

Project No.
4663.002.023

February 26, 2024

Fallon Village Geologic Hazard Abatement District Board of Directors
Chair Melissa Hernandez
Vice Chair Sherry Hu
Boardmember Jean Josey
Boardmember Michael McCorriston
Boardmember Kashef Qaadri

Subject: Fallon Village Geologic Hazard Abatement District
Dublin, California

RESERVE FUND STUDY

Dear Chair Hernandez and Boardmembers:

ENGEO, the Fallon Village Geologic Hazard Abatement District (GHAD) Services Consultant, is pleased to provide this Reserve Fund Study for the Fallon Village GHAD in Dublin, California.

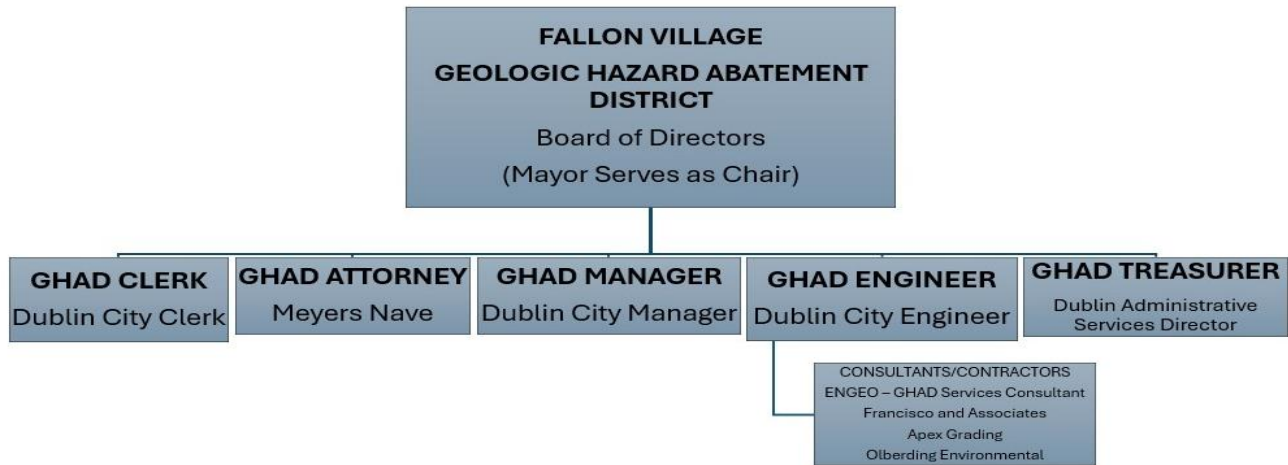
The Fallon Village GHAD was formed in 2007 and included the Positano development. In 2011 the Jordan Ranch development was annexed into the Fallon Village GHAD and in 2023 the Francis Ranch development. The boundary of the GHAD encompasses a total of approximately 840 acres with current GHAD ownership of approximately 223 acres. The GHAD is currently providing services within the Positano and Jordan Ranch developments totaling 1,951 residences of various product types. The GHAD accepted monitoring, maintenance, and ownership responsibilities for the Positano development in 2015 and for the Jordan Ranch development in 2016 and has been providing services to the accepted parcels since that time as anticipated in the adopted Plan of Control for each development (References 1 and 2). The Francis Ranch portion of the Fallon Village GHAD is not included in the financial analysis portion of this reserve fund study as the GHAD does not yet provide services to this development and will not until at least 2026. After the completion of buildout for the Francis Ranch development and GHAD acceptance monitoring, maintenance, and ownership responsibilities, the GHAD may consider an update to this reserve fund study.

This reserve fund study was undertaken to forecast expenses that can reasonably be expected in the decades ahead, and to confirm that sufficient funds are being set aside in the GHAD's reserve to pay for these expenses.

The reserve fund study is based on:

- Expenditures expected to address future monitoring, maintenance, and repair responsibilities as outlined in the Plans of Control (References 1 and 2).
- Long-term reserves to address larger geologic events. The projected long-term reserve requirement is based on the published work, "Estimating an Appropriate Geologic Hazard Abatement District (GHAD) Reserve" and is provided in Exhibit E to this study.

