



May 11, 2022

Blackhawk GHAD Board of Directors  
c/o GHAD Board Member Candice Andersen  
309 Diablo Road  
Danville, California 94526

**Subject: Third Amendment to Plan of Control for the  
Blackhawk Geologic Hazard Abatement District**

Board members:

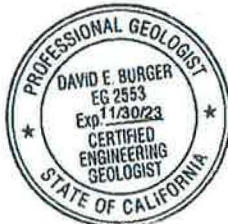
Please find attached the Third Amendment to the "Plan of Control" for the Blackhawk Geologic Hazard Abatement District (GHAD). Upon formation of the Blackhawk GHAD in 1986, a Plan of Control (POC) was implemented that expressly described its preliminary nature and that the POC would be subject to future revisions and modifications. The POC was subsequently updated in 2004<sup>1</sup> and modified to better describe the responsibilities and limitations of the GHAD. In 2006<sup>2</sup>, the POC was modified again to include the annexation of a 48-acre parcel known as "The Canyons at Blackhawk". Since the implementation of the updated 2006 POC, we have gained additional knowledge of the geologic hazards within the GHAD and have further refined best practices for mitigating them. As such, we now submit this Third Amendment POC to the Blackhawk GHAD Board of Directors for approval. This updated POC supersedes all previous versions and has been prepared in accordance with the requirements of the California Public Resources Code Division 17, Section 26500-26654 of the State of California.

Sincerely,

**Blackhawk Geologic Hazard Abatement District**

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<sup>1</sup> Amendment 1 to Plan of Control dated February 27, 2004 and approved May 25, 2004

<sup>2</sup> Amendment 2 to Plan of Control dated August 30, 2006 and approved October 17, 2006

**BLACKHAWK GEOLOGIC HAZARD  
ABATEMENT DISTRICT**

**THIRD AMENDMENT TO  
PLAN OF CONTROL**

**May 11, 2022**

**BLACKHAWK GEOLOGIC HAZARD ABATEMENT DISTRICT  
PLAN OF CONTROL**

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## I. INTRODUCTION

The Blackhawk community is an approximately 2,800-acre mixed-use development comprised of 2,707 residential parcels, two golf courses, multiple parks, a commercial center with several office buildings, a retail shopping center, a theater, a museum, an elementary school, and various other improvements and amenities. Blackhawk is in Contra Costa County Service Area ("CSA") M-23, and located east of the town of Danville, California, within an unincorporated area of Contra Costa County historically affected by geologic hazards. The boundaries of CSA M-23 were established on June 14, 1977 by Resolution 77/477 of the Contra Costa County Board of Supervisors ("Board of Supervisors"). On September 20, 1977 the Board of Supervisors passed Resolution 77/767 to provide funding for specified extended services (e.g., street lighting, landscape maintenance, drainage maintenance, etc.) within CSA M-23. On April 22, 1986, by Resolution 86/209, the Board of Supervisors added "geologic hazard abatement" to the list of services authorized to be performed within CSA M-23.

The Blackhawk Geologic Hazard Abatement District ("Blackhawk GHAD", "GHAD" or "the GHAD") was formed on April 22, 1986, by Resolution 86/210 of the Board of Supervisors under the authority of the California Public Resources Code (Section 26500 et seq.), which governs the formation and operation of geologic hazard abatement districts ("GHAD Law"). The Blackhawk GHAD was formed to address both known and potential landslide hazards within and adjacent to its boundaries.

Funding for the Blackhawk GHAD is provided through an agreement with Contra Costa County under which the County provides the GHAD with CSA M-23 surplus revenues (i.e., after deduction for other M-23 services such as drainage maintenance and flood control). CSA M-23 receives revenue from an ad valorem property tax collected on properties within its boundaries. Funding is currently transferred to the Blackhawk GHAD through an agreement entered into with the County via Resolution 2011/03 adopted on March 15, 2011.

The Board of Supervisors serves as the GHAD Board of Directors and a GHAD General Manager ("General Manager") manages the daily operations of the GHAD. The General Manager reports directly to the GHAD Board of Directors.

GHAD Law requires that a Plan of Control ("POC") be prepared that describes in detail the geologic hazard of concern, its location, and the area affected. A plan for the prevention, mitigation, abatement, or control of the hazard must also be included. The General Manager is tasked with implementing the POC. This POC, presented herein, includes a description of the geologic hazards present in the Blackhawk region (limited to threatening and actual landslides) and lays out both informational (e.g., document history, definitions, geologic conditions) and operational plans (including limitations and exclusions) for the prevention, mitigation, abatement, or control of the geologic hazards.

GHAD "Improvements" (as defined in GHAD Law) and all GHAD activities or projects undertaken in furtherance of, or in connection therewith, have been deemed by GHAD Law to be specific actions necessary to prevent or mitigate an emergency as described within Public Resources Code Section 21080(b)(4) (See, Pub. Res. Code Sections 26601 and 26505). Consistent therewith, all GHAD projects are exempt from review under the California Environmental Quality Act and are not subject to local permitting requirements.

## **II. HISTORY OF THE BLACKHAWK GHAD PLAN OF CONTROL**

Upon formation of the Blackhawk GHAD in 1986, the original POC was adopted which outlined the type of geologic hazards (landslides) to be addressed by the GHAD. While GHAD Law broadly defines a "geologic hazard" that can be addressed by a geologic hazard abatement district, the Blackhawk GHAD was created to address only threatened or actual landslides<sup>1</sup>. However, only generalities for prevention, mitigation, abatement, and control of landslides were provided in the original POC due to a lack of knowledge about the extent of potential future landslides that the GHAD was formed to address. The original POC explicitly stated that the POC was a "[...] preliminary document" and that it "[...] will be subject to revisions and modifications, as new data and investigations warrant."

The GHAD benefits from being located in the San Francisco Bay Area where extensive expertise and constant innovation exist for addressing geologic hazards. Thus, it is important that the POC

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<sup>1</sup> The original POC states "The proposed district [...] is prone to new landslides and reactivation of existing landslide areas."

be updated periodically to ensure both consideration of the known history of the landslide hazards within the GHAD areas and to reflect currently available investigation and mitigation practices.

After nearly 20 years of operation under the original POC and with new insight gained on the response of the landscape and community to geologic hazards, the POC was amended in 2004 (First Amendment) and 2006 (Second Amendment)<sup>2</sup> to provide additional guidance for the GHAD's function and operation. Following another 15 years of operation, this Third Amendment further updates the functional and operational aspects of the GHAD by considering the latest available information on landslide hazards and integrating new practices and technologies for mitigating these hazards. This Third Amendment builds on the foundation laid out by the previous POCs, clarifies and further reinforces the intents of the original formation of the GHAD, and reflects the GHAD's current practice. This Third Amendment supersedes the First Amendment and Second Amendment to the POC.

### **III. DEFINITIONS**

The following terms (whether capitalized or not in this POC) shall have the following meaning:

- A. "Geologic hazard" as that term is used herein, means any actual (active or imminent) or threatened landslide.
- B. "Landslide" is defined as a mass comprised of rock, soil and other debris (e.g., water, vegetation) that has been displaced downslope by a sliding, flowing, or falling mechanism that results in an established and distinct surface of separation between moving and non-moving rock and/or soil.
- C. "Slopes" or "sloping ground" is defined as land that is inclined with a non-zero angle of inclination as measured from the horizontal. Slopes prone to landsliding are typically (but not limited to) those inclined more than 20 degrees.

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<sup>2</sup> The Second Amendment was identical to the First Amendment to the POC except that it expanded the GHAD boundaries to annex The Canyons at Blackhawk Territory.

- D.** "Soil creep" is defined as the slow (on the order of 0.4 inch per year<sup>3</sup>) downhill movement of near-surface (within the zone of seasonal changes of moisture and temperature) soil particles or weathered expansive bedrock materials resulting from the combined influences of gravity with wetting and drying cycles. Soil creep is distinguished from landsliding through the generally continuous motion and lack of distinct boundaries (both laterally and with depth) observed in soil creep.
- E.** "Site improvements" indicates buildings, roads, sidewalks, utilities, constructed trails, golf course amenities, swimming pools, tennis courts, gazebos, cabanas, geologic stabilization features, V-ditches, or similar items.
- F.** "Lot" or a "parcel" is defined as any single private or public area of land with closed boundaries defined by a recorded survey.
- G.** "Creek", as used herein, is equivalent to a "watercourse" as defined by the Contra Costa County Code Section 1010-6.028. A creek is thus defined as a natural or human-made channel for transporting water, including the stream bed and the banks, whether continuously flowing or intermittent. A channel is as defined by Contra Costa County Code Section 1010-6.004.
- H.** "Structure setback area" indicates the portion of a lot situated between a creek and the "structure setback line" as defined by the Contra Costa County Flood Control District (see Contra Costa County Code Sections 1010-6.024, 914-14.012, and 914-14.014).
- I.** "Structure setback line" indicates the line separating the structure setback area from the remainder of the lot where a residential structure or any permanent site improvement (other than drainage structures) is situated, as defined by the Contra Costa County Flood Control District (see Contra Costa County Code Section 914-14.012).
- J.** "GHAD project" – The prevention, mitigation, abatement, or control of a geologic hazard as defined herein.

