction	2018-2019
Post Construction	—

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$600
BART	1,000
Total	\$1,600

Project Pleasant Hill Parking Structure Elevator Renovation (# 10001-07) – continued

Local Agency Project Contracts

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (12/31/2018)	Last Billed Date
16-43-P	9/21/2016	—	9/21/2019	BART	Construction	\$600,000	\$4,647	7/31/2017

Project Walnut Creek BART TOD Access Improvements Project (# 10001-08)
Sponsor BART
Subregion Central County

Scope

The scope of the project is to design and construct public access improvements at the Walnut Creek BART Station connecting to the transit oriented development (TOD), Transit Village, and to help create a sense of “place” in the station area. Improvements to the area immediately outside the existing fare gates and beneath the elevated guideway will be aimed at enhancing sightlines, passenger safety, a sense of place and station accessibility, while reducing fare evasion. Improvements will create a more welcoming, convenient, accessible, and iconic BART station. These improvements may include public access paths and plazas, upgraded station and platform lighting, dynamic parking signage, bicycle facilities, additional vertical circulation, security features, landscaping, and other public improvements to accommodate and promote growing ridership and the new TOD.

Status

- The preliminary studies and planning for the access improvements project are complete. The project is now in the design phase and is in coordination with the Transit Village plans.

Issues/Areas of Concern

- Must coordinate funding with STIP funding timelines.

Update from Previous Quarterly Report

- BART completed reviews with the adjacent developer and City of Walnut Creek on the overall proposed project layout.
- BART is confirming fire/life safety, phasing, and placemaking project components.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	2017-2019
Design	2017-2019
Right of Way and Utilities	—
Construction	2020-2023
Post Construction	—

Funding by Source (\$ 000s)

	<i>Amount</i>
BART Funds	\$100
Measure J – BART	3,850
STIP	5,300
Total	\$9,250

Project Walnut Creek BART TOD Access Improvements Project (# 10001-08) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
17-10-P	3/15/2017	—	3/15/2020	BART	Design	\$350,000	\$111,024	8/15/2018

Project **Transit Oriented Development (TOD) and Access Improvements at West Contra Costa BART Stations (# 10002-01)**

Sponsor City of El Cerrito
Subregion West County

Scope

Construct station and access improvements that will enhance and support the development of transit-oriented development at West County BART stations and help create a sense of “place” in these station areas. These improvements may include parking, pathways, plazas, and sidewalks, upgraded lighting, restroom renovations, bicycle facilities, signage, additional vertical circulation, security features, landscaping, and other public improvements.

Project #1: Multimodal Capital Improvement Program

- The City of El Cerrito has adopted the San Pablo Avenue Specific Plan and Complete Streets Plan and has prepared the Multimodal CIP identifying multimodal transportation improvements within 0.5-mile of both BART stations.

Project #2: Ohlone Greenway BART Station Area Access, Safety, and Placemaking (ASP) Improvement Project

- The project will improve on the mixed used path, landscape, streetscape, and public access along the Ohlone Greenway and adjacent streets at the El Cerrito Plaza and Del Norte BART stations.

Status

- Project #1: Project is complete.
- Project #2: Construction began in April 2018 and is anticipated to be completed in Fall 2018.

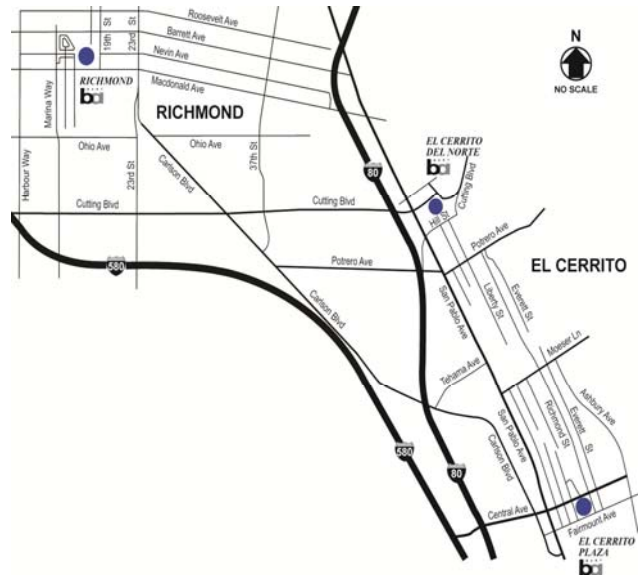
Issues/Areas of Concern

- Project #2: The project construction schedule has been extended to account for changes in work, utility conflicts and utility connections.

Update from Previous Quarterly Report

- Construction is nearing completion except for utility connection. Construction completion expected in January 2019.

Location



Schedule

	Project #1	Project #2	Future Work
Planning	Complete	Complete	TBD
Environmental Clearance	N/A	Complete	TBD
Design	N/A	Complete	TBD
Right of Way and Utilities	N/A	Complete	TBD
Construction	N/A	2018-2019	TBD
Post Construction	N/A	—	TBD

Funding by Source (\$ 000s)

	Project #1	Project #2	Future Work
Measure J	\$250	\$300	\$2,932
Measure J West County Sub-Regional Needs	—	500	—
WCCTAC STMP Fees	—	300	18,200
Local	—	150	—
One Bay Area Grant (OBAG)	—	3,468	—
Total	\$250	\$4,718	\$21,132

Project Transit Oriented Development (TOD) and Access Improvements at West Contra Costa BART Stations (# 10002-01) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
13-09-P	4/17/2013	—	4/17/2016 / Closed	BART	Preliminary Engineering	\$125,000	\$125,000	10/1/2014
13-14-P	5/15/2013	—	12/31/2016 / Closed	City of El Cerrito	Preliminary Engineering	\$125,000	\$124,366	5/13/2016
15-14-P	4/15/2015	—	4/15/2018 / Closed	City of El Cerrito	Environmental Clearance and Design	\$ 34,462	\$34,462	8/11/2016
16-29-P	6/15/2016	—	6/15/2019	City of El Cerrito	Construction	\$ 265,538	\$265,538	9/26/2018
17-11-P	3/15/2017	—	3/14/2020	City of El Cerrito	Construction	\$ 500,000	\$192,259	9/26/2018

Project	Electronic Bicycle Facilities at West Contra Costa BART Stations (# 10002-03)
Sponsor	BART
Subregion	West County

Scope

Install 92 secure bicycle parking spaces at the El Cerrito del Norte, El Cerrito Plaza, and Richmond BART stations. Design bicycle parking area to include signage and other enhancements to create an inviting and functional facility.

Status

- To date, a total of 128 spaces have been installed at El Cerrito Plaza, El Cerrito del Norte, and Richmond stations.