The structure of the Fallon Village GHAD is shown below.



REVENUE

GHAD Assessments

The initial Engineer's Reports for the Positano and Jordan Ranch developments were approved in 2007 and 2011, respectively (References 3 and 4). In 2013, the Plan of Control and Engineer's Report for the Positano development was updated to include additional services not outlined in the 2007 Engineer's Report (Reference 5). The assessment limits for residential units are adjusted annually on June 30 for the Positano development and on December 30 for the Jordan Ranch development to reflect the percentage change in the San Francisco-Oakland-Hayward Consumers Price Index (CPI) for All Urban Consumers. The inflation adjustments to the assessment limits are shown in Exhibit A. The average annual inflation rate since approval of the assessment limits since 2007 and 2011 for both developments has been 2.88 percent.

The FY 2023/24 assessment roll identifies 1,951 residences and one habitable non-residential structure subject to a levy. The total levy for the 2023/24 FY is \$1,256,926.70. Assessments are levied on the first fiscal year after issuance of a building permit for a residential parcel.

Inflation and Investment Estimates

Table 1 provides the projected investment returns, inflation, and real rate of return used to prepare the pro-forma budgets for the 2007 and 2011 Engineer's Reports and this Reserve Fund Study.

TABLE 1: Inflation and Investment Estimates

ENGINEER'S REPORT (2007 AND 2011) RESERVE FUND STUDY (2024)	2007	2011	2024
Investment Return	6.0%	3.0%	3.5%
Inflation	3.0%	3.0%	3.0%
Real Rate of Return	3.0%	0%	0.5%

For this Reserve Fund Study, we are estimating an annual investment return of 3.5% for the 40-year pro forma budget. For inflation, we are estimating an annual inflation rate of 3.0%. This is above the current inflation target of 2% adopted by the Federal Open Market Committee in January 2012 (Reference 9). In their recent economic projections, Federal Reserve Bank policymakers forecast that inflation for the next 3 years would be at 2.4% in 2024, 2.1% in 2025, and 2.0% in 2026, which is in line with the estimates used in this Reserve Fund Study, although the Reserve Fund Study pro forma budget analyzes a period of 40 years.

GHAD RESPONSIBILITIES

Based on the District's Plans of Control (References 1 and 2), GHAD responsibilities include:

- Open space slopes including landslides and erosion control
- Concrete-lined drainage ditches including maintenance and replacement
- Detention and water quality basins
- Storm drain inlets and outlets within the open space including maintenance and replacement
- Subdrains and subdrain outlets
- Emergency vehicle access and maintenance roads
- Conservation easement activities

In addition to GHAD responsibilities to abate, mitigate, prevent, and control geologic hazards, the GHAD has responsibilities as a landowner within the GHAD-owned parcels, including:

- Vegetation management for fire suppression
- Litter and debris collection
- Fencing

PROJECTED EXPENSES

ENGEO prepared the initial 2007 and 2011 Engineer's Reports used to establish the assessment limits for the Positano and Jordan Ranch developments in the GHAD. By resolution, the GHAD Board of Directors approved the Engineer's Reports and ordered the assessment in 2007 and 2011 for each development, respectively. Since the transfer of Plan of Control responsibilities from the developer to the GHAD, ENGEO has completed biannual site-monitoring events (Reference 6) to observe and summarize site conditions.

In general, expenses have been lower than estimated in the approved 2007 and 2011 Engineer's Reports. We attribute the additional reserve accumulation to a number of factors including: (1) The Fallon Village GHAD accepted monitoring and maintenance responsibilities for improvements within the developments later than anticipated; (2) ten of the last 15 years since the completion of mass grading have had below-average rainfall; therefore, there has been a reduced level of slope instability and erosion, (3) fees for contracted GHAD services have been less than anticipated in the 2007 and 2011 Engineer's Reports, and (4) a large-scale repair (estimated at \$1,000,000 in 2007 for Positano and at \$500,000 in 2011 for Jordan Ranch every 10 years) has not yet been necessary within the GHAD-maintained areas.

Additional details for each of the items contributing to lower actual expenses are provided below.