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<sup>3</sup> For example, see Fleming, R.W. and Johnson, A.M., 1975, Rates of seasonal creep of silty clay soil, *Quaternary Journal of Engineering Geology*, Vol. 8, pp. 1-29.



#### **IV. GEOLOGIC HAZARD DESCRIPTION**

The Blackhawk GHAD is located south of Mount Diablo, along the southwestern slopes of Blackhawk Ridge, in Contra Costa County, California. Like many other parts of Contra Costa County and the San Francisco Bay area overall, the topography and geology of the Blackhawk region combine to form terrain that can be susceptible to landsliding (see Appendix A – Geologic Conditions). Considerable effort and resources (e.g., slope regrading, removal of identified existing landslides, and installation of drainage infrastructure) were invested to address the long-term stability of slopes during the development of the residences and infrastructure within the GHAD boundary. However, the underlying soils and rocks can still be intermittently prone to instability from a suite of triggering processes that include saturation or near-saturation of soils or bedrock due to rainfall or domestic water sources, and earthquake shaking. The type of landslides that have occurred in Blackhawk are typical for the San Francisco Bay region and generally occur due to intense or prolonged rainfall during the winter season. Upon the arrival of large storms, the soils can become nearly or fully saturated with resultant subsurface water pressures that may destabilize existing slopes. Landslides may be shallow (<5 feet deep) and involve surficial soils with potential to turn into highly mobile debris flows, or they may be deeper (>5 feet) and involve both soil and rock materials that move shorter distances. Both types of landslides may, in many cases, be prevented, mitigated, abated, or controlled by proactive and/or responsive activities; these activities are the purpose of the GHAD.

#### **V. GHAD BOUNDARIES AND ANNEXATION POLICY**

The boundary of the Blackhawk GHAD is shown in Figure 1 and is described by the Metes and Bounds Survey included in Appendix B. In 2006, the GHAD completed an annexation of approximately 48 acres known as The Canyons at Blackhawk Territory. The annexation was approved on October 17, 2006 by Resolution 2006/638 of the Board of Supervisors under the authority of the GHAD Law with a resultant change to the GHAD boundary. The annexed region is included in the survey included in Appendix B that defines the GHAD boundary in Figure 1.

As required by GHAD Law, the GHAD Board of Directors (in addition to the Board of Supervisors as the original sponsors of the GHAD's formation) must approve annexation of properties not currently within the GHAD boundaries.

## **VI. AUTHORIZED GHAD PROJECTS**

The GHAD's operations are focused on the monitoring, maintenance, repair, and mitigation of threatened or actual landslides within the GHAD's boundaries. Typical GHAD projects fall into two categories: (1) major maintenance and monitoring activities of infrastructure and instrumentation meant to prevent instability of existing slopes and of which include, but are not limited to, cleaning, maintaining, replacing, and/or installing surface and subsurface drainage systems and monitoring instrumentation, and (2) major landslide repair projects requiring, but not limited to, site grading and installation of drainage or engineered earth retaining system infrastructure. The General Manager has sole discretion for defining GHAD project priorities (subject to the guidance provided in Section VII and Section VIII) and for the selection of repair and mitigation methods appropriate to a particular situation, within the constraints described in this and other sections of the POC.

Property owners within the GHAD, whether private landowners or homeowners associations, may contact the GHAD management to either report a new geologic hazard incident or condition on their property or to inquire about an already-reported incident. When contacted, the General Manager shall respond to the inquiry and indicate whether or not the incident or inquiry falls within the responsibilities of the GHAD, and if so, what steps may be taken to address the incident. In cases where the property owner incurs their own expenses related to the prevention, mitigation, abatement, or control of a geologic hazard, as described herein, the reimbursement policies outlined in Section IX shall apply. In cases where the General Manager determines that an incident does not qualify for GHAD involvement and the property owner disagrees, the appeals policy outlined in Section X shall apply.

GHAD projects and situations in which the GHAD is authorized to prevent, mitigate, abate, or control geologic hazards are listed and described here in Sections VI(A) through VI(E):

### **A. Landslide Mitigation During and in Preparation for Emergencies**

During emergency situations when a landslide presents an active or imminent threat to improved property, the GHAD may implement interim slope stabilization measures that can arrest or minimize further slope movement until long-term mitigation measures can be implemented. Interim slope stabilization measures include, but are not limited to, the

temporary installation of slope coverings or drainage infrastructure to prevent further water infiltration or erosion, installation of structural elements to prevent or arrest movement of a landslide, or grading to unload or buttress unstable slopes. Emergency preparation measures may also be taken in advance of threatening landslides; these measures may include stockpiling slope stabilization materials and/or having resources in-place ready to respond rapidly.

## **B. Preventative Landslide Mitigation and Geotechnical Investigations**

The GHAD may prevent, mitigate, abate, or control landslides that threaten improved property using various mitigation techniques. The selection of mitigation technique depends on the type and motion of landsliding, equipment accessibility, urgency, and other factors. Prevention of landslides can sometimes be achieved using surface and subsurface drains. Imminent landslides can be stabilized by the construction of retaining structures such as closely spaced cast-in-place drilled piers reinforced with steel beams, soldier beam and lagging wall(s), or an array of tie-back or soil nail anchors extending beyond the slide plane (i.e., surface of separation between moving and non-moving soil and rock). Landslide-damaged slopes can be reconstructed and stabilized by removing the landslide debris and rebuilding the slope with properly compacted and drained, engineered fill. These or other appropriate techniques should be chosen based on the actual site conditions. The General Manager will make the final decision in determining the type of action that best fits the need of each GHAD project.

At the General Manager's sole discretion, a geotechnical investigation may be conducted for areas where unstable conditions or landslides exist or are believed to exist. The purposes of the geotechnical investigation are to determine the cause of the unstable slope conditions and to identify and define repair or stabilization options. Geotechnical monitoring, whether short-term, as part of an active landslide investigation, or long-term, to track changes in groundwater levels and/or surface and subsurface movement, are authorized activities of the GHAD as related to the prevention, mitigation, abatement, or control of landslides within the GHAD's boundaries.

### **C. Activities Related to Slope Stabilization Surface and Subsurface Drainage Facilities**

The GHAD may maintain, repair and/or replace those portions of surface and subsurface drainage facilities such as concrete “V” ditches, storm sewer lateral pipes, catch basins, drainage inlets, utility access chambers, storm sewer inlets and outlets, horizontal drains, subdrain pipes, subdrain pipe inlets and outlets, etc. when they are directly related to the repair, prevention, or control of landslides. Maintenance, as described herein, may also include removal of sediment from ditches and at the base of slopes and hydro-cleaning of horizontal drains and subdrains.

### **D. Activities Related to Creeks and Detention Basins**

As part of its duties to mitigate against actual or threatened landslides, the GHAD may perform the following GHAD projects in creek channels and detention basins:

1. Clearing and removal of debris and/or impediments in creek channels under emergency conditions to maintain open stream flow in order to mitigate a threatening landslide.
2. Removal of significant quantities of sediment deposits in creek channels and detention basins to maintain functionality and open stream flow in order to mitigate a threatening landslide.

### **E. Activities Related to Prevention and Mitigation Research**

The GHAD has directly benefitted from supporting, performing, and implementing the results of research on the behavior of slopes, landslides, and engineering mitigation methods. To prepare for and reduce the risk of future landslides causing property damage, the GHAD may conduct ongoing research into the behavior of slopes, slope failure prevention, and slope failure mitigation. These efforts include maintaining and analyzing a record of all incident responses and monitoring events for the purposes of evaluating and mitigating future risk.

## **VII. LIMITATIONS TO GHAD INVOLVEMENT**

The GHAD is authorized to prevent, mitigate, abate, or control geologic hazards and taking into consideration the following limitations and exclusions listed below in Sections VII(A) through VII(H):

### **A. Funding and Risk Limitations**

The GHAD General Manager is required to approve or not approve the prevention, mitigation, abatement, or control of geologic hazards based on funding limitations, project priorities based on risk evaluation, weather-related risk, the limitations specified in this POC, or other funding or risk-related issues not specified herein. Funding from CSA M-23 surplus revenue (see Section I) is the sole source of revenue for the GHAD, including all operations. If the CSA M-23 revenue allocated for the GHAD is not available, the GHAD would be required to reduce and/or eliminate some or all GHAD services unless an alternative funding source (or sources) can be identified.