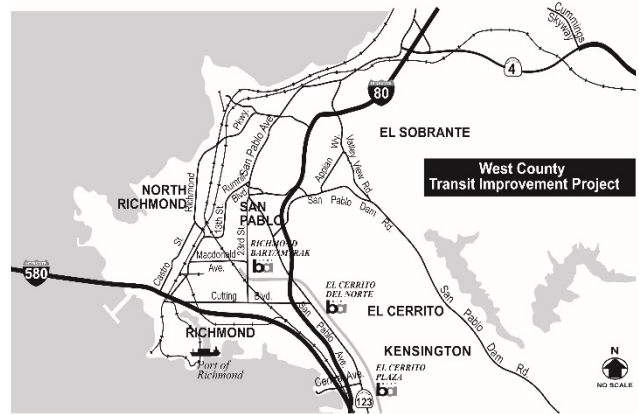
Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- The bicycle parking installations at the El Cerrito Plaza and Richmond stations are complete. BART staff continues to proceed with close-out steps.
- Project will be moved to completed list in the next update.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	Complete
Design	Complete
Right of Way and Utilities	Complete
Construction	Complete
Post Construction	—

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$402
Total	\$402

Project Electronic Bicycle Facilities at West Contra Costa BART Stations (# 10002-03) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
10-04-P	1/20/2010	3	6/30/2019	BART	Design and Construction	\$402,000	\$366,998	5/15/2018

Project **Comprehensive Wayfinding System at West Contra Costa BART Stations (# 10002-05)**
Sponsor BART
Subregion West County

Scope

Create and implement a cohesive, integrated wayfinding system for west county BART stations to improve orientation, wayfinding, and ease of station use for customers traveling to, from, and through the facilities; facilitate connections with other transit, bicycle, and pedestrian facilities; and encourage new ridership by making services accessible and convenient.

Status

- At its May 8, 2014 board meeting, BART awarded a contract to LC General Engineering and Construction, Inc. for design, construction, and installation of wayfinding signage at 16 BART stations including west Contra Costa County stations. BART issued the construction Notice to Proceed in early January 2015.

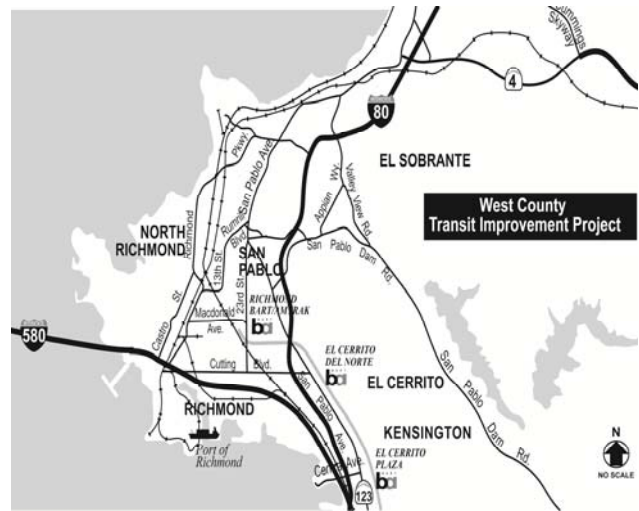
Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- BART is continuing design of the Real-Time Displays integration into the BART network. These displays will enhance and improve communication and reliability of information. The implementation is scheduled to be complete by early 2019.

Location



Schedule



	<i>Dates</i>
Planning	Complete
Environmental Clearance	Complete
Design	Complete
Right of Way and Utilities	—
Construction	2014-2019
Post Construction	—

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$1,600
Total	\$1,600

Project Comprehensive Wayfinding System at West Contra Costa BART Stations (# 10002-05) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
10-05-P	1/20/2010	2	6/30/2019	BART	Design and Construction	\$1,600,000	\$1,386,456	11/20/2018

Project El Cerrito del Norte BART Station Modernization (# 10002-07)
Sponsor BART
Subregion West County

Scope

This project will expand the existing paid area, add new elevators and stairs, station agent booth, restrooms, and additional fare equipment. In addition, the project will upgrade the station lighting, the intermodal waiting area, refinish surfaces and add paint, security cameras and pedestrian lighting along the Ohlone Greenway.

Status

- Bids were opened on December 6, 2016. Contract was awarded to Clark Construction Group.
- Project is in the construction phase.

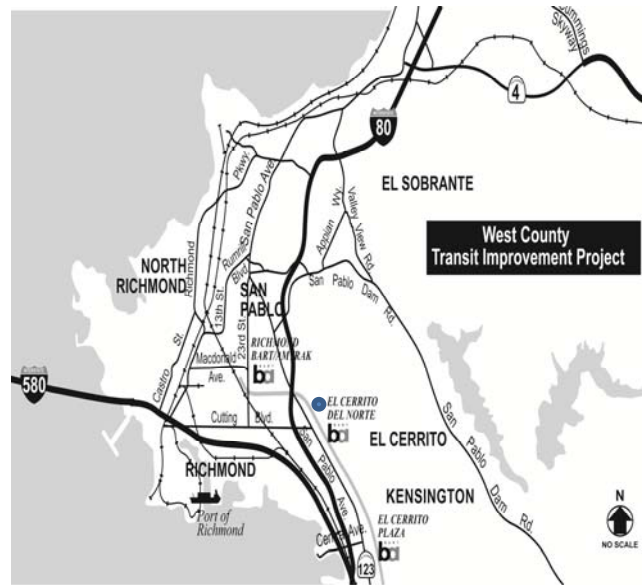
Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- BART issued Options 3 (bus shelters) & 4 (ADA, seating and LED lighting) in order to implement a more maintenance-friendly and cost-effective design.
- Completed construction activities include backfill foundations to grade (Phase 1A), and grade beams and elevator pit walls (Phase 2).
- BART staff continues to coordinate with City of El Cerrito staff on their Ohlone Greenway and Paving project, which is adjacent to the Station Modernization project.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	Complete
Design	Complete
Right of Way and Utilities	—
Construction	2017-2019
Post Construction	—

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J – BART	\$11,503
Measure J – TLC	2,120
Measure J – PBTF	280
WCCTAC	1,000
Prop 1B	21,550
BART General Fund	547
Total	\$37,000

Project El Cerrito del Norte BART Station Modernization (# 10002-07) – continued

Local Agency Project Contracts

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
16-17-P	5/18/2016	—	5/18/2019	BART	Construction	\$11,503,000	\$5,338,491	11/14/2018

Project Lafayette BART Bike Station (# 10003-03)
Sponsor BART
Subregion Southwest County

Scope

This project will design and construct a Bike Station, providing secure bicycle parking for up to 125 bicycles, at the Lafayette BART station. A Bike Station is an enclosed, sheltered space with bicycle racks and a controlled access system.

Status

- The project is in the Design Phase.
- The Construction phase is estimated to begin in the second quarter of 2019.

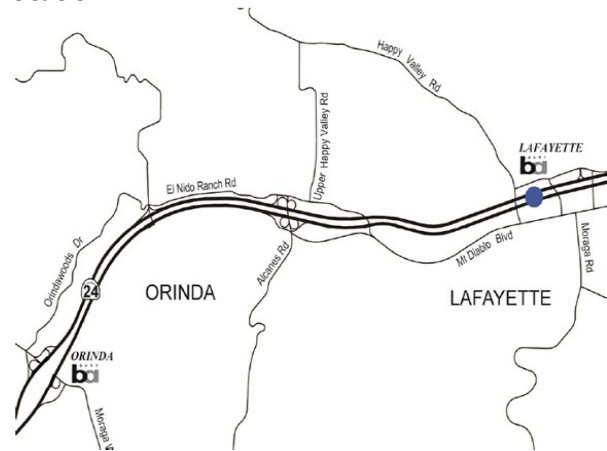
Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- The City of Lafayette has a design team under contract. Initial site feasibility and engineering studies are underway.

Location



Schedule

	<i>Dates</i>
Planning	—
Environmental Clearance	—
Design	2016-2019
Right of Way and Utilities	—
Construction	2019-2020
Post Construction	—

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$600
BART	100
Total	\$700

Project Lafayette BART Bike Station (# 10003-03) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
18-02-P	1/17/2018	—	1/17/2021	BART	Design	\$25,000	\$0	—

Project	Lafayette Station Site Improvements Project (# 10003-07)
Sponsor	BART
Subregion	Southwest County

Scope

The scope of the project is to construct intermodal improvements in the two lower parking lots on the north side of the Lafayette BART Station. The intermodal improvements will consist of new pavement, new sidewalks with ADA curb ramps, new parking lot lighting and emergency call box, restriping of parking stalls, reconfiguration of vehicle pick-up/drop-off area, new bus stops, and new wayfinding signs.