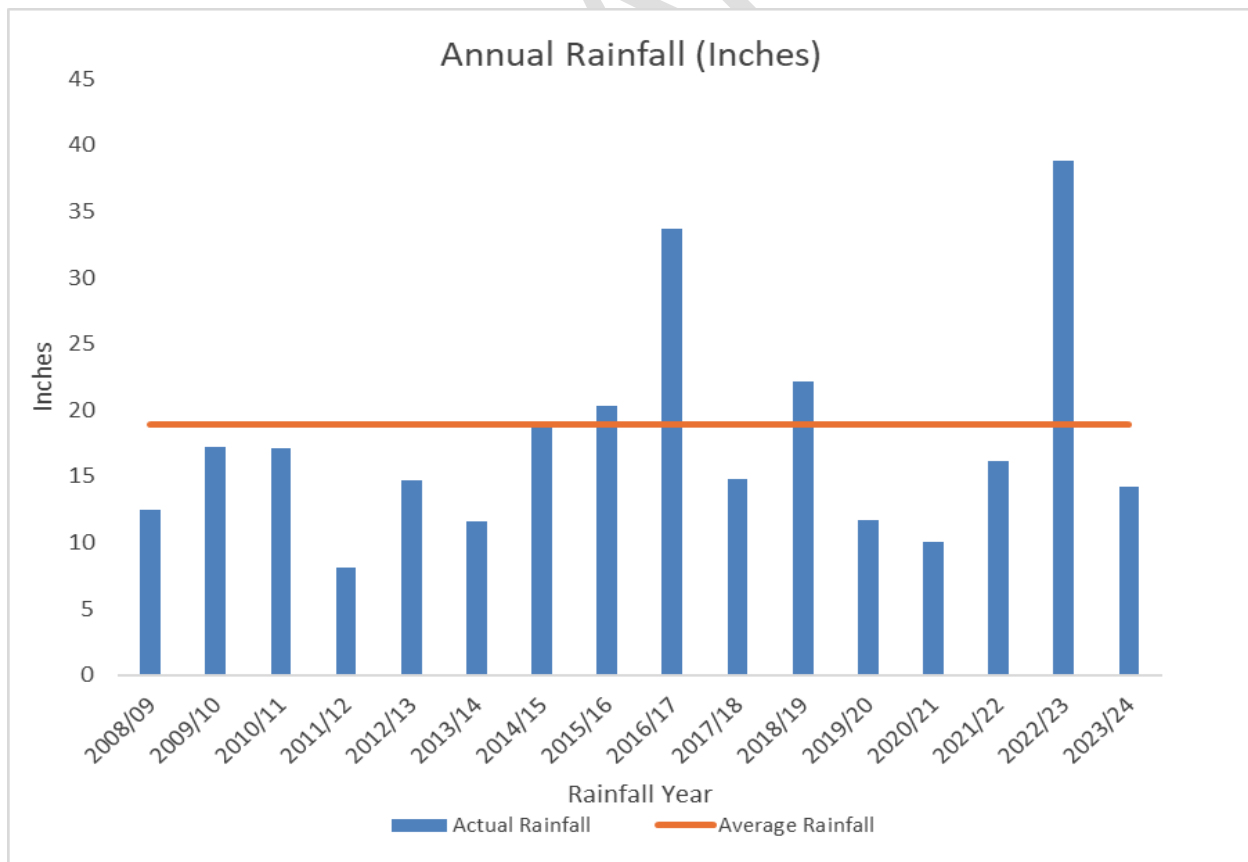
Transfer of Plan of Control Responsibilities from the Developer to the GHAD

The Fallon Village GHAD has maintenance and monitoring responsibilities for all the parcels within the Fallon Village development with the exception of Bioretention Basin No. 4 (Parcel A, Tract 8109, Assessor's Parcel Number 985-0109-001) in the Positano development. While the developer still owns Bioretention Basin No. 4 and the timing of transfer of Plan of Control Responsibilities for this parcel is uncertain, this Reserve Fund Study does consider GHAD-ownership and maintenance responsibilities of this parcel in the future.