### **B. GHAD Services Only Areas within the GHAD Boundaries**

The GHAD only has authority to provide its services to those properties located within the GHAD boundaries. Properties that are within the CSA M-23 boundaries that have not been annexed into the GHAD do not receive GHAD services.

The GHAD can only prevent, mitigate, abate, or control a geologic hazard on property outside the GHAD boundaries when the hazard has damaged or poses an imminent threat of damage to structures or site improvements located on properties within the GHAD boundaries. The GHAD can only prevent, mitigate, abate, or control the geologic hazard outside the GHAD boundaries provided said work is limited to that which is necessary to address the damage or imminent threat of damage to the structures or site improvements within the GHAD boundaries. Any work outside the GHAD boundary must be performed in coordination with the outside landowner under specific agreement.

### **C. Geologic Hazard Limited to a Single Property**

The GHAD can only prevent, mitigate, abate, or control landslides that are contained within the limits of a single parcel of property if the single parcel is greater than one acre

in size. Services may not be provided for geologic hazards within a single parcel that is less than one acre in size. This exclusion does not apply to geologic hazards existing on open-space areas owned by any homeowners association or golf course property.

**D. Geologic Hazard Resulting from Negligence of Property Owner**

The GHAD may decline to prevent, mitigate, abate, or control geologic hazards that occur due to, or resulting from, the negligence of the property owner and/or the property owner's contractors, agents or employees in developing, grading, constructing, maintaining, performing, or not performing, any work related to or that may have influenced the geologic hazard on the subject property including performing alterations to site drainage or to the overall existing stability of slopes.

**E. Geologic Hazard which Requires Expenditure Amount Exceeding the Value of the Threatened or Damaged Improvement**

The GHAD will not prevent, mitigate, abate, or control a geologic hazard where, as determined by the General Manager's sole discretion, the anticipated expenditure required to be funded by the GHAD to prevent, mitigate, abate, or control the geologic hazard will exceed the value of the structures and/or site improvements that are threatened with damage or loss.

**F. Erosion Within Creek Structure Setback Areas**

Creeks are dynamic landforms and are subject to natural changes from various forms of erosion. Erosion caused, for example, from water scouring of creek banks is a natural process and is to be expected within creek areas. The GHAD will not respond to or be responsible for these conditions even if they damage authorized structures or improvements (e.g., fencing, landscaping, or other non-permanent structures) within a creek or structure setback area. Note that permanent structures and improvements are not allowed within creeks or their structure setback area per Contra Costa County Code Section 914-14.014.

### **G. Damage Caused by Soil Creep**

The GHAD will not prevent or repair property damage due to soil creep. Soil creep is a common phenomenon on almost all slopes throughout Blackhawk and is not included in the definition of a geological hazard as described herein (see Section III, subsections A, B, and D). The adverse effects of soil creep can include damages to shallow-founded improvements such as separations in concrete walkway and pool deck construction joints, tilting fences, separation of wooden deck elements, and generally very slow downhill movement of any structures constructed on or near the edge of slopes. Site-specific design and construction techniques can typically be implemented by property owners to reduce the impact of creep on their properties.

### **H. Damage Covered by Responsibilities of Others**

The GHAD will not prevent, mitigate, abate, or control geologic hazards that are the responsibility of other districts, service areas, or entities operating within the GHAD boundaries. The GHAD will have the authority to monitor the specific district, service areas or entities to ascertain whether the work is being performed in a manner that does not interfere with nor impact the GHAD's responsibilities under the POC.

## **VIII. PRIORITY OF GHAD EXPENDITURES AND RESERVE FUND**

### **A. Priority of GHAD Expenditures**

The GHAD's sole source of funds is from a portion of an ad valorem property tax collected on properties within the GHAD boundaries. The amount of these funds varies annually. Actions by the GHAD, including but not limited to such items as emergency response and scheduled repair expenditures, will be prioritized by and at the sole discretion of the General Manager based on available funds and the approved operating budget. The GHAD Manager prepares, and the GHAD Board of Directors approves an operating budget each year. When available funds are not sufficient to undertake all of the remedial and preventative stabilization measures identified in the budget, the expenditures shall be prioritized by the General Manager as follows, in descending order of priority.

1. Prevention, mitigation, abatement, or control of geologic hazards that have either damaged or pose a significant threat of damage to residences, critical underground or overhead utilities, or roadways that provide emergency egress.
2. Prevention, mitigation, abatement, or control of geologic hazards which have either damaged or pose a significant threat of damage to commercial buildings, including but not limited to office buildings or clubhouses.
3. Prevention, mitigation, abatement, or control of geologic hazards which have either damaged or pose a significant threat of damage to ancillary structures, including but not limited to pool cabanas or restroom buildings.
4. Prevention, mitigation, abatement, or control of geologic hazards existing entirely on open-space or golf course property which have neither damaged nor pose a significant threat of damage to any structure or site improvements.
5. Prevention, mitigation, abatement, or control of geologic hazards that have either damaged or pose a significant threat of damage to landscaping or other similar non-essential amenities.

#### **B. Establishment and Operation of a GHAD Reserve Fund**

A reserve fund may be set up to allow funding projects whose cost exceeds the annual budget for major repair projects, and to provide for funds required periodically when major landslide events occur within the GHAD (e.g., winter periods with high precipitation and the potential for several major GHAD projects needing to occur simultaneously). The source of revenue for the reserve fund is the CSA M-23 revenue annually allocated to the GHAD (see Section I). The GHAD shall periodically conduct studies to determine the amount of funds that should be accumulated in reserve. These studies will be based on the most current experience with GHAD prevention and repair expenditures.



## **IX. REIMBURSEMENT POLICIES**

### **A. Reimbursement of Expenses Incurred by Property Owner**

#### **1. Reimbursement of Expenses During Emergencies**

At the General Manager's sole discretion and upon proof of payment through receipts, the GHAD may reimburse property owners for expenses incurred for materials used for temporary mitigation of geologic hazards during periods of emergency. Such materials are limited to sheet plastic placed over landslides, sandbags, silt fencing, and other typical temporary mitigation measures.

#### **2. Reimbursement by Agreement**

At the General Manager's sole discretion and upon proof of payment through receipts, the GHAD may reimburse a property owner for expenses incurred for the prevention, mitigation, abatement, or control of a geologic hazard based on a written agreement between the property owner and the GHAD to that effect. Such agreement must be executed prior to the property owner incurring said expenses, and following a geologic investigation conducted by the GHAD.

### **B. Reimbursement for Damaged or Destroyed Structures and Site Improvements**

#### **1. Privately Owned Structures and Site Improvements**

In the event a private residence, commercial office building, or any other structure, landscaping, or site improvement is damaged or destroyed due to, or as a result of, a geologic hazard, as defined herein, and pursuant to the other limitations and exclusions defined in this section, the General Manager has sole discretion, pursuant to Section VII, to fund or reimburse the property owner for the expenses necessary to repair or replace the damaged or destroyed structure, landscaping or site improvements. The dollar amount of the GHAD funding or reimbursement to the property owner may not exceed ten percent (10%) of the direct costs incurred by the GHAD in preventing, mitigating, abating, or controlling the geologic hazard responsible for the damage. In the event the geologic hazard damaged or destroyed

a structure, site improvement, or landscaping which violated any provisions of the County Building Code or County Ordinance Code at the time of its installation or improvement, the GHAD will not provide any funding or reimbursement to the property owner for repair or replacement of the damaged structure, landscaping, or site improvement.

## **2. HOA Owned Streets, Utilities, and Site Improvements**

In the event street pavement, underground utilities, landscaping, or site improvements owned by a homeowners association is damaged or destroyed due to, or as a result of, a geologic hazard, as defined herein, and pursuant to the other limitations and exclusions defined in this section, the General Manager has sole discretion, pursuant to Section VII, to include in the scope of the landslide repair, the repair or replacement of the damaged or destroyed street pavement, above ground or underground utility structure, landscaping, or site improvement owned by the homeowners association.

