







# Maintaining and Operating the Local Streets and Roads Network – It's not just about pavement

	<p>Pavement- This is what most people think about when they think about Local Streets and Roads Maintenance. The pavement is just one of many components of a road that must be maintained. It is one of the most visible when it fails, however, other components, such as drainage, signals, lighting, slopes, etc. are just as important.</p>
	<p>Pavement – The last 5 years have been kind to us regarding winter weather. However, this year's El Nino storms are exposing the poor condition of our pavements. Water is the pavements worst enemy if it reaches underneath through cracks and worn surfaces. These small cracks can lead to big potholes very quickly when exposed to wet weather.</p>
	<p>Striping – striping of our roadways provides guidance to roadway users. With heavy traffic loads and weather, these stripes and markings tend to wear out and must be maintained on a regular basis.</p>
	<p>Aging Infrastructure – underground road drainage pipes are at the end of their useful life and are starting to fail at an increasing rate. Some of the failures lead to sink holes in the roadway.</p>
	<p>Hydrauger Maintenance – Hydraugers are designed to relieve slopes of excess water that can cause unexpected slides. These hydraugers must be maintained. Many of them were installed 50 years ago and are at the end of their useful life.</p>

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	<p>Sinkhole in the roadway caused by road drainage pipe failing. We currently have a sinkhole on Hazel Avenue in East Richmond Heights. Several years ago we had a sink hole form on Marsh Creek Road that required immediate action to prevent the lane from collapsing.</p>
	<p>Street Sweeping – Clean Water regulations are demanding that more street sweeping occur to prevent debris, sediment, PCBs, and other road contaminants from reaching the drainage system and our creek. Bicycle lanes also require a higher level of maintenance and require street sweeping that eliminates debris that can be a danger to cyclists.</p>
	<p>Storm Drain Inlets – These inlets require special attention for on-going maintenance. First, the grate must be maintained to prevent cyclists from dropping a tire through the grate. The inlets must also be cleaned of debris on an annual basis to prevent flooding (County has hundreds of these inlets). The inlets will need to be retrofitted to prevent trash from entering the system to comply with the Clean Water permit condition on trash reduction.</p>
	<p>Traffic Signals – On-going costs include electricity costs, bulb outages, graffiti removal, push button maintenance, signal box maintenance, signal controller maintenance, signal timing adjustments, garage sale posting removal, repainting poles, street name signs, striping of crosswalks, etc.</p>




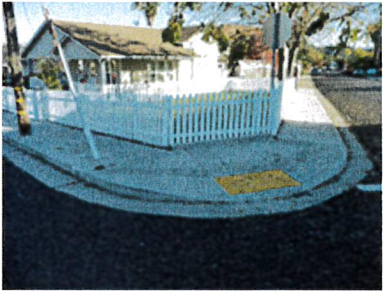

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	<p>Road Signs – The County maintains hundreds of street signs. These must be checked routinely for reflectivity and replaced if necessary. The signs are often damaged by gunshots, tagged by graffiti artists and gangs, and take a beating from weather and sun. These must be maintained to ensure a safe roadway.</p>
	<p>Environmental Mitigation – most new projects require environmental mitigation that has a one-time installation cost, but then requires maintenance in perpetuity.</p>
	<p>Illegal Dumping – A big problem that is getting worse. It’s unfortunate that we must use gas tax dollars to clean up illegally dumped trash instead of repairing potholes. We have taken measures to reduce this cost, but with new Clean Water trash reduction requirements, this may require a larger investment of scarce gas tax funding for permit compliance.</p>
	<p>Vegetation Management – Vegetation along roadways left unchecked can obscure traffic signs, traffic signals, sight lines for drivers, pedestrian facilities, bicycle facilities. Vegetation that is sick or stressed can also pose a problem and cause property damage and other safety issues in the road right of way.</p>
	<p>Guardrails – guardrails are a major safety component of the road system. These often get damaged and must be replaced. Also, guardrail standards change and much of our guardrail system is not up to current standards.</p> <p>Guardrail end treatments – Standards for guardrail end treatments have been increased and will require the County to change all guardrail</p>

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	end treatments.
	<p>Complete Streets – The complete streets concept requires the installation of pedestrian and bicycle facilities that require on-going maintenance.</p>
	<p>Aesthetics – there is a bigger demand by residents to landscape roadways. Street trees require additional care and routine maintenance. Most landscaping requires irrigation systems that also require on-going maintenance and additional cost to pay for the water.</p>
	<p>Storm Damage – The County roads are susceptible to storm damage, especially rural roads. These are unexpected expenditures that are, for the most part, not always reimbursed through emergency FEMA funding.</p>
	<p>Parking Signage/Curb Painting – Although minimal, the County does have parking restrictions that require signage and curb painting to be enforced. These require routine maintenance if we want the parking restrictions enforced by the CHP or Sheriff.</p>
	<p>Complete Streets/Landscaping – Communities often desire nicely landscaped downtown complete street projects. Many parts in the County don't have landscape districts to fund the on-going maintenance, operations, and replacement of the landscaping. Gas tax is used to maintain these landscape features in addition to the hardscape features.</p>

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	<p>Slope stability – slopes adjacent to roadways sometimes become unstable and require routine maintenance for the drainage systems that drain the slopes. Concrete ditches must be cleaned, roadside ditches must be cleaned, hydroaugers cleaned, loose rock removed.</p>
	<p>Traffic Control Devices – Traffic control devices are necessary for safety of the roadway. These devices are often damaged and need on-going replacement and maintenance. The delineators on Vasco Road require approximately \$30,000 per year to replace damaged delineators.</p>
	<p>Complete Streets/Community Identity – Some communities desire a certain theme to a complete street project to reflect a community's identity. These deviations from standard designs requires unique inventories be maintained and are often more expensive to construct and maintain.</p>
	<p>ADA Retrofitting – The road network must be accessible to all. The County is constantly upgrading its road facilities to be ADA compliant. This involves curb ramps, driveway depressions, pedestrian push buttons, audible signals, etc.</p>
	<p>Road Maintenance Equipment – The Maintenance Division requires heavy equipment to properly maintain the road system. This involves dump trucks, crew trucks, backhoes, rollers, chip spreaders, grinders, motor graders, vacuum trucks, etc.</p>

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Bridge Maintenance – maintain 111 vehicle and pedestrian bridges. Routine maintenance is critical to achieve full service life of bridges. Approximately 9% of unincorporated Contra Costa County bridges have a Health Index of Poor (rating between 0-80 on a scale of 100)

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