Annual Rainfall Data since the Completion of Mass Grading

Annual rainfall data for the Dublin area are shown in Exhibit 1. The readings are from measurements taken at the San Ramon Valley Fire Protection District on Alcosta Boulevard for each rainfall year (July 1 to June 30). The average rainfall in the Dublin area is approximately 18.9 inches per year. Mass Grading for the Positano and Jordan Ranch development was completed in 2011 and 2012, respectively, and the majority of Plan of Control responsibilities were transferred from the developer to the GHAD in 2015. Since the completion of mass-grading activities, 10 of the 15 years have had below-average rainfall by an average of approximately 7%. Since 2015, when the GHAD accepted maintenance responsibilities, average rainfall over that period has been around the historical average. The projected expenses used in this study assume average rainfall totals, which may include more slope instability than has occurred since the completion of mass grading activities.

EXHIBIT 1: Dublin Area Rainfall Years 2008/09 to 2023/24 (to date)



Expense Estimates

To prepare the current GHAD reserve fund amount, we reviewed the initial and revised Engineer's Reports, the existing site conditions, and revenue and expense information. Most of the initial expense estimates remain valid, but some amounts have been adjusted to account for site performance over the past 10 years and contracted expenses which differed from the earlier estimates. Adjusted for inflation, annualized GHAD expenses calculated from the adopted 2007 and 2011 Engineer's Report would be \$1,100,967. As shown in Exhibit C and used in the calculations for Exhibit D, the annualized GHAD expenses are \$477,811, approximately a 57% decrease in estimated expenses.

Large-Scale Repair

A large-scale landslide or other geologic hazard (estimated at \$1,000,000 in 2007 dollars for the Positano development and \$500,000 in 2011 dollars for the Jordan Ranch development every 10 years to repair) has not occurred within the GHAD-maintained areas. Based on the site performance since mass grading, we have extended the reoccurrence interval for large scale repairs from 10 to 20 years for estimating expenses for this Reserve Fund Study.

RESERVE ESTIMATION AND METHODOLOGY

For the 2007 and 2011 Engineer's Reports, we estimated the reserve (R) appropriate for the Fallon Village GHAD using the following factors from the attached paper titled, "Estimating an Appropriate GHAD Reserve" dated June 1999 (Exhibit E).

- Number of assessed units (n)
- Level of geotechnical risk within the development boundaries (g)
- Average value of assessed properties (v)
- Relative density of construction (d)

Table 2 provides the inputs and target reserve amounts calculated in 2007, 2011, and 2024 dollars, respectively.

TABLE 2: Target Reserve Calculations

FALLON VILLAGE GHAD TARGET RESERVE	R=v(d+gn)		
	2007 (Positano)	2011 (Jordan Ranch)	2024 (Combined)
NUMBER OF ASSESSED UNITS (n)	1,043	751	1,951
AVERAGE VALUE OF EACH RESIDENCE (v)	\$1,000,000 ¹	\$750,000 ²	\$1,862,000
GEOTECHNICAL RISK FACTOR (g)	0.003	0.003	0.002
DENSITY FACTOR (d)	2	2	2
TARGET RESERVE (Rounded)	\$5,129,000 ¹	\$3,190,000 ²	\$10,987,000

¹2007 Dollars (\$9,893,000 in 2024 Dollars)

²2011 Dollars (\$5,221,000 in 2024 Dollars)

For the current Reserve Fund Study, we updated the reserve calculation inputs, as appropriate. As prepared in the most recent assessment roll for the Fallon Village GHAD, 1,951 residential units are subject to the levy of a GHAD assessment. The average value of assessed residential properties is used as a surrogate index to represent construction costs over time. The average

value of assessed properties is based on current values derived from web-based sources. In the initial Engineer's Report, it was estimated that the assessed values would track inflation. The current survey of property values allows for an adjustment, as the value of assessed properties has not tracked with the consumer price index measure of inflation.

Items considered in determining the level of geotechnical risk include:

- Site geology including seismic hazards
- Corrective grading and other geotechnical mitigation measures
- Proximity of geologic hazards to GHAD-maintained improvements
- Performance of the site improvements

An earthquake of moderate to high magnitude generated within the San Francisco Bay region could cause considerable ground shaking at the site, similar to that which has occurred in the past, possibly damaging GHAD-maintained improvements and causing seismically induced landslides. The Calaveras fault is located approximately 6.8 miles west of the limits of the Fallon Village GHAD and the Hayward fault is located approximately 13.7 miles to the west. Predictions for the nearby segments of the Calaveras fault indicate that there is approximately a 12 percent chance of a 6.7 magnitude earthquake in approximately the next 30 years. For the Hayward fault, there is a 28 percent chance in the same time period.