## **X. RECONSIDERATION AND APPEAL POLICY**

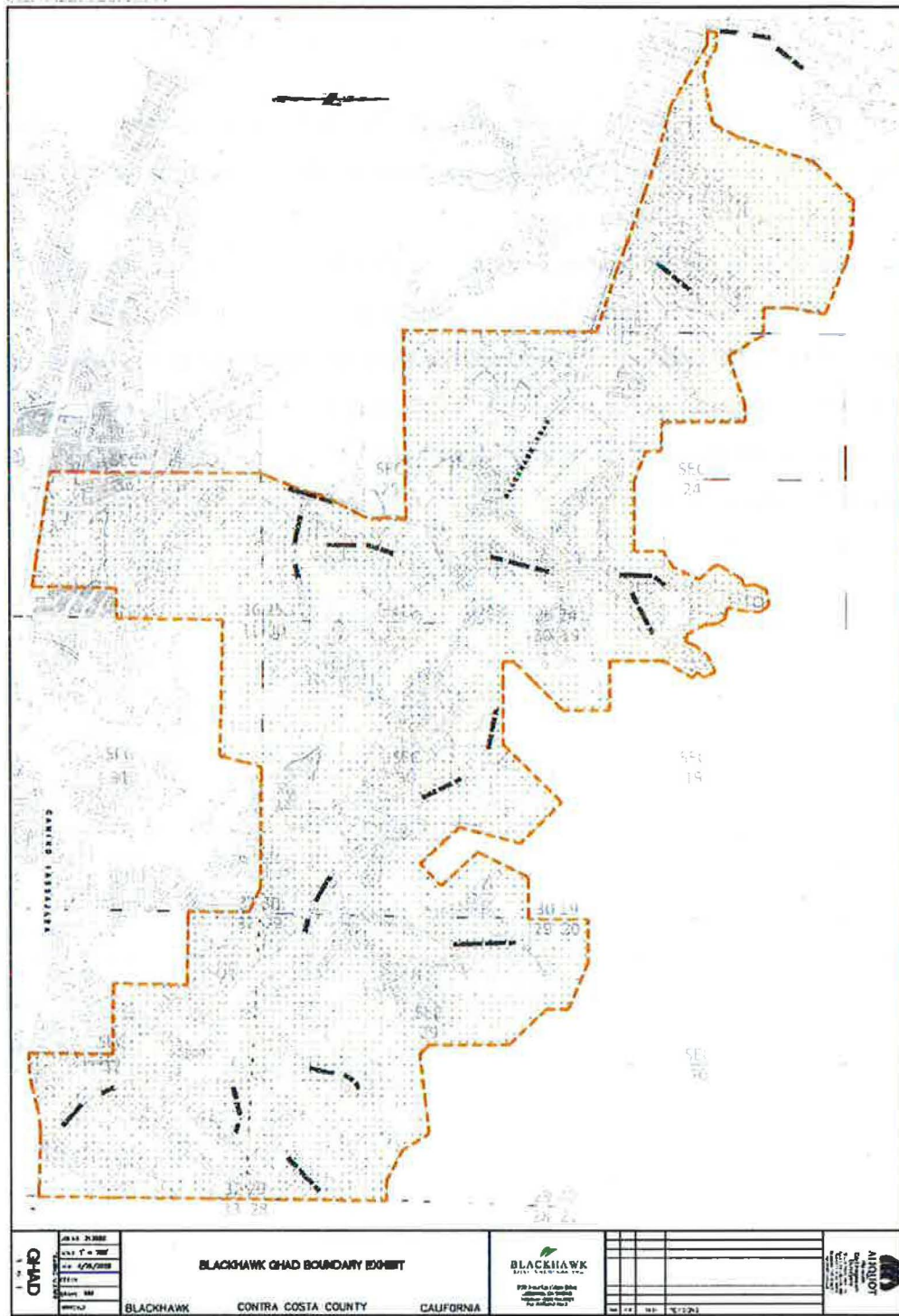
If a property owner directly affected by an operational action as set forth in this POC does not agree with the decision of the General Manager, the property owner may request the GHAD Manager to provide its decision in writing. If the property owner continues to disagree with the decision, that property owner may request the GHAD Manager to reconsider that decision ("General Manager Decision"). The property owner shall, within fifteen (15) days from the date of the written General Manager Decision, file with the General Manager the grounds for reconsideration, and the requested relief, including the owner's special interest and injury. Within fifteen (15) days of receipt of the property owner's written request for reconsideration, the General Manager shall issue a written decision on the request based on the evidence presented ("General Manager Reconsideration Decision"). The property owner may appeal the General Manager Reconsideration Decision to the GHAD Board of Directors. This appeal must be filed with the General Manager on a form provided by the General Manager within fifteen (15) days from the date of the General Manager Reconsideration Decision. The appeal must include the reasons for

the appeal and the property owner's requested relief. The Board will make the final decision on the appeal. The General Manager will proceed based on the decision of the Board of Directors.

#### **XI. REVISION POLICY**

This POC is meant to address the current needs of the GHAD and may be updated or revised should conditions or information change that result in new and/or different approaches related to addressing geologic hazards as defined herein (Section III-A and B). The POC will periodically be revisited by the General Manager. If the General Manager identifies the need to make minor updates or revisions, the General Manager can make those updates or revisions without seeking approval of the GHAD Board of Directors but shall thereafter inform the Board that the updates or revisions were made. If the updates or revisions are major, the General Manager shall submit the revisions to the Board of Directors for its approval. A minor update or revision is a change that clarifies a component of the POC and does not significantly change the purpose and character of the POC.

**FIGURE 1 – BLACKHAWK GHAD BOUNDARY SITE PLAN**



## APPENDIX A - GEOLOGIC CONDITIONS

### A. Topography and Geomorphology

The Blackhawk GHAD is located approximately five miles east of the town of Danville and four miles south of Mount Diablo in Contra Costa County, California. The area is situated on the slopes located between Sycamore Valley to the south and Fossil and Blackhawk Ridges to the north. Elevations within the GHAD boundaries range between approximately 600 ft in the south to 1400 ft in the north (USGS, 2018). The overall topography becomes steeper moving northward to the ridgelines. Drainage is to the south via several named creeks (East Branch of Green Valley Creek, Sycamore Creek, West Branch of Alamo Creek, Alamo Creek) and unnamed subsidiary drainages and creeks (USGS, 2018). The terrain consists of grass-covered ridges and hillslopes that drain to swales and small valleys that support modest tree and shrub growth. The overall geomorphology of the GHAD area is related to long-term fluvial and colluvial (landsliding) processes. The vast majority of development within the GHAD boundaries is located in the flatter valleys. However, some development has also occurred on hillslope benches or on excavated hilltops. Valleys grow narrower moving upslope and in many cases pinch out to more highly dissected terrain, in some areas consisting of a series of slope parallel ridges and hollows (narrow, steep sided valleys). Hillslopes can thus be convex, concave, or uniform depending on the position in relation to a ridge or hollow. Hollows form typical source areas for some types of landslides (debris flows).

### B. Geology

The bedrock geology underlying the area within the GHAD boundaries consists of Tertiary-age (Pliocene and late Miocene)<sup>1</sup> sedimentary deposits that have been folded and faulted due to the greater tectonics of the San Andreas fault system and associated uplift of Mount Diablo. The majority of the area is underlain by non-marine sandstones of the Orinda Formation (Dibblee and Minch, 2005) which is locally called the Green Valley Formation (Graymer et al., 1994). These rocks consist of gray to greenish gray, interbedded pebble conglomerates, sandstones and claystones (Dibblee and Minch, 2005). To the northeast and higher up the slopes leading to Fossil

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<sup>1</sup> Holocene refers to deposits that are less than 11,700 years old. Pleistocene refers to rocks that are 11,700 to 2.6 million years old. Pliocene refers to rocks that are 2.6 to 5.3 million years old. Miocene refers to rocks that are 5.3 to 23 million years old.

Ridge and Blackhawk Ridge, the slopes are underlain by the Neroly Sandstone unit of the marine Briones Formation (Graymer et al., 1994; Dibblee and Minch, 2005). This unit consists of a brown, massive sandstone (Graymer et al., 1994) with light gray, medium to fine-grained sandstone and shale interbeds that grade laterally west into finer siltstones and claystones (Dibblee and Minch, 2005). Flatter valley floors where much of the infrastructure in Blackhawk GHAD areas has been constructed consist of young (Holocene) alluvial fan and fluvial deposits (Helley and Graymer, 1997).

The bedrock structure consists of a series of nearly parallel, northwest-trending synclines and anticlines, some of which have been overturned by folding. Within most of the Blackhawk GHAD areas, structural mapping shows nearly ubiquitous steeply dipping (up to  $80^\circ$  to the southwest) and overturned (dipping to  $57^\circ$  to the northeast) sedimentary beds (Dibblee and Minch, 2005) with the exception of rocks associated with the northwest to east striking Tassajara Syncline (Dibblee, 1980). Southwest dipping sedimentary beds become shallower (to  $32^\circ$ ) approaching the syncline from the northeast and are still shallower ( $15^\circ$  to  $25^\circ$ ) and northeast dipping on the southwest side of the syncline (Dibblee, 1980; Dibblee and Minch, 2005).