Status

- Project is in the construction phase.
- Phase 1 is complete.

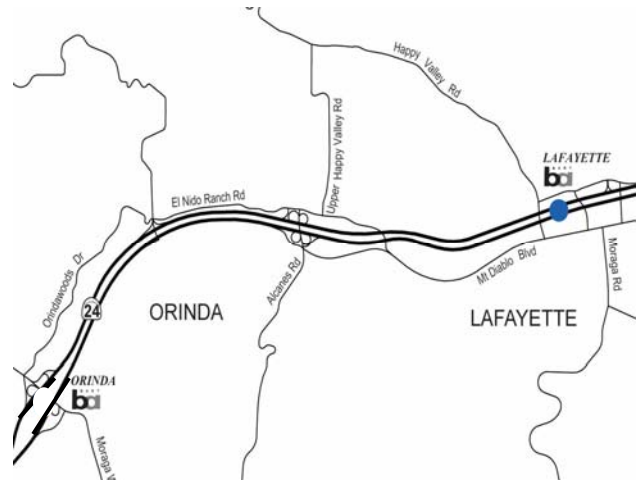
Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- Phase 2 work, which includes new bus stops and shelters, is substantially complete. BART will proceed with the project close out phase.
- Project will be moved to the completed list in the next update.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	Complete
Design	Complete
Right of Way and Utilities	—
Construction	Complete
Post Construction	2018-2019

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$1,300
BART	3,840
Prop 84 Grant	2,240
Total	\$7,380

Project Lafayette Station Site Improvements Project (# 10003-07) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
17-09-P	3/15/2017	—	3/15/2020	BART	Construction	\$1,300,000	\$1,235,000	7/12/2018

Project Downtown Orinda Streetscape Master Plan (# 10003-08)
Sponsor City of Orinda
Subregion Southwest County

Scope

The scope of work for the project would include:

- Prepare a draft conceptual design-level plan to update the “Orinda Way Streetscape Master Plan” as the “Downtown Orinda Streetscape Master Plan” with the following changes:
 - Update the existing conceptual design for Orinda Way
 - Add Village district side streets, pedestrian connection to BART and Crossroads district to the conceptual design.
- Identify access improvement projects connecting to the BART station
- Conduct at least two public meetings to review the conceptual plan.
- Prepare a final version of the Downtown Orinda Streetscape Master Plan.
- Begin preparation of design documents based on the conceptual plan to the point necessary for environmental review.
- Conduct environmental review for compliance with the California Environmental Quality Act (CEQA).

Status

- The project was awarded Measure J TLC funds in 2017.

Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- City planning staff and the consultant team are formulating project alternatives to be discussed at a workshop scheduled for January 2019.

Location



Schedule

	<i>Dates</i>
Preliminary Studies/Planning	2017-2019
Environmental Clearance	2018-2020
Design	—
Right of Way and Utilities	—
Construction	—
Landscaping	—

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J – TLC	\$200
Measure J	50
Local – City of Orinda	50
Total	\$300

Project Downtown Orinda Streetscape Master Plan (# 10003-08) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
17-56-G	11/15/2017	—	11/15/2020	City of Orinda	Design and Construction	\$250,000	\$0	—

Project Kirker Pass Road Truck Lanes – Northbound (# 24004)
Sponsor Contra Costa County
Subregion Central County

Scope

Add a truck climbing lane in the northbound direction along Kirker Pass Road from Clearbrook Drive in the city of Concord to the eastern intersection with Hess Road in unincorporated Contra Costa County.

Status

- The project is in the pre-construction phase.
- Construction is scheduled to begin in FY 2020/21.

Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- The CTC allocated STIP funds for construction at its October 2018 meeting.
- The project is currently being advertised with bids to be opened on January 15, 2019.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	Complete
Design	Complete
Right of Way and Utilities	Complete
Construction	2019-2020
Post Construction	—

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$6,351
STIP-RIP	2,650
State Match Funds	1,993
Local Funds	7,323
Total	\$18,317

Project Kirker Pass Road Truck Lanes – Northbound (# 24004) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
14-03-P	2/19/2014	—	12/19/2020	Contra Costa County	Design, Environmental Clearance, and ROW	\$2,574,000	\$2,139,872	7/23/2018

Project Downtown Corridors Traffic Improvements (# 24011)
Sponsor City of Lafayette
Subregion Southwest County

Scope

In March 2018, Lafayette completed a traffic study to develop recommendations to improve multi-modal traffic operations while reducing congestion during peak periods in Lafayette’s downtown. This project is now in the implementation phase, to design and construct a series of low-cost recommendations resulting from the study. Project can be phased based on available funding.

Status

- Corridor study began in April 2014.
- Study completed in March 2018.
- The project is currently in the implementation phase.

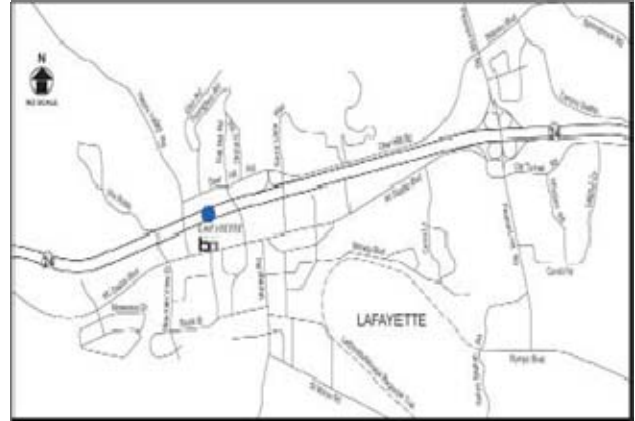
Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- The project is currently in the testing phase of the additional right turn lane on Northbound Moraga Road at the intersection of Mount Diablo Boulevard to reduce upstream Moraga Road traffic congestion.
- Final signal timing operation will be finalized in January.
- Additional corridor improvement strategies to be implemented in future phases, based on available funding.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	Complete
Design	Complete
Right of Way and Utilities	Complete
Construction	2018-2019
Post Construction	—

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$56
Total	\$56

Project Downtown Corridors Traffic Improvements (# 24011) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
18-39-P	7/18/2018	—	7/18/2021	City of Lafayette	Construction Phase	\$19,000	\$0	—

Project Farm Bureau Road Safe Route to School/Complete Streets Improvement (# 24012)
Sponsor City of Concord
Subregion Central County

Scope

Construct Safe Route to School / Complete Streets improvements on Farm Bureau Road between Willow Pass Road and Wren Avenue (Phase 1), and between Wren Avenue and Walnut Avenue (Phase 2), including sidewalks, street lighting, on-street parking, Class 2 bicycle lanes, shortened crosswalks, and ADA access.

Status

- Phase 1: Construction is complete.
- Phase 2: The project is currently in construction.