The corrective grading and geotechnical mitigation improvements are not significantly different from those completed during the mass grading for the development and as accounted for in the initial Engineer's Report. Likewise, the proximity of geologic hazards to GHAD-maintained improvements does not appear significantly different from those encountered during mass grading for the site. The GHAD-maintained slopes and improvements appear to be performing somewhat better than anticipated in 2007 and 2011; therefore, we have reduced the geotechnical risk factor from 0.003 to 0.002.

The existing configuration of the development footprint is similar to that on the site plans available at the time the initial Engineer's Reports were prepared; therefore, the relative density value has not been adjusted.

Based on these parameters, we estimate that an appropriate long-term reserve for the GHAD for 1,951 units would be approximately \$10,990,000 in current dollars. The \$10,990,000 reserve amount would allow the GHAD to respond to anticipated events within the GHAD, while still having funds to continue its other administration, maintenance, and monitoring functions.

DISCUSSION AND CONCLUSIONS

With an estimated GHAD account balance of approximately \$10,376,000 at the end of the 2023/24 fiscal year, an adequate reserve appears to have been achieved. In 2007, it was forecast that an adequate reserve would be accumulated over approximately 40 years, but based on lower GHAD expenses, this has been achieved in a little over 15 years. Since the revised reserve target has been reached, the GHAD Manager recommends that the GHAD Board of Directors consider lowering the levy on residences within the GHAD for FY 2024/25 as shown in Exhibit B.

As provided in the 2007 and 2011 Engineer's Reports, the annual assessment levy and assessment limit will be adjusted for inflation. Ongoing assessment levies, even at an amount lower than the assessment limit, will allow the GHAD to continue funding its other

administration, maintenance, and monitoring functions including a larger repair. We are not recommending that the assessment limit be lowered at this time. The assessment limit would continue to be adjusted for inflation as provided in the approved Engineer's Report.

If you have any questions regarding the contents of this letter, please do not hesitate to contact us.

Sincerely,

ENGEO Incorporated

Haley Ralston

Eric Harrell, CEG

hjr/eh/dt

Attachments: List of Selected References

Exhibit A: Fallon Village GHAD Assessment Limit Inflation Adjustments

Exhibit B: Fallon Village GHAD Recommended Assessment Levies for Fiscal
Year 2024/25

Exhibit C: Expense Details

Exhibit D: Pro Forma Budget with \$10,987,000 Reserve (2023/24 dollars)

Exhibit E: Estimating an Appropriate GHAD Reserve

LIST OF SELECTED REFERENCES

1. ENGEO. 2007. Plan of Control for Fallon Village Geologic Hazard Abatement District (GHAD), Dublin, California. May 8, 2007, Latest Revision July 3, 2013. Project No. 4663.101.001.
2. ENGEO. 2011. Fallon Village Geologic Hazard Abatement District (GHAD) Plan of Control Jordan Ranch Development Annexation, Dublin, California; February 11, 2011. Project No. 7828.000.000.
3. ENGEO. 2007. Engineer's Report for Fallon Village Geologic Hazard Abatement District, Dublin, California; May 29, 2007, Latest Revision December 13, 2007. Project No. 4663.1.010.01.
4. ENGEO. 2011. Engineer's Report Annexation of the Jordan Ranch Development into the Fallon Village Geologic Hazard Abatement District, Dublin, California. October 20, 2011. Project No. 7828.000.000.
5. ENGEO. 2013. Engineer's Report for Fallon Village Geologic Hazard Abatement District, Dublin, California. July 3, 2013. Project No. 4663.101.001.
6. City of Dublin. 2023. Fallon Village Geologic Hazard Abatement District (5301), Fiscal Year 2023-24 Budget. May 16, 2023.
7. ENGEO. 2024. Geologic Hazard Abatement District Monitoring – Fall 2023, Fallon Village Geologic Hazard Abatement District (GHAD), Dublin, California; February 2, 2024. Project No. 4663.002.023.
8. National Oceanic and Atmospheric Administration (NOAA). 2024. National Centers for Environmental Information, Dublin Museum Station Details, July 1, 2001 through February 15, 2024.
9. United States Federal Reserve Board of Governors. 2012. Federal Open Market Committee Statement of Longer-Run Goals and Policy Strategy, Press Release, January 25, 2012.