### **C. Tectonics and Seismic Sources**

The location of the Blackhawk GHAD areas within the greater San Francisco Bay area of northern California places it in proximity to several potential sources of seismicity. Blackhawk is located within the eastern portion of the San Andreas Fault System, but is not located within a State of California designated Alquist-Priola Earthquake Fault Zone. The nearest State-zoned active faults are the Calaveras and Greenville faults located about five miles to the west and east, respectively. Both faults have expected earthquake moment magnitudes of  $M6.7+$  (Field et al., 2015). An earthquake of these expected magnitudes could produce a ground acceleration of approximately  $0.4g$  at Blackhawk according to attenuation relationships by Campbell and Bozorgnia (1994). Other sources for design-basis ground shaking near the Blackhawk area include smaller local faults that may produce lower magnitude earthquakes but potentially more intense ground shaking due to their closer proximity to the GHAD areas. These include the Mount Diablo blind thrust fault or potential subsidiary faults such as those mapped in the vicinity of the GHAD areas by Crane (1988) and Sawyer (2015). Various mapping efforts have placed the approximate location of the Mount Diablo thrust fault close to the southern boundary of the Blackhawk GHAD areas (Unruh and

Sundermann, 2006; Sawyer, 2015; Bryant, 2017) with some mapping indicating the presence of fault structures within the GHAD boundaries (Crane, 1988). Geomorphological studies indicate active deformation in the region as a result of late Holocene (modern) movement of the fault (Sawyer, 2015). The deformation is manifest as fault-propagation folds and include the nearby Tassajara and Doolan anticlines which, in turn, are related to splay faults from the Mount Diablo thrust (Sawyer, 2015).

The U.S. Geological Survey provides a plausible scenario for a M6.5 earthquake on the Mount Diablo thrust fault with estimated peak ground acceleration of 0.4 to 0.6g in the vicinity of Blackhawk (USGS, 2017). Earthquakes on blind thrust faults are not expected to cause surface ground rupture as might occur along a major strike slip fault such as the San Andreas, Hayward, or other nearby major faults; however, secondary seismic hazards such as landslides could be expected from such an event. More distant seismic ground shaking sources include the major known active faults of the San Francisco Bay Area; namely the San Andreas, Hayward, Rodgers Creek-Healdsburg, and the Concord-Green Valley faults. These sources are all at least five miles from Blackhawk but are known to be capable of producing moderate to large-scale (up to M7+) seismic events. Based on the current state of knowledge, it appears likely that secondary seismic hazards from an earthquake on any of the seismic sources discussed above would occur in regional areas of localized weak soils, such as on unstable slopes.

#### **D. Surficial Deposits**

The area within the GHAD boundaries is covered primarily by relatively shallow soils. The soil over the majority of the GHAD area is mapped as Diablo clay of Contra Costa County (NRCS, 2021). This soil typically forms on uplands, derived from sedimentary bedrock. Below the surficial dark gray clay, the soils generally become light gray or olive gray silty to sandy clay and extend to the undisturbed bedrock. Diablo clays generally have high expansion potential resulting in surficial cracking during the summer and swelling during the winter. Soils with high expansion potential are generally susceptible to downhill soil creep on hillslopes.

#### **E. Engineered Fill Deposits**

As part of the original development within the GHAD boundaries, significant excavations were made, followed by placement of engineered fill deposits. Fill deposits are typically compacted

during placement at controlled soil moisture levels to minimize overall settlement. Even still, fill deposits will in nearly all cases undergo some level of long-term settlement, and may undergo long-term movement depending on the overall level of soil moisture introduced. Because soil fills usually support infrastructure development, soil moisture levels may be increased (i.e., due to landscaping, etc.) compared to the background levels to which the soil fill material originated (i.e., as a hillslope subject only to infiltration during winter storms). As a result, areas of significant soil fill may be subject to potential long-term movement as the fill deposits adjust to their new configuration. Horizontal drains typically offer a means to control and limit the build-up of unfavorable soil moisture levels, and monitoring may provide a practical means of identifying potential instability issues.

#### **F. Groundwater and Streamflow**

Groundwater has been encountered at variable depths within the GHAD boundaries during drilling explorations by various geotechnical firms. Sandstone, siltstone, and gravelly bedrock units can be expected to contain variable amounts of groundwater depending on location and underlying geologic structure. Overall, groundwater can be expected to be 10 feet or more below the ground surface. However, areas of springs and seeps are common, and perched transient zones of groundwater may occur as a result of winter precipitation. When soils approach saturation, creeks and other drainages within the GHAD's boundaries that are normally dry during the majority of the year can discharge water as streamflow. In some cases, flooding is possible near creek crossings. Creekbank erosion may also be caused by these types of flows. Groundwater and streamflow regimes may be affected by development within or near the GHAD boundaries. Long-term changes to these conditions can result from landscape irrigation, the addition of impervious pavement or structures, surface runoff collection systems, and subsurface drainage facilities.

#### **G. Geologic Hazards**

The most common geologic hazard affecting the Blackhawk GHAD is landslides caused by a combination of high seasonal cumulative rainfall and intense storm precipitation acting to destabilize the weak soil and rocks encompassing the steep slopes of the region. Earthquakes are also a concern given the nearby proximity of the GHAD to several active faults, and landslides generated from seismic shaking are likely in the event of strong shaking. In particular, the number



and size of landslides may be greater if an earthquake occurs during the wettest months of the winter season when slopes are already weak due to rainfall infiltration.

Mapping in the region indicates that the Blackhawk GHAD areas (as well as many other areas in the Mount Diablo area and San Francisco Bay region in general) contain hundreds of existing landslides (Davenport, 1985) with slopes susceptible to movement and adjacent areas susceptible to inundation by landslide debris. Steep slopes may be subject to landsliding as a result of both natural (e.g., precipitation, earthquake) or human activities (e.g., lot grading, road construction, changes to site drainage, damage to water supply or waste water piping, etc.).

Landslides in the Mount Diablo region consist of both shallow and deeper movements. Shallow landslides generally occur as earth (fine-grained) or debris (coarse-grained) slides and flows (Varnes, 1978) within soil overlying bedrock. Deep-seated landslides can be translational or rotational and mobilize both soil and weathered bedrock. Most landslides in the Blackhawk GHAD consist of shallow debris flows and deep-seated rotational earth and debris slides. Debris flows (often called mudflows) tend to be less than 10 feet deep and can move rapidly (seconds to minutes) within a relatively linear, narrow path that follows the existing topography (i.e., along swales, drainage channels, or simply straight downhill). Debris flows may travel hundreds of feet before stopping. Deep-seated slides typically move relatively slowly taking hours to days to move en masse along a relatively deep (20 to 50 ft) curved slip plane with a defined headscarp(s) or crevasse at the top of the slide and defined lateral margins along the sides. Movement may not exceed the length of the landslide source area but may move much larger areas and volumes of terrain compared to debris flows. In both cases, the most common causes of landslides involve weak soil/rock materials, a change in slope configuration, or an increase in subsurface moisture content, with a subsequent loss of soil or rock strength.

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## APPENDIX B - METES AND BOUNDS DESCRIPTION

THIS DESCRIPTION IS A COMPILATION OF THE VARIOUS ANNEXATIONS TO, DETACHMENTS FROM, AND CONSOLIDATIONS WITH THE BLACKHAWK GEOLOGIC HAZARD ABATMENT DISTRICT SINCE ITS FORMATION IN 1986, AND REPRESENTS THE CURRENT EXTERIOR LIMITS AS OF 2006.