Issues/Areas of Concern

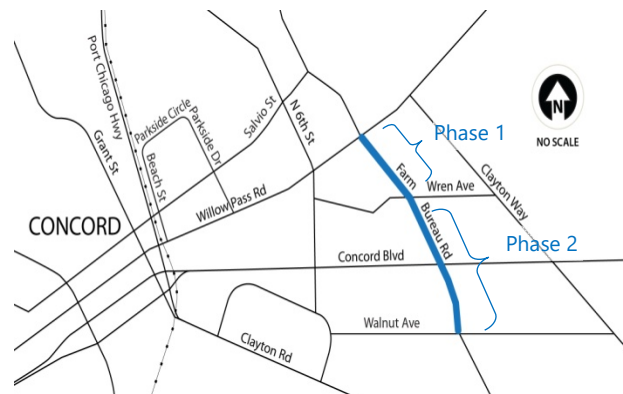
- All project issues such as PG&E utility box adjustments and signal pole installation have been resolved.

Update from Previous Quarterly Report

Phase 2

- All full depth reclamation work has been completed and asphalt paving work is completed as well.
- Roadway utilities, striping, installation of loops and irrigation and landscaping work have all been completed.
- Minor punchlist items remain. Contractor needs to remove his storage yard fence and complete clean-up of this area. Project acceptance by the City Council expected to occur in January 2019.

Location



Schedule

	Dates	
	Phase 1	Phase 2
Planning	Complete	Complete
Environmental Clearance	Complete	Complete
Design	Complete	Complete
Right of Way and Utilities	Complete	Complete
Construction	Complete	2018-2019
Post Construction	—	—

Funding by Source (\$ 000s)

	Amount	
	Phase 1	Phase 2
Measure J	\$300	\$3,780
SR2S Grant	400	—
Local	700	400
Total	\$1,400	\$4,180

Project Farm Bureau Road Safe Route to School/Complete Streets Improvement (# 24012) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
15-05-P	2/18/2015	—	2/18/2018 / Closed	City of Concord	Construction	\$281,000	\$281,000	12/14/2016
15-52-P	9/16/2015	1	9/16/2018 / Closed	City of Concord	Design – Phase 2	\$248,442	\$248,442	4/11/2018
17-12-P	4/19/2017	1	4/19/2020	City of Concord	Construction	\$3,551,558	\$1,207,833	8/20/2018

Project	St. Mary's Road–Rheem Boulevard and Bollinger Canyon Road Roundabouts (# 24014)
Sponsor	Town of Moraga
Subregion	Southwest County

Scope

Based on the analysis of sight distance, Level of Service and queuing under existing and cumulative conditions, the Town of Moraga proposes to construct a pair of roundabouts on St. Mary's Road at the Rheem Boulevard and Bollinger Canyon Road intersections. This would provide operational improvement under existing and cumulative traffic volumes, and reduce hazards caused by the existing inadequate sight distance, as all vehicles would slow down to move through the roundabout intersections. The roundabouts will provide additional benefits of reducing vehicle queuing and reducing driver delay. Potential conflicts with pedestrians and bicycles will be reduced with the roundabouts by allowing pedestrians to only need to cross one lane of traffic at a time, while having the ability to wait in the refuge island until there is a break in traffic. Bicyclists traveling through the roundabouts will also benefit by allowing them to take up the travel lane as bicyclists will be traveling near the speed of the vehicles (since roundabouts are designed to be traveled at 20 mph).

Status

- The project is in environmental clearance and preliminary engineering phase.

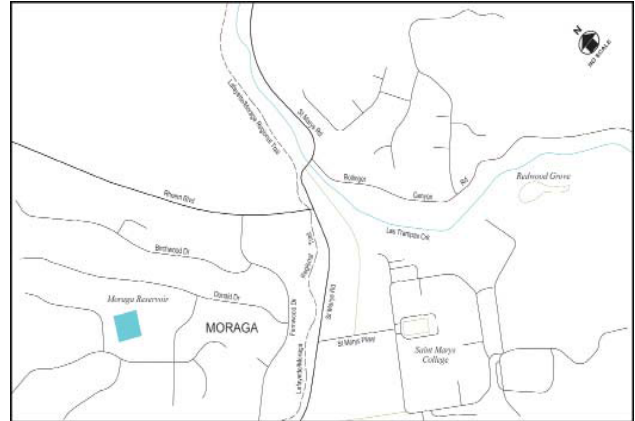
Issues/Areas of Concern

- Project has significant funding shortfall.

Update from Previous Quarterly Report

- The design consultant and City staff presented an update to the Town Council in October on the project, including results from the Benefits/Costs analysis and a summary of the public feedback from the September community meetings.
- Design consultant continues to make progress on environmental clearance and preliminary design.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	2017-2019
Design	2017-2019
Right of Way and Utilities	2018-2020
Construction	2019-2020
Post Construction	—

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$464
Lamorinda Fee and Finance Authority	141
TBD	6,378
Total	\$6,983

Project St. Mary’s Road – Rheem Boulevard and Bollinger Canyon Road Roundabouts (# 24014) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
17-08-P	3/15/2017	—	3/15/2020	Town of Moraga	Environmental Services and Preliminary Design	\$464,000	\$113,870	7/31/2017

Project Canyon Road Bridge Replacement (# 24016)
Sponsor Town of Moraga
Subregion Southwest County

Scope

Replace the existing structurally-deficient, 104-foot long multi-span bridge with a new 40-foot wide bridge including a sidewalk on one side. The new bridge will provide a safe, economical structure that meets current design criteria and the needs of today’s users. In addition, the new bridge will meet the functional requirements for vehicles, pedestrians and bicycles that travel over the bridge, and meet the hydraulic design criteria for the creek flow underneath the bridge.

Status

- Project CEQA document has been adopted by the Town of Moraga. Caltrans has approved the NEPA.
- Design and Right of Way phases are complete.

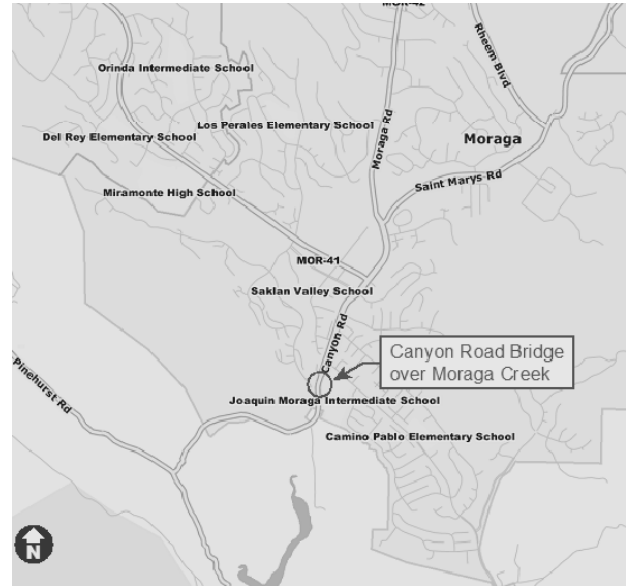
Issues/Areas of Concern

- Project delays due to landslide.

Update from Previous Quarterly Report

- The existing Canyon Road Bridge has been closed since mid-April 2017 due to a landslide damaging the bridge. The Town of Moraga Council has approved funding for a one lane temporary bridge as an emergency project. This temporary bridge was opened to public traffic on November 22, 2017. The alignment for the permanent bridge will be revised to move away from the landslide. This will require some of the Environmental Studies to be updated for the permanent bridge replacement project. These studies have been completed.
- Design has been completed. Request for funding authorization for Construction has been submitted to Caltrans.
- Right of Way acquisition has been completed.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	Complete
Design	Complete
Right of Way and Utilities	Complete
Construction	2018-2019
Post Construction	—

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$418
Measure J Return to Source	235
Federal Highway Bridge Program	4,242
Total	\$4,895

Project Canyon Road Bridge Replacement (# 24016) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
14-13-P	4/16/2014	—	3/15/2020	Town of Moraga	Design	\$76,442	\$76,422	7/12/2018

Project Crow Canyon Road Pavement Rehabilitation (# 24022)
Sponsor City of San Ramon
Subregion Southwest County

Scope

The project work includes pavement removal; installing new pavement; pavement grinding; pavement base repairs; installation of traffic signal detector loops; concrete curb, gutter, sidewalk replacement; curb ramp reconstruction for compliance with the Americans with Disabilities Act; utility adjustments; and traffic striping.