EXHIBIT A

Fallon Village GHAD Assessment Limit Inflation Adjustments

TABLE A1: Positano Assessment Limit Inflation Adjustments

FISCAL YEAR	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
ANNUAL CPI (JUNE)	216.123	225.181	225.692	228.110	233.646	239.806	245.935	253.317	256.117
SF/OAK, 1967=100		4.19%	0.23%	1.07%	2.43%	2.64%	2.56%	3.00%	2.29%
ASSESSMENT LIMIT (SINGLE-FAMILY)	\$488.00	\$508.45	\$509.61	\$515.07	\$527.57	\$541.48	\$555.31	\$571.98	\$585.08
NON-RESIDENTIAL (per square foot)	\$0.05	\$0.05210	\$0.05221	\$0.05277	\$0.05405	\$0.05548	\$0.05690	\$0.05860	\$0.05995

FISCAL YEAR	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
ANNUAL CPI (JUNE)	266.041	275.304	286.062	295.259	300.032	309.497	330.539	340.056
SF/OAK, 1967=100	2.67%	3.48%	3.91%	3.22%	1.62%	3.15%	6.80%	2.88%
ASSESSMENT LIMIT (SINGLE-FAMILY)	\$600.71	\$621.63	\$645.92	\$666.69	\$677.46	\$698.84	\$746.35	\$767.84
NON-RESIDENTIAL (per square foot)	\$0.06155	\$0.06369	\$0.06618	\$0.06831	\$0.06941	\$0.07160	\$0.07647	\$0.07867

TABLE A2: Jordan Ranch Assessment Limit Inflation Adjustments

FISCAL YEAR	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18
ANNUAL CPI (DECEMBER)	227.658	234.327	239.533	245.711	252.273	260.289	269.483
SF/OAK, 1967=100		2.93%	2.22%	2.58%	2.67%	3.18%	3.53%
ASSESSMENT LIMIT (5,200 sq. ft. SINGLE-FAMILY)	\$541.00	\$556.85	\$569.22	\$583.90	\$599.49	\$618.54	\$640.39
ASSESSMENT LIMIT (4,000 sq. ft. SINGLE-FAMILY)	\$416.57	\$428.77	\$438.30	\$449.60	\$461.61	\$476.28	\$493.10
ASSESSMENT LIMIT (3,200 sq. ft. SINGLE-FAMILY)	\$335.42	\$345.25	\$352.92	\$362.02	\$371.69	\$383.50	\$397.04
ASSESSMENT LIMIT (4-UNIT CLUSTERS)	\$373.29	\$384.23	\$392.76	\$402.89	\$413.65	\$426.79	\$441.87
ASSESSMENT LIMIT (SMALL ALLEY LOT)	\$313.78	\$322.97	\$330.15	\$338.66	\$347.71	\$358.76	\$371.43
ASSESSMENT LIMIT (3-STORY TOWNHOMES)	\$254.27	\$261.72	\$267.53	\$274.43	\$281.76	\$290.72	\$300.98
ASSESSMENT LIMIT (3-STORY TOWNHOMES WITH FLATS)	\$243.45	\$250.58	\$256.15	\$262.76	\$269.77	\$278.34	\$288.18
ASSESSMENT LIMIT (LOFTS OVER RETAIL (MIXED USE))	\$259.68	\$267.29	\$273.23	\$280.27	\$287.76	\$296.90	\$307.39
NON-RESIDENTIAL (per sq. ft.)	\$0.05543	\$0.05705	\$0.05832	\$0.05983	\$0.06142	\$0.06337	\$0.06561

TABLE A2: Jordan Ranch Assessment Limit Inflation Adjustments (Cont.)