REAL PROPERTY IN AN UNINCORPORATED AREA OF THE COUNTY OF CONTRA COSTA, STATE OF CALIFORNIA; BEING A PORTION OF SECTIONS 14, 22, 23, 24, 25 AND 36, TOWNSHIP 1 SOUTH, RANGE 1 WEST, MOUNT DIABLO MERIDIAN AND A PORTION OF SECTIONS 19, 20, 29, 30, 31 AND 32 TOWNSHIP 1 SOUTH, RANGE 1 EAST, MOUNT DIABLO MERIDIAN, DESCRIBED AS FOLLOWS:

BEGINNING AT THE WESTERLY TERMINUS OF THE COURSE LABELED "NORTH 89°52'59" WEST 288.40 FEET" ON THE NORTHERLY BOUNDARY OF PARCEL 'A' (PUBLIC PARK) AS SHOWN ON THE MAP OF SUBDIVISION 4878 FILED MARCH 21, 1977, IN BOOK 194 OF MAPS AT PAGE 1 (194 M 1); THENCE FROM SAID POINT OF BEGINNING, ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 4878 (194 M 1) SOUTH 89°52'59" EAST 288.40 FEET; THENCE SOUTH 58°13'44" EAST 280.00 FEET; THENCE SOUTH 73°08'44" EAST 275.00 FEET; THENCE NORTH 79°11'40" EAST 885.99 FEET; THENCE NORTH 28°42'12" EAST 495.62 FEET; THENCE NORTH 18°28'18" EAST 1422.89 FEET; THENCE NORTH 45°05'49" EAST 1003.57 FEET; THENCE SOUTH 87°08'44" EAST 750.00 FEET; THENCE SOUTH 76°08'44" EAST 400.00 FEET; THENCE SOUTH 68°08'44" EAST 1000.00 FEET TO THE NORTHEAST CORNER OF PARCEL 'B' AS SHOWN ON SAID SUBDIVISION 4878 (194 M 1), SAID POINT ALSO BEING THE MOST NORTHERLY CORNER OF PARCEL 'H' AS SHOWN ON THE MAP OF SUBDIVISION 4962 FILED MARCH 21, 1977, IN BOOK 194 OF MAPS AT PAGE 20; THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 4962 (194 M 20), SOUTH 10°51'16" WEST 600.00 FEET; THENCE SOUTH 0°51'16" WEST 500.00 FEET THENCE SOUTH 89°08'44" EAST 500.00 FEET; THENCE SOUTH 31°08'44" EAST 730.00 FEET TO THE MOST EASTERLY CORNER OF SAID PARCEL 'H' (194 M 20), SAID POINT ALSO BEING AN ANGLE POINT ON THE NORTHERLY BOUNDARY OF PARCEL 'O' AS SHOWN ON THE MAP OF SUBDIVISION 4963 FILED MARCH 21, 1977, IN BOOK 194 OF MAPS AT PAGE 30; THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 4963 (194 M 30), NORTH 71°51'16" EAST 950.00 FEET; THENCE SOUTH 89°08'44" EAST 300.00 FEET TO THE NORTHEAST CORNER OF SAID PARCEL 'O' (194 M 30), SAID POINT ALSO BEING THE MOST NORTHERLY CORNER OF PARCEL 'B' AS SHOWN ON THE MAP OF SUBDIVISION 5023 FILED JULY 12, 1978, IN BOOK 214 OF MAPS AT PAGE 1; THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 5023 (214 M 1) SOUTH 1,503.48 FEET; THENCE SOUTH 88°00'00" EAST 531.02 FEET; THENCE SOUTH 1°00'00" WEST 294.36 FEET TO THE MOST NORTHERLY CORNER OF PARCEL 'C' AS SHOWN ON THE MAP OF SUBDIVISION 5438 FILED AUGUST 14, 1979, IN BOOK 228 OF MAPS AT PAGE 11; THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 5438 (228 M 11), SOUTH 68°00'00" EAST 581.79 FEET; THENCE EAST 1277.80 FEET TO THE NORTHEAST CORNER OF SAID PARCEL 'C' (228 M 11), SAID POINT ALSO BEING AN ANGLE POINT ON THE WESTERLY BOUNDARY OF PARCEL 'A' AS SHOWN ON THE MAP OF SUBDIVISION 5439 FILED AUGUST 29, 1979, IN BOOK 229 OF MAPS AT PAGE 1; THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 5439 (229 M 1), NORTH 550.00 FEET TO THE NORTHWEST CORNER OF SAID PARCEL 'A' (229 M 1), SAID POINT ALSO BEING THE SOUTHWEST CORNER OF PARCEL "D" AS SHOWN ON THE MAP OF SUBDIVISION 7115 FILED AUGUST 11, 1992, IN BOOK 363 OF MAPS AT PAGE 15 (363 M 15); THENCE ALONG THE NORTHERLY BOUNDARY OF SAID PARCEL "D" (363 M 15) THE FOLLOWING THIRTEEN (13) COURSES:

1) NORTH 58°53'28" EAST 336.68 FEET,      2) NORTH 25°35'28" EAST 538.50 FEET,

3) NORTH 42°01'45" WEST 385.66 FEET, 4) NORTH 07°44'25" EAST 103.95 FEET,  
 5) NORTH 32°31'53" EAST 438.86 FEET, 6) NORTH 71°50'03" EAST 134.71 FEET,  
 7) NORTH 08°15'17" WEST 195.02 FEET, 8) NORTH 23°35'47" EAST 219.39 FEET,  
 9) NORTH 79°12'12" EAST 293.37 FEET, 10) SOUTH 36°52'12" EAST 205.00 FEET,  
 11) SOUTH 04°16'05" WEST 319.80 FEET, 12) SOUTH 12°50'10" WEST 264.22 FEET AND  
 13) SOUTH 76°21'11" EAST 222.31 FEET TO THE MOST EASTERLY CORNER OF PARCEL 'D'  
 (363 M 15), SAID POINT ALSO BEING THE MOST NORTHERLY CORNER OF PARCEL 'C' AS  
 SHOWN ON THE MAP OF SUBDIVISION 7115 FILED AUGUST 11, 1992, IN BOOK 363 OF MAPS  
 AT PAGE 15, (363 M 15); THENCE CONTINUING ALONG THE NORTHERLY LINES OF SAID  
 PARCEL 'C' AND OF PARCELS 'M', 'K' AND 'L' OF SAID SUBDIVISION 7115 (363 M 15) THE  
 FOLLOWING ELEVEN (11) COURSES:

1) SOUTH 28°46'58" EAST 154.35 FEET, 2) SOUTH 06°34'36" EAST 234.39 FEET,  
 3) SOUTH 29°32'18" EAST 357.81 FEET, 4) SOUTH 75°13'49" EAST 125.85 FEET;  
 5) NORTH 25°17'09" EAST 215.57 FEET, 6) NORTH 37°40'36" EAST 273.06 FEET  
 7) NORTH 66°04'38" EAST 329.55 FEET, 8) SOUTH 24°39'07" EAST 230.16 FEET;  
 9) SOUTH 38°08'11" WEST 153.84 FEET, 10) SOUTH 49°10'14" EAST 136.12 FEET AND  
 11) SOUTH 30°20'14" WEST 611.11 FEET TO THE SOUTHEAST CORNER OF PARCEL 'L' (363 M  
 15) SAME POINT ALSO BEING THE NORTHEAST CORNER OF PARCEL "G" AS SHOWN ON THE  
 MAP OF SUBDIVISION 5439 FILED AUGUST 29, 1979, IN BOOK 229 OF MAPS AT PAGE 1, (229  
 M 1); THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 5439 (229 M 1),  
 SOUTH 1000.00 FEET; THENCE EAST 900.00 FEET; THENCE SOUTH 850.00 FEET; THENCE  
 SOUTH 45°00'00" WEST 777.91 FEET TO AN ANGLE POINT IN PARCEL 'G' AS SHOWN ON SAID  
 MAP OF SUBDIVISION 5439 (229 M 1), SAID POINT ALSO BEING THE MOST EASTERLY  
 CORNER OF PARCEL 'A' AS SHOWN ON THE MAP OF SUBDIVISION 5441 FILED JUNE 10, 1980,  
 IN BOOK 240 OF MAPS AT PAGE 7; THENCE ALONG THE EXTERIOR BOUNDARY OF SAID  
 SUBDIVISION 5441, SOUTH 45°00'11" WEST 472.08 FEET; THENCE SOUTH 200.00 FEET;  
 THENCE EAST 375.00 FEET TO THE MOST WESTERLY CORNER OF LOT 12 AS SHOWN ON  
 THE MAP OF SUBDIVISION 6432 FILED DECEMBER 19, 1984, IN BOOK 288 OF MAPS AT PAGE  
 7; THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 6432 (286 M 7) EAST  
 1125.00 FEET; THENCE NORTH 45°00'00" EAST 1500.00 FEET; THENCE SOUTH 45° 00'00" EAST  
 1051.08 FEET; THENCE SOUTH 14°39'08" WEST 1143.43 FEET THENCE SOUTH 42°47'57" EAST  
 350.00 FEET TO THE NORTHEAST CORNER OF PARCEL 'D' AS SHOWN ON SAID SUBDIVISION  
 6432 (286 M 7), SAID POINT LYING ON THE NORTHERLY LINE OF PARCEL 'L' AS SHOWN ON  
 THE MAP OF SUBDIVISION 5645 FILED AUGUST 14, 1981, IN BOOK 255 OF MAPS AT PAGE 27;  
 THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 5645 (255 M 27), SOUTH  
 42°47'57" EAST 611.60 FEET TO THE NORTHEAST CORNER OF SAID PARCEL 'L' (255 M 27),  
 SAID POINT BEING AN ANGLE POINT ON THE WESTERLY BOUNDARY OF PARCEL 'B' AS  
 SHOWN ON THE MAP OF SUBDIVISION 6683 FILED APRIL 23, 1986, IN BOOK 300 OF MAPS AT  
 PAGE 49 (300 M 49); THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 6883  
 (300 M 49), NORTH 47°12'03" EAST 550.00 FEET; THENCE NORTH 42°47'57", WEST 902.23 FEET  
 THENCE NORTH 26°50'28" EAST 1021.00 FEET; THENCE EAST 760.00 FEET TO THE  
 NORTHEAST CORNER OF SAID PARCEL 'B' (300 M 49), SAID POINT ALSO BEING AN ANGLE  
 POINT ON THE WESTERLY BOUNDARY OF LOT 86 AS SHOWN ON THE MAP OF SUBDIVISION  
 5743 FILED AUGUST 19, 1981 IN BOOK 256 OF MAPS AT PAGE 1 (256 M 1); THENCE ALONG  
 THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 5743 (256 M 1) NORTH 1070.00 FEET;  
 THENCE EAST 800.00 FEET; THENCE SOUTH 67°40'17" EAST 908.09 FEET; THENCE SOUTH  
 400.00 FEET; THENCE SOUTH 43°47'32" EAST 939.25 FEET TO THE MOST EASTERLY CORNER  
 OF PARCEL 'D' AS SHOWN ON SAID SUBDIVISION 5743 (256 M 1), SAID POINT ALSO BEING  
 THE MOST NORTHERLY CORNER OF PARCEL 'A' AS SHOWN ON THE MAP OF SUBDIVISION  
 6705 FILED APRIL 23, 1986 IN BOOK 301 OF MAPS AT PAGE 1; THENCE ALONG THE  
 EASTERLY BOUNDARY OF SAID PARCEL 'A' (301 M 1), SOUTH 1426.14 FEET; THENCE