Status

- Construction is anticipated to start in Summer 2019.
- The Authority appropriated Measure J funds for the design phase in May 2018.

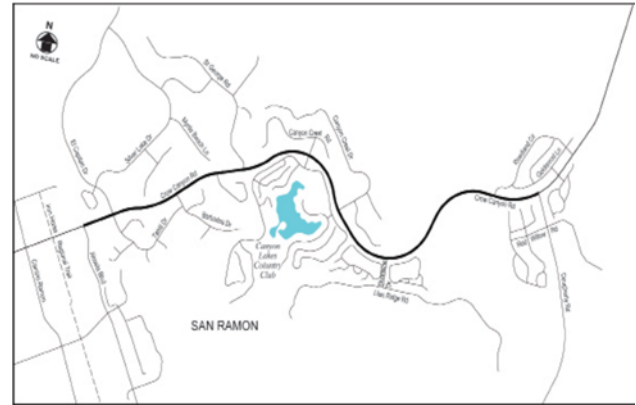
Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- Design is currently underway. 35% submittal is anticipated in January 2019.

Location



Schedule

	<i>Dates</i>
Preliminary Studies/Planning	Complete
Environmental Clearance	Complete
Design	2018-2019
Right of Way and Utilities	—
Construction	2019-2020
Landscaping	—

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$1,473
Total	\$1,473

Project Crow Canyon Road Pavement Rehabilitation (# 24022) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
18-20-P	5/18/2018	—	5/18/2021	City of San Ramon	Design	\$250,000	\$0	—

Project **Danville Boulevard/Orchard Court Complete Streets Improvements (# 24024)**
Sponsor Contra Costa County
Subregion Southwest County

Scope

To enhance safety and mobility of non-motorized travel along Danville Boulevard and Stone Valley Road throughout the business district. The project will construct a roundabout at the Danville Boulevard/Orchard Court intersection. The roundabout will include curb extensions, curb ramps and entry medians at the roundabout to reduce vehicle speeds and improve pedestrian crossings.

Sidewalks will be reconstructed through the corridor along with curb extensions and curb ramps in order to meet ADA requirements and accommodate existing mature trees in the sidewalk.

The project also includes a slurry seal and restriping of the roadway to reduce it to one travel lane in each direction through the roundabout. Other project features include storm drain modifications, stormwater treatment areas, signage, utility adjustments, and relocation of existing roadside features.

Status

- The project is in the design phase.

Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- NEPA and CEQA documents are complete.
- 65% design completion is expected in January 2019.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	Complete
Design	2017-2021
Right of Way and Utilities	2019-2020
Construction	2020-2021
Post Construction	—

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$1,370
Highway Safety Improvement Program (HSIP)	2,718
Local Funds	57
Total	\$4,145

Project Danville Boulevard/Orchard Court Complete Streets Improvements (# 24024) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
17-02-P	2/17/2017	—	2/14/2020	Contra Costa County Public Works	Environmental Clearance and Design	\$243,000	\$49,824	2/08/2018

Project Alhambra Creek Bridge and Ferry Street Enhancements (# 24031)
Sponsor City of Martinez
Subregion Central County

Scope

Construct a vehicle bridge over Alhambra Creek to provide a second connection to the Martinez Intermodal Station Phase 3 parking lot, and the Martinez Regional Shoreline Park; and construct roadway enhancements to Ferry Street from the Union Pacific Railroad right of way to the easterly boundary of the Martinez Intermodal Station Phase 3 parking lot.

Status

- Alhambra Creek Bridge work was accepted as complete by the City Council on February 1, 2017 and a Notice of Completion was filed.
- Ferry Street work is concurrently under construction with the balance of the Intermodal Station Improvements.

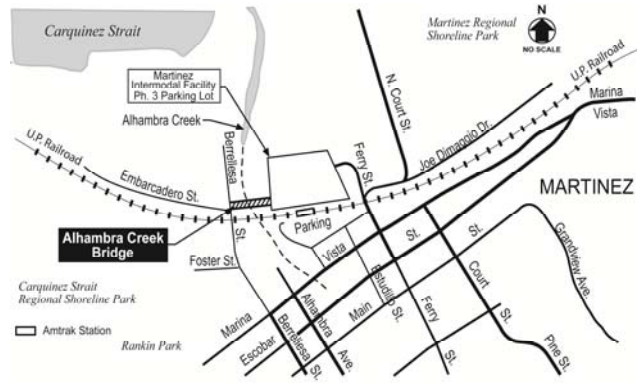
Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- Construction of the Ferry Street extension is nearing completion and all improvements are expected to be completed by March 1, 2019.

Location



Schedule

	<i>Dates</i>	
	<i>Alhambra Creek Bridge</i>	<i>Ferry Street Enhancements</i>
Planning	Complete	Complete
Environmental Clearance	Complete	Complete
Design	Complete	Complete
Right of Way and Utilities	Complete	Complete
Construction	Complete	2017-2019
Post Construction	—	—

Funding by Source (\$ 000s)

	<i>Amount</i>	
	<i>Alhambra Creek Bridge</i>	<i>Ferry Street Enhancements</i>
Measure J	\$3,600	\$6,971
Total	\$3,600	\$6,971

Project Alhambra Creek Bridge and Ferry Street Enhancements (# 24031) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
14-49-P	10/15/2014	1	12/31/2018	City of Martinez	Design	\$573,825	\$418,826	5/31/2018
15-22-P	5/20/2015	1	5/20/2021	City of Martinez	Construction	\$3,081,090	\$2,899,906	5/31/2018
17-21-P	5/17/2017	1	10/18/2020	City of Martinez	Construction	\$6,140,772	\$2,091,193	8/27/2018

Project Clayton Major Streets Improvements (# 24032)
Sponsor City of Clayton
Subregion Central County

Scope

Project is proposing repairs at various locations along Clayton Road, Marsh Creek Road and Oakhurst Drive. These will include base failure repairs, crack sealing, subgrade stabilization, pavement/curb lifting, and microsurfacing.

Phase 2 scope includes improvements to the north side of Pine Hollow Road, from the Western City limit to Gibson Lane, to close a gap in the sidewalk between the westerly city limit line and Mt. Diablo Elementary School.

Status

- Phase 1 of the project is complete.
- With the savings from Phase 1, Phase 2 was added to the project per Amendment No. 3 of the 2016 Measure J Strategic Plan.

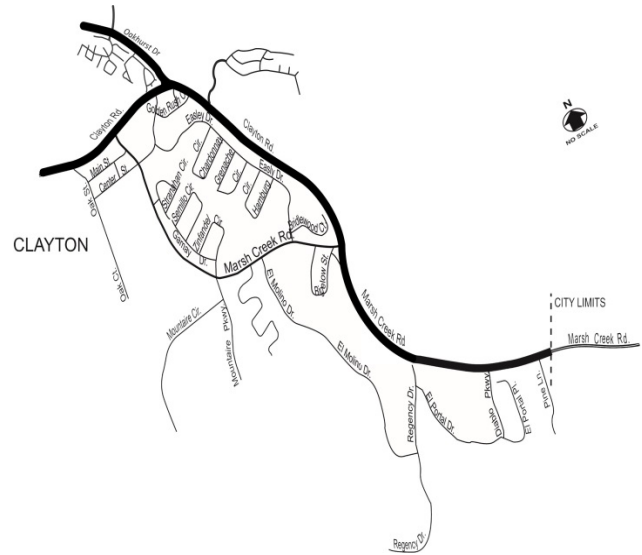
Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- Design of Phase 2 is underway. Scope has been expanded to include more of Pine Hollow Road than simply the north side.
- The City will add local funds to cover the expanded project scope.