FISCAL YEAR	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
ANNUAL CPI (DECEMBER)	277.414	289.896	297.007	302.948	315.805	331.222
SF/OAK, 1967=100	2.94%	4.50%	2.45%	2.00%	4.24%	4.88%
ASSESSMENT LIMIT (5,200 sq. ft. SINGLE-FAMILY)	\$659.24	\$688.90	\$705.80	\$719.92	\$750.47	\$787.11
ASSESSMENT LIMIT (4,000 sq. ft. SINGLE-FAMILY)	\$507.61	\$530.45	\$543.47	\$554.34	\$577.86	\$606.07
ASSESSMENT LIMIT (3,200 sq. ft. SINGLE-FAMILY)	\$408.73	\$427.12	\$437.60	\$446.35	\$465.29	\$488.01
ASSESSMENT LIMIT (4-UNIT CLUSTERS)	\$454.87	\$475.34	\$487.00	\$496.74	\$517.82	\$543.10
ASSESSMENT LIMIT (SMALL ALLEY LOT)	\$382.36	\$399.56	\$409.36	\$417.55	\$435.27	\$456.52
ASSESSMENT LIMIT (3-STORY TOWNHOMES)	\$309.84	\$323.78	\$331.73	\$338.36	\$352.72	\$369.94
ASSESSMENT LIMIT (3-STORY TOWNHOMES WITH FLATS)	\$296.66	\$310.01	\$317.61	\$323.96	\$337.71	\$354.20
ASSESSMENT LIMIT (LOFTS OVER RETAIL (MIXED USE))	\$316.43	\$330.67	\$338.78	\$345.56	\$360.23	\$377.81
COMMERCIAL (per sq. ft.)	\$0.06754	\$0.07058	\$0.07232	\$0.07376	\$0.07689	\$0.08065

EXHIBIT B

Fallon Village GHAD Recommended Assessment Levies for Fiscal Year 2024/25

TABLE 1: Fallon Village GHAD Recommended Assessment Levies for Fiscal Year 2024/25

FISCAL YEAR	2024/25
POSITANO ASSESSMENT LIMIT (SINGLE-FAMILY)	\$307.37
POSITANO NON-RESIDENTIAL (per sq. ft.)	\$0.03934
JORDAN RANCH ASSESSMENT LIMIT (5,200 sq. ft. SINGLE-FAMILY)	\$343.72
JORDAN RANCH ASSESSMENT LIMIT (4,000 sq. ft. SINGLE-FAMILY)	\$264.40
JORDAN RANCH ASSESSMENT LIMIT (3,200 sq. ft. SINGLE-FAMILY)	\$211.52
JORDAN RANCH ASSESSMENT LIMIT (4-UNIT CLUSTERS)	\$147.67
JORDAN RANCH ASSESSMENT LIMIT (SMALL ALLEY LOT)	\$137.49
JORDAN RANCH ASSESSMENT LIMIT (3-STORY TOWNHOMES)	\$138.55
JORDAN RANCH ASSESSMENT LIMIT (3-STORY TOWNHOMES WITH FLATS)	\$126.32

EXHIBIT C
Expense Details

**Fallon Village Geologic Hazard Abatement District (GHAD) Budget
Reserve Study Expense Details- DRAFT**

Item No.	Description	Unit	Quantity	Unit Price	Total Cost	Reoccurrence Interval (Years)	Annual Total Budget	Comments
1	Administration and Accounting							
	GHAD Manager	monthly	12	\$500	\$6,000	1.0	\$6,000	Contract with City of Dublin to staff and provide GHAD Manager services.
	GHAD Engineer	monthly	12	\$3,000	\$36,000	1.0	\$36,000	Contract with City of Dublin to staff and provide GHAD Engineering services.
	GHAD Treasurer	quarterly	4	\$1,000	\$4,000	1.0	\$4,000	Contract with City of Dublin to staff and provide GHAD Treasurer services.
	GHAD Clerk	ls	1	\$4,000	\$4,000	1.0	\$4,000	Contract with City of Dublin to staff and provide GHAD Clerk services.
	GHAD Services Consultant	monthly	12	\$5,043	\$60,510	1.0	\$60,510	Contract with ENGEO to support day-to-day operations of the GHAD as the GHAD Services Consultant.
	GHAD Attorney	ls	1	\$10,000	\$10,000	1.0	\$10,000	Contract with Meyers Nave to provide legal services to the GHAD.
	Insurance - Open Space Areas	acre	223	\$13	\$2,900	1.0	\$2,900	This cost estimate is based on fees currently charged to GHADs in Dublin and California through the California Association of GHADs.
	Membership dues for the California Association of Geologic Hazard Abatement Districts	ls	1	\$600	\$600	1.0	\$600	This cost estimate is based of membership fees currently charged by the California Association of GHADs (\$100 plus \$0.25/residential parcel).
	Assessment Roll and Levy Update	ls	1	\$2,750	\$2,750	1.0	\$2,750	This cost estimate is based on fees currently charged to the Fallon Village GHAD.
						Subtotal	\$126,760	