LEAVING SAID EASTERLY BOUNDARY OF PARCEL 'A' (301 M 1). SOUTH 41°10'29" EAST 242.19 FEET; THENCE NORTH 83°27'44" EAST 845.80 FEET; THENCE NORTH 83°19'51" EAST 617.38 FEET; THENCE SOUTH 32°01'19" EAST 568.82 FEET TO AN ANGLE POINT ON THE NORTHERLY LINE OF PARCEL 'K' AS SHOWN ON THE MAP OF SUBDIVISION 6618 FILED APRIL 22, 1986, IN BOOK 300 OF MAPS AT PAGE 14; THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 6618 (300 M 14), SOUTH 62°30'28" EAST 622.20 FEET; THENCE SOUTH 89°17'30" EAST 364.88 FEET; THENCE SOUTH 00° 42'30" WEST 3193.02 FEET TO THE SOUTHEAST CORNER OF LOT 96 AS SHOWN ON SAID SUBDIVISION 6618 (300 M 14), SAID POINT ALSO BEING THE NORTHEAST CORNER OF LOT 148 AS SHOWN ON THE MAP OF SUBDIVISION 6585 FILED DECEMBER 23, 1985, IN BOOK 297 OF MAPS AT PAGE 16 (297 M 16); THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 6585 (297 M 16), SOUTH 0°42'30" WEST 1834.22 FEET; THENCE SOUTH 0°36'17" WEST 1282.22 FEET TO A POINT ON THE NORTHERLY RIGHT OF WAY LINE OF CAMINO TASSAJARA; THENCE CONTINUING ALONG SAID EXTERIOR BOUNDARY OF SUBDIVISION 6585 (297 M 16) AND ALONG SAID NORTHERLY RIGHT OF WAY LINE OF CAMINO TASSAJARA WESTERLY ALONG THE ARC OF A NON-TANGENT CURVE, CONCAVE TO THE SOUTH, HAVING A RADIUS OF 2050.21 FEET THE CENTER OF WHICH BEARS SOUTH 6°32'16" WEST, THROUGH A CENTRAL ANGLE OF 5°13'17", A DISTANCE OF 186.84 FEET; THENCE TANGENT TO SAID CURVE, NORTH 88°41'01" WEST 920.24 FEET; THENCE SOUTH 89°22'23" WEST 149.71 FEET TO A POINT FROM WHICH A RADIAL LINE OF A NON-TANGENT CURVE, CONCAVE TO THE SOUTH, HAVING A RADIUS OF 2050.21 FEET BEARS SOUTH 02°43'00" EAST; THENCE WESTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 10°50'31" A DISTANCE OF 387.96 FEET; THENCE TANGENT TO SAID CURVE, SOUTH 76°26'29" WEST 393.40 FEET; THENCE WESTERLY ALONG THE ARC OF A TANGENT CURVE, CONCAVE TO THE NORTH, HAVING A RADIUS OF 1950.21 FEET, THROUGH A CENTRAL ANGLE OF 17°29'33" A DISTANCE OF 595.40 FEET TO THE SOUTHWEST CORNER OF PARCEL 'A' AS SHOWN ON SAID SUBDIVISION 6585 (297 M 16); THENCE NON-TANGENT TO SAID CURVE, LEAVING SAID NORTHERLY RIGHT OF WAY LINE OF CAMINO TASSAJARA, AND CONTINUING ALONG SAID EXTERIOR BOUNDARY OF SUBDIVISION 6585 (297 M 16), NORTH 0°48'15" EAST 1508.59 FEET TO THE SOUTHEAST CORNER OF PARCEL 'H' AS SHOWN ON THE MAP OF SUBDIVISION 6617 FILED FEBRUARY 27, 1986, IN BOOK 299 OF MAPS AT PAGE 8 (299 M 8); THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 6617 (299 M 8), NORTH 89°28'18" WEST 1285.61 FEET; THENCE NORTH 01° 05'38" EAST 1325.98 FEET TO AN ANGLE POINT IN SAID EXTERIOR BOUNDARY, SAID POINT ALSO BEING THE MOST EASTERLY CORNER OF LOT 102 AS SHOWN ON THE MAP OF SUBDIVISION 5645 FILED AUGUST 19, 1981 IN BOOK 265 OF MAPS AT PAGE 27; THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 5645 (255 M 27), NORTH 88°53'38" WEST 1286.61 FEET TO AN ANGLE POINT IN PARCEL 'F' OF SAID SUBDIVISION 5645 (255 M 27); THENCE LEAVING THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 5645 NORTH 87°17'11" WEST 48.47 FEET TO AN ANGLE POINT IN PARCEL 'F' OF SAID SUBDIVISION 5645 (255 M 27); THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 5645 (255 M 27), NORTH 0°35'02" EAST 1111.07 FEET; THENCE NORTH 64°03'36" WEST 488.05 FEET; THENCE NORTH 89°33'44" WEST 1973.65 FEET TO THE SOUTHWEST CORNER OF LOT 140 OF SAID SUBDIVISION 5645 (255 M 27), SAID POINT ALSO BEING AN ANGLE POINT IN PARCEL 'A' AS SHOWN ON THE MAP OF SUBDIVISION 7086 FILED JULY 18, 1988, IN BOOK 323 OF MAPS AT PAGE 28 (323 M 28); THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 7086 (323 M 28) NORTH 89°33'44" WEST 232.11 FEET; THENCE SOUTH 14°39'10" WEST 264.22 FEET TO THE MOST SOUTHERLY CORNER OF SAID SUBDIVISION 7086, SAID POINT ALSO BEING A POINT ON THE EASTERLY LINE OF PARCEL 'D' AS SHOWN ON THE MAP OF SUBDIVISION 5352 FILED FEBRUARY 14, 1979, IN BOOK 221 OF MAPS AT PAGE 25; THENCE ALONG THE EXTERIOR BOUNDARY OF SAID PARCEL 'D' (221 M 25) SOUTH 14°39'09" WEST 522.37 FEET TO THE SOUTHEAST CORNER OF SAID PARCEL 'D';