Location



Schedule

	Dates	
	Phase 1	Phase 2
Planning	—	—
Environmental Clearance	Complete	Complete
Design	Complete	2018-2019
Right of Way and Utilities	—	—
Construction	Complete	2018-2019
Post Construction	—	—

Funding by Source (\$ 000s)

	Amount	
	Phase 1	Phase 2
Measure J	\$849	\$375
Total	\$849	\$375

Project Clayton Major Streets Improvements (# 24032) – continued

Local Agency Measure C/J Funding Appropriation

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
16-51-P	11/16/2016	1	11/16/2019 / Closed	City of Clayton	Construction and Construction Management - Phase 1	\$849,327	\$849,327	7/31/2017
17-51-P	10/18/2017	—	10/18/2020	City of Clayton	Design of Phase 2	\$28,500	\$28,500	7/26/2018

Project	Main Street Downtown Improvements – Vintage Parkway to O’hara Avenue (# 28003)
Sponsor	City of Oakley
Subregion	East County

Scope

The project will update all necessary traffic signal equipment at the intersections of Main Street/Vintage Parkway, Main/Norcross Lane, and Main Street/O’hara Avenue with new ATC 2070 controllers, video detection, and advanced pedestrian push buttons. The existing controller at the intersection of Main Street and Vintage Parkway is currently a 170 controller and will be upgraded to match the two adjacent intersections.

Install communication lines between all three intersections and City Hall to facilitate implementation of a functional Central Management System. The new system will monitor and control traffic flow to adjust time-of-day plans, as needed in the area.

Status

- The project is complete, and all elements have been implemented.

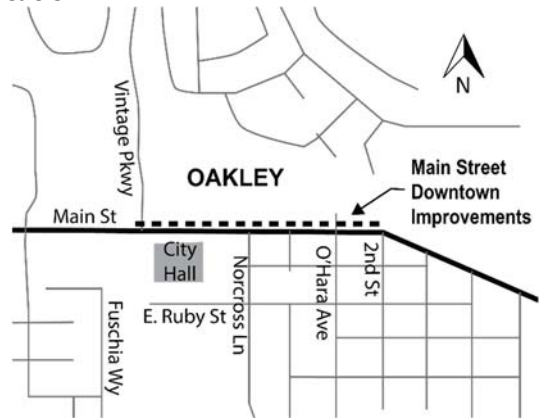
Issues/Areas of Concern

- None.

Update from Previous Quarterly Report

- Final connections to the Central Management System and software configurations were completed on November 14, 2018.
- Ribbon cutting was held in November 2018.
- Project will be moved to the completed list in the next update.

Location



Schedule

	<i>Dates</i>
Planning	Complete
Environmental Clearance	Complete
Design	Complete
Right of Way and Utilities	Complete
Construction	Complete
Post Construction	—

Funding by Source (\$ 000s)

	<i>Amount</i>
Measure J	\$87
Total	\$87

Project Main Street Downtown Improvements – Vintage Parkway to O’hara Avenue (# 28003) – continued

Local Agency Measure C/J Funding Appropriations

Resolution No.	Original Resolution Date	Revision No.	Resolution Expiration	Agency	Description	Appropriated Amount	Billed to Date (10/31/2018)	Last Billed Date
18-01-P	1/17/2018	—	1/17/2021	City of Oakley	Construction and Construction Management	\$87,000	\$26,085	7/31/2018

Eugene Mulero | Staff Reporter

December 5, 2018 3:00 PM, EST

Rep. DeFazio on Earmarks Ban: ‘Don’t Think We Need That Rule’



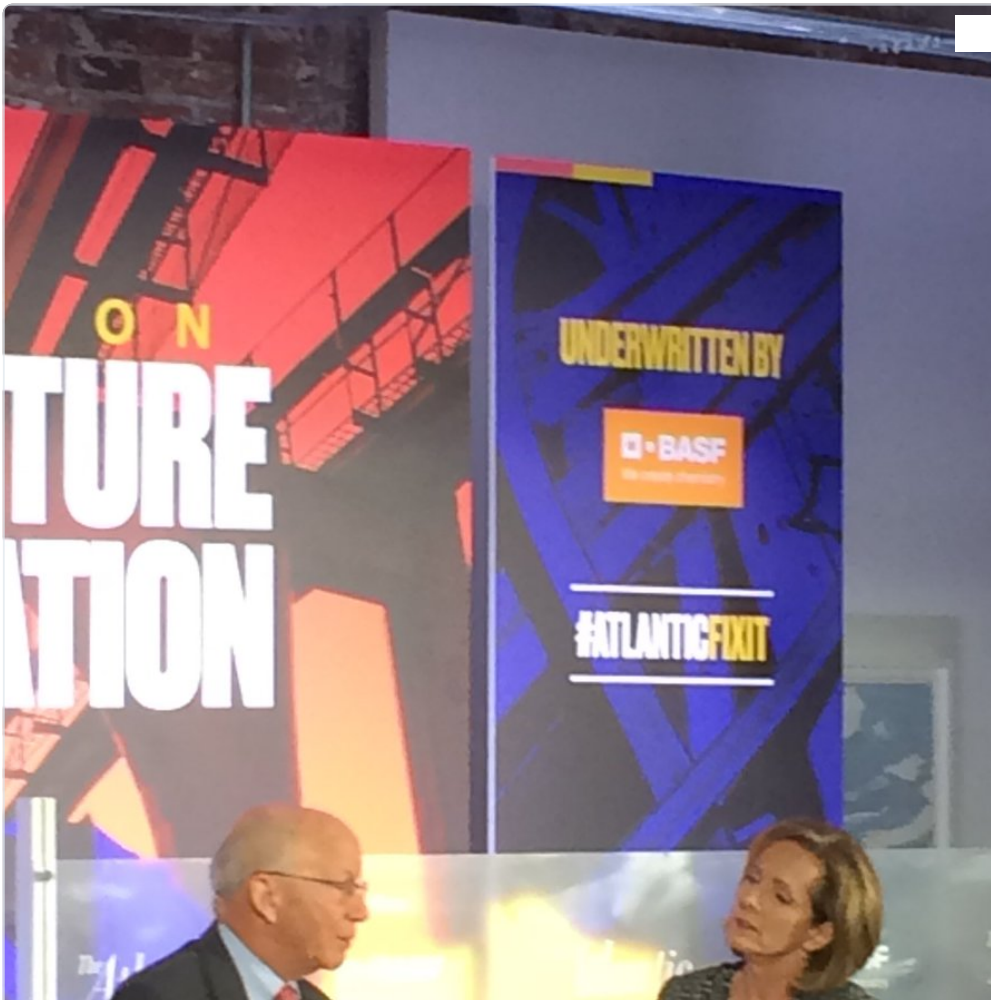
DeFazio says the ban on earmarks is no longer necessary. (Zach Gibson/Bloomberg News)

WASHINGTON — The next chairman of the transportation policy panel in the U.S. House of Representatives said the ban on earmarks the GOP imposed nearly a decade ago is no longer needed.