**Fallon Village Geologic Hazard Abatement District (GHAD) Budget
Reserve Study Expense Details- DRAFT**

Item No.	Description	Unit	Quantity	Unit Price	Total Cost	Reoccurrence Interval (Years)	Annual Total Budget	Comments
2	Professional Services							
	GHAD Monitoring Event including instrumentation - April and October	Is	1	\$8,000	\$8,000	0.5	\$16,000	The frequency of monitoring is based on the adopted Plan of Control requirements for Positano and Jordan Ranch developments. Monitoring budget estimates are based on the fees these services are currently being provided to the GHAD and are based approved Engineer's Report.
	Heavy Rainfall Event Monitoring	Is	1	\$4,000	\$4,000	0.5	\$8,000	The frequency of monitoring is based on the adopted Plan of Control requirements for Positano and Jordan Ranch developments. Monitoring budget estimates are based on the fees these services are currently being provided to the GHAD and are based approved Engineer's Reports.
						Subtotal	\$24,000	

**Fallon Village Geologic Hazard Abatement District (GHAD) Budget
Reserve Study Expense Details- DRAFT**

Item No.	Description	Unit	Quantity	Unit Price	Total Cost	Reoccurrence Interval (Years)	Annual Total Budget	Comments
3	Maintenance & Operation							
	Subdrains and outlets	ls	1	\$1,890	\$1,890	1.0	\$1,890	We do not anticipate regular maintenance on the subdrain outfalls which tend to have low flow volumes, but this budget figure allows for maintenance or repair as may be necessary.
	Sediment/Debris Removal concrete-lined drainage ditches.	lf	5,650	\$0.32	\$1,785	1.0	\$1,785	Services currently contracted by the GHAD with an inflation adjustment.
	Sediment/Debris Removal earthen-lined drainage ditches.	lf	8,725	\$0.16	\$1,365	1.0	\$1,365	Vegetation removal and herbicide treatment. Services currently contracted by the GHAD with an inflation adjustment.
	Vegetation Management on Gravel-Surfaced Roadways (Approximately 4,500 Lineal feet)	ls	1	\$5,250	\$5,250	1.0	\$5,250	Vegetation cutting and removal. Services currently contracted by the GHAD with an inflation adjustment.
	Slope Stabilization and Erosion Repairs	ls	1	\$50,000	\$50,000	1.0	\$50,000	This budget items provides for ongoing slope stabilization that may include minor landslide repair activities, and biological monitoring as needed. This estimate is based on the approved Engineer's Reports and the performance of the site.
	Maintenance of the 1 onsite detention basin, 4 bioretention basins, and 1 mitigation pond including sediment, vegetation, and debris removal.	ls	1	\$18,900	\$18,900	1.0	\$18,900	Services currently contracted by the GHAD with an inflation adjustment.
	Open Space Vegetation Management - Fire Suppression	ls	1	\$43,050	\$43,050	1.0	\$43,050	Two cuttings per year. Services currently contracted by the GHAD with an inflation adjustment.
	Open Space Litter Collection and Removal	each	1	\$1,050	\$1,050	0.25	\$4,200	Services currently contracted by the GHAD with an inflation adjustment.
						Subtotal	\$126,440	

**Fallon Village Geologic Hazard Abatement District (GHAD) Budget
Reserve Study Expense