THENCE ALONG THE SOUTHERLY BOUNDARY OF SAID PARCEL 'D', NORTH 88°31'30" WEST 2475.19 FEET TO AN ANGLE POINT IN SAID SOUTHERLY BOUNDARY OF PARCEL 'D', SAID POINT ALSO BEING THE NORTHEAST CORNER OF PARCEL 'B' AS SHOWN ON THE MAP OF SUBDIVISION 5435 FILED MARCH 7, 1979, IN BOOK 222 OF MAPS AT PAGE 37; THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 5435 (222 M 37), SOUTH 00°53'31" WEST 1916.06 FEET; THENCE SOUTH 88°42'23" WEST 549.81 FEET TO THE NORTHEAST CORNER OF SUBDIVISION 6586 FILED JULY 14, 1986, IN BOOK 304 OF MAPS AT PAGE 18 (304 M 18); THENCE ALONG THE EAST LINE OF SAID SUBDIVISION 6586 (304 M 18) SOUTH 00°53'03" WEST 1514.75 FEET TO THE SOUTHEAST CORNER OF PARCEL 'D' OF SAID SUBDIVISION 6586 (304 M 18), SAID POINT LYING ON THE NORTHERLY RIGHT OF WAY LINE OF CAMINO TASSAJARA; THENCE ALONG SAID NORTHERLY RIGHT OF WAY LINE, NORTH 81°12'00" WEST 506.45 FEET; THENCE WESTERLY ALONG THE ARC OF A TANGENT CURVE CONCAVE TO THE SOUTH, HAVING A RADIUS OF 2058.00 FEET, THROUGH A CENTRAL ANGLE OF 01°44'17", A DISTANCE OF 62.43 FEET; THENCE TANGENT TO SAID CURVE, NORTH 82°56'17" WEST 15.04 FEET; THENCE NORTH 81°14'16" WEST 818.50 FEET; THENCE LEAVING THE SAID NORTHERLY RIGHT OF WAY LINE OF CAMINO TASSAJARA AND ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 6586 (304 M 18) NORTH 81°14'16" WEST 179.99 FEET TO A POINT ON THE SOUTHERLY LINE OF PARCEL 'B' AS SHOWN ON THE MAP OF SUBDIVISION 6596 FILED AUGUST 22, 1985, IN BOOK 292 OF MAPS AT PAGE 32; THENCE ALONG THE SOUTHERLY LINE OF SAID PARCEL 'B', SAID LINE BEING ALSO THE NORTHERLY RIGHT OF WAY LINE OF CAMINO TASSAJARA, NORTH 81°14'16" WEST 532.79 FEET TO THE SOUTHWEST CORNER OF SAID PARCEL 'B'; THENCE LEAVING SAID NORTHERLY RIGHT OF WAY LINE OF CAMINO TASSAJARA, NORTH 00°36'48" EAST 490.00 FEET TO THE NORTHWEST CORNER OF SAID PARCEL 'B' (292 M 32), SAID POINT ALSO BEING THE SOUTHWEST CORNER OF PARCEL 'A' AS SHOWN ON THE MAP OF SUBDIVISION 6199 FILED OCTOBER 10, 1983, IN BOOK 273 OF MAPS AT PAGE 19 (273 M 19); THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 6199 (273 M 19), NORTH 00°36'48" EAST 655.96 FEET; THENCE NORTH 00°20'30" EAST 1172.01 FEET TO THE NORTHWEST CORNER OF PARCEL 'G' OF SAID SUBDIVISION 6199 (273 M 19), SAID POINT ALSO BEING THE NORTHWEST CORNER OF PARCEL 'H' AS SHOWN ON THE MAP OF SAID SUBDIVISION 5352 (221 M 25); THENCE ALONG THE WESTERLY RIGHT OF WAY LINE OF BLACKHAWK ROAD AS SHOWN ON SAID SUBDIVISION 5352 (221 M 25), NORTH 0°20'30" EAST 1509.94 FEET; THENCE NORTH 22°25'27" EAST 145.53 FEET; THENCE LEAVING SAID WESTERLY LINE OF BLACKHAWK ROAD, NORTH 22°25'27" EAST 491.68 FEET; THENCE NORTHEASTERLY ALONG THE ARC OF A TANGENT CURVE, CONCAVE TO THE WEST, HAVING A RADIUS OF 3000.00 FEET, THROUGH A CENTRAL ANGLE OF 06°16'00" A DISTANCE OF 328.12 FEET; THENCE TANGENT TO SAID CURVE NORTH 16°09'27" EAST 126.88 FEET; THENCE NORTHEASTERLY ALONG THE ARC OF A TANGENT CURVE, CONCAVE TO THE EAST, HAVING A RADIUS OF 2000.00 FEET, THROUGH A CENTRAL ANGLE OF 11°45'00", A DISTANCE OF 410.15 FEET; THENCE TANGENT TO SAID CURVE, NORTH 27°54'27" EAST 485.72 FEET; THENCE NORTHERLY ALONG THE ARC OF A TANGENT CURVE, CONCAVE TO THE WEST, HAVING A RADIUS OF 500.00 FEET, THROUGH A CENTRAL ANGLE OF 34°31'15", A DISTANCE OF 301.25 FEET; THENCE TANGENT TO SAID CURVE NORTH 06°36'48" WEST 104.22 FEET; THENCE NORTHERLY ALONG THE ARC OF A TANGENT CURVE, CONCAVE TO THE EAST, HAVING A RADIUS OF 1000.00 FEET, THROUGH A CENTRAL ANGLE OF 21°25'00" A DISTANCE OF 373.79 FEET; THENCE TANGENT TO SAID CURVE, NORTH 14°48'12" EAST 34.95 FEET; THENCE SOUTH 89°24'52" WEST 41.93 FEET TO THE SOUTHEAST CORNER OF PARCEL 'A' AS SHOWN ON THE MAP OF SUBDIVISION 5437 FILED JULY 26, 1979 IN BOOK 227 OF MAPS AT PAGE 1 (227 M 1); THENCE ALONG THE SOUTHERLY LINE OF SAID PARCEL 'A' (227 M 1), SOUTH 89°24'52" WEST 757.48 FEET; THENCE SOUTH 89°24'19" WEST 1353.01 FEET TO THE SOUTHWEST CORNER OF SAID PARCEL 'A' SAID POINT ALSO BEING THE SOUTHEAST

CORNER OF LOT 45 AS SHOWN ON THE MAP OF SUBDIVISION 5024 FILED JULY 12, 1978, IN BOOK 214 OF MAPS AT PAGE 8; THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 5024 (214 M 8) SOUTH 89°24'19" WEST 1290.35 FEET; THENCE NORTH 00°26'21" EAST 2637.94 FEET; THENCE NORTH 00°15'58" EAST 763.58 FEET TO THE NORTHWESTERLY CORNER OF LOT 1 OF SAID SUBDIVISION 5024 (214 M 8); THENCE LEAVING SAID EXTERIOR BOUNDARY OF SUBDIVISION 5024, NORTH 09°43'58" EAST 60.74 FEET TO AN ANGLE POINT ON THE SOUTHERLY LINE OF THE AREA SHOWN AS "BLACKHAWK ROAD WIDENING" ON THE MAP OF SUBDIVISION 4963 FILED MARCH 21, 1977, IN BOOK 194 OF MAPS AT PAGE 30; THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 4963 (194 M 30). NORTH 71°21'16" WEST 1153.00 FEET TO THE SOUTHWEST CORNER OF SAID SUBDIVISION 4963 (194 M 30), SAID POINT ALSO BEING THE SOUTHEAST CORNER OF THE AREA SHOWN AS "BLACKHAWK ROAD WIDENING" ON THE MAP OF SUBDIVISION 4878 FILED MARCH 21, 1977, IN BOOK 194 OF MAPS AT PAGE 1; THENCE ALONG THE EXTERIOR BOUNDARY OF SAID SUBDIVISION 4878 (194 M 1); NORTH 71°21'16" WEST 60.34 FEET; THENCE NORTH 69°14'36" WEST 400.45 FEET; THENCE NORTH 70°11'28" WEST 69.53 FEET; THENCE NORTH 70°11'57" WEST 988.66 FEET; THENCE NORTH 70°11'47" WEST 726.85 FEET; THENCE NORTH 73°58'43" WEST 958.37 FEET; THENCE NORTH 59°08'27" WEST 595.70 FEET; THENCE NORTH 58°14'10" WEST 682.10 FEET; THENCE NORTH 89°54'59" WEST 252.70 FEET; THENCE NORTH 07°12'53" EAST 166.82 FEET TO THE **POINT OF BEGINNING**.

THIS DESCRIPTION IS A COMPILATION OF THE VARIOUS ANNEXATIONS TO, DETACHMENTS FROM, AND CONSOLIDATIONS WITH THE BLACKHAWK GEOLOGIC HAZARD ABATMENT DISTRICT SINCE ITS FORMATION IN 1986, AND REPRESENTS THE CURRENT EXTERIOR LIMITS AS OF 2006.

FOR ASSESSMENT PURPOSES ONLY. THIS DESCRIPTION OF LAND IS NOT A LEGAL PROPERTY DESCRIPTION AS DEFINED IN THE SUBDIVISION MAP ACT AND MAY NOT BE USED AS THE BASIS FOR AN OFFER FOR SALE OF THE LAND DESCRIBED.

**END OF DESCRIPTION**

PREPARED BY:



VINCENT J. D'ALO  
LS 4210



MAY 2, 2022  
DATE