Rep. Peter DeFazio (D-Ore.) told an audience at an event hosted by The Atlantic magazine on Dec. 5 the ban is “nonsensical” and said that, if properly applied, earmarks can be useful.

Prior to the ban, members of Congress often dedicated federal funds for specific projects in their districts. At times, earmarking allowed a lawmaker to bypass authorizing committees.

DeFazio will lead the Transportation and Infrastructure Committee beginning in January and acknowledged he has sought to reform the earmark process.



Eugene Mulero
@eugenemulero

DeFazio: The President really wants to do an infrastructure bill; people are tired of being stuck in congestion [#AtlanticFixIt](#)

7 8:07 AM - Dec 5, 2018

[See Eugene Mulero's other Tweets](#)

“Do we think that all of the wisdom on how to better serve the people of your district, of your state if you’re a senator, comes from [U.S.] DOT in D.C. or your state DOT? No,” DeFazio said.

“If we have a totally transparent process with people who are more accountable than the Secretary of Transportation, or more accountable than the bureaucrats who run your state agency, you might get some projects done that they’re ignoring,” he said.

Concerns raised by watchdog groups, academics and congressional observers about potential misappropriation of funds related to earmarks helped to convince Republican leaders to ban them after the 2010 Tea Party wave elections. Earmarking funds for Alaska’s “bridge to nowhere” — a project spearheaded by that state’s late Sen. Ted Stevens — brought the issue national exposure.

John Cunningham

From: Leland Frayseth <leland.frayseth@gmail.com>
Sent: Thursday, December 20, 2018 9:30 AM
To: armando.quintero@cwca.gov; carol.baker@cwca.gov; andrew.ball@cwca.gov; joseph.byrne@cwca.gov; daniel.curtin@cwca.gov; joe.delbosque@cwca.gov; catherine.keig@cwca.gov; maria.herrera@cwca.gov; Yun, Joseph@DWR; cwca@water.ca.gov; Shoemaker, Brianna@DWR; holly.stout@water.ca.gov; amy.young@water.ca.gov; Paul.Cambra@cwca.gov
Cc: Jerry Brown; eavila@avilaassociates.com; jburgh@ccwater.com; Marguerite Patil; Jennifer Allen; Rachel Murphy; Sponsler, Michael; Gerringer, Teresa; John Cunningham; Brown, Ryan-Thomas; Lia Bristol; sharon.tapia@water.ca.gov; Kristen@DWR; lfrayseth@wavecable.com
Subject: New Copernicus images - metastasized Los Vaqueros algal bloom, no evidence of dam crest road storm drains
Attachments: 090215-4 LV Dam Erosion Repair.pdf

Dear California Water Commission (CWC) Commissioners Quintero, Baker, Ball, Byrne, Curtin, Del Bosque, Keig, Herrera, staff, the public

Please study this newly available Copernicus satellite imagery dated 6/28/2018 revealing the Los Vaqueros algal bloom has metastasized throughout the entire body of water. I encourage you to install Google Earth and study the images there where you can see the normal water color without an algal bloom in nearby Bethany reservoir and Clifton Court forebay under identical lighting. The imagery reveals dam face repairs and associated construction equipment at the base of the dam. What is missing are storm drains and provisions to carry storm water from the dam crest road runoff down into Kellogg Creek that were shown in yellow on the attached 2015 CCWD board docket item.

Los Vaqueros reservoir 28 June 2018 algal bloom





I have written this California Water Commission twice previously on this matter please reference this link https://cwc.ca.gov/-/media/CWC-Website/Files/Documents/2018/Correspondence/060518_LelandFrayseth_LosVaqueros.pdf and please note the link that is embedded within that reference is broken because of your recent web re-design.

Contra Costa Water District is raising my 2019 rates I believe because they need to match money you are giving them to expand this failed project to 275,000 AF. CCWD's board president Lisa Borba never met a water rate increase she didn't like in the 3 years she has been president my rates have gone up every year.

I voted no on last month's \$9 billion water bond as did the majority of California voters. I am getting weary of seeing poor water project design and management like Oroville and this project and I want to see concrete actions to change the leadership, staff and culture.

Thank you for reading my comments and studying the Copernicus images.
Leland Frayseth

34+ year CCWD ratepayer, citizen, voter, taxpayer



Agenda Item No. 4.
 Meeting Date: September 2, 2015
 Resolution: Yes No

AGENDA DOCKET FORM

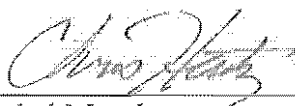
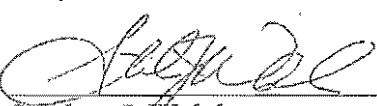
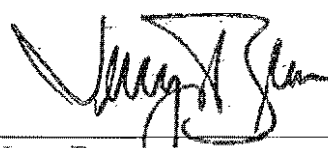
SUBJECT: AUTHORIZE CONSTRUCTION AND REPAIR SERVICES FOR THE LOS VAQUEROS DAM EROSION REPAIR PROJECT

SUMMARY: In December 2014, heavy rains and inadequate drainage along the dam crest roadway caused surface soil erosion on the downstream face of the Los Vaqueros (LV) Dam. Though not threatening to dam safety, repair of the area is needed to prevent further erosion and is required by the California Division of Safety of Dams. The damaged area has been evaluated by a geotechnical engineer, a repair approach has been designed, and the area has dried sufficiently to allow the repair to proceed. This project will replace the eroded material with material stockpiled in the LV Watershed that matches the remainder of the dam face. In addition, this project will improve the roadway drainage in this location to eliminate future erosion as a result of roadway runoff. Erosion repairs will be completed before October 15, 2015.

The Board authorized contracts with two contractors, C. Overaa & Co. (Overaa) and GSE Construction (GSE), on August 6, 2014 to provide Construction and Repair Services for planned capital projects, as well as assistance in responding to unplanned, urgent work, such as this repair. Consistent with the project controls and authority levels established for the Construction and Repair Services contracts, pricing was obtained from both contractors. Overaa provided the lowest pricing of \$109,500. The Engineer's Estimate for the repair was \$150,000. To account for the potential of changed conditions such as over-excavation of additional loose soil, \$130,000 of contract authority is requested. This task order exceeds the \$100,000 General Manager task order ceiling, and Board authorization for this task order is needed.

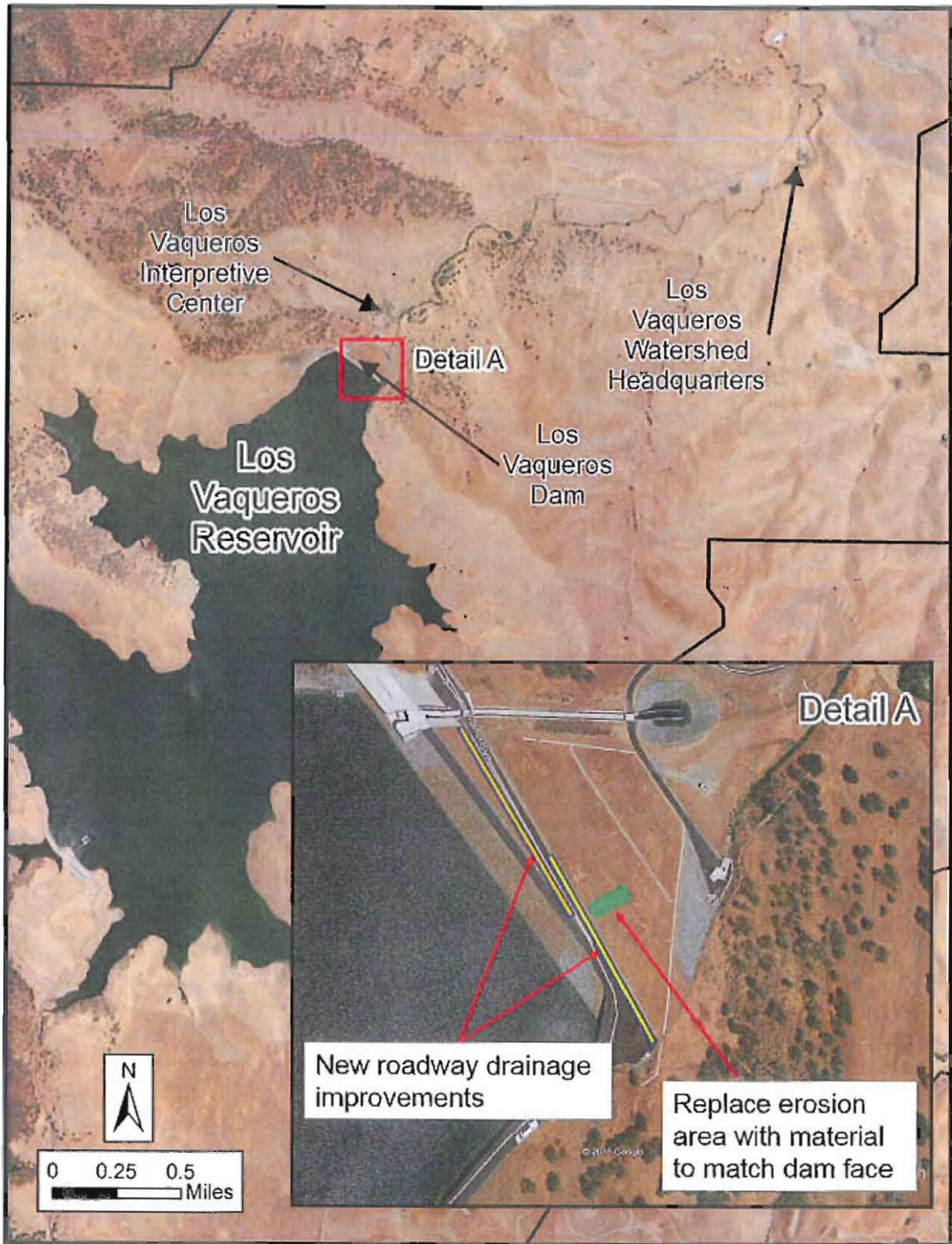
FISCAL IMPACT: The total requested authorization is \$130,000. Funding for this work is available from the FY16 Untreated Water Reservoir Rehabilitation Program budget, which was made available by re-prioritizing roadway and fencing projects in the Untreated Water Facility Improvements Program.

RECOMMENDED ACTION: Authorize execution of a task order in the Construction and Repair Services contract with C. Overaa & Co. for Los Vaqueros Dam Erosion Repair Project services in an amount not to exceed \$130,000.

 Rachel Murphy Director of Engineering	 Stephen J. Welch Assistant General Manager	 Jerry Brown General Manager
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RRM/CH:mc

Attachment: Location Map



Location Map

2018 ACTIVITIES AND ACCOMPLISHMENTS



JAN

- Ferry Street enhancements in Martinez began.
- Pleasant Hill BART Bike Station opened to the public.

MARCH

- Concord City Council approved construction contract for Clayton Road/Treat Boulevard/Denkinger Road Capacity Improvements.
- Design activities restarted on the Mokelumne Trail Overcrossing.



FEB

- Hosted our 4th Annual Redefining Mobility Summit bringing together government and industry leaders to discuss the future of transportation & featuring live demonstrations.
- CCTA's pilot project became the first shared autonomous vehicle to test on public roads in California.
- Won the Caltrans 2017 Excellence in Transportation Award for the Highway 4 widening project.
- Landscaping work began on Highway 4 between Loveridge and Century.
- Start of construction of the Pleasant Hill BART Parking Structure Elevator Project.
- Construction complete on the Orinda BART Downtown Access Ramps and Lighting Project.

APRIL

- Four-year maintenance landscaping contract started for Interstate 680 (I-680) Auxiliary Lane - Segment 2.
- Landscape contract awarded for Highway 4 Somersville to Cavallo.
- Construction started on El Cerrito del Norte BART Station Modernization.
- Construction started on Transit Oriented Development (TOD) and Access Improvements at El Cerrito del Norte BART Station, Phase 2.



Investments Improving Your Commute

CCTA + Measure J helped modernize Highway 4 and extend BART to Antioch

eBART effect on Highway 4*

- 0.2 mph
- 5.2 min



- Launched NeoGov and brought recruitments in house.
- Won CTF's Advanced Technology Program of the Year award for our shared autonomous vehicle pilot program.
- Ribbon Cutting Ceremony held for BART Extension to Antioch - eBART.
- Innovate 680 receives \$8 million in Federal Surface Transportation Program (STP) funds from the Metropolitan Transportation Commission (MTC).

MAY

JUNE/ JULY

- Began pilot program with City of Walnut Creek to fund Lyft rides for seniors.
- Kick-Off Phase II of Integrated Dynamic Transit Operations with Tri Delta Transit.



Supporting the Community

CCTA + Measure J
Funding Free Lyft Rides for Walnut Creek Seniors

\$10K/year Funded by Measure J

2 year pilot program



AUG-DEC ON BACK



CONTRA COSTA
transportation
authority

2018 ACTIVITIES AND ACCOMPLISHMENTS



AUG

- Received Government Finance Officers Association (CFOA) Award.
- Stephanie Hu won APWA NorCal Chapter's Staff of the Year award.

- Launched new partnership with Miles to reward travelers for their everyday trips.
- Hercules Bay Trail segment completion.
- East Bay Regional Parks district trail completion in Pinole.
- Randy Iwasaki testified before the House Transportation & Infrastructure subcommittee on Highways and transit in a Hearing on "Innovation in Surface Transportation."



OCT

- Groundbreaking for new I-680 Southbound HOV completion and Express Lane Project.
- Award of construction contract for I-680/SR4 - Phase 3.
- Completion of Pacheco Blvd widening at Vine Creek in Contra Costa County.
- Innovate 680 (Project 8009) receives an additional \$2 million in Federal Surface Transportation Program (STP) funds from the Metropolitan Transportation Commission (MTC) as part of a fund exchange agreement.

SEPT



NOV



- Debut new ccta.net website.
- Completion of the Main Street Downtown Improvements in Oakley.
- Hosted our first 'Girls Lead the Way' STEM event in partnership with Chevron and the Contra Costa Economic Partnership to encourage middle school girls to pursue careers in science, technology, engineering & math.
- Ivan Ramirez wins Associated General Contractors (AGC) Skill, Integrity and Responsibility (SIR) Award.
- eBuilder implementation begins.



DEC

- CCTA named Public Agency of the Year by Conference of Minority Transportation Officials (COMTO).
- Cut the ribbon the Balfour Road Interchange Improvement Project.
- Kicked-Off the Contra Costa Electric Vehicle Readiness Plan.
- Installation of four Intelligent Cabinet Interface to Traffic Equipment (iCITE®) units in Brentwood, and an additional four in Concord by Eberle Design, Inc. This new capability is the first step towards created connected and smart intersections in these cities.
- Bids opened on last landscaping contract on Highway 4 east.
- Completion of Farm Bureau Road Safe Routes to School Phase 2 project in the City of Concord.



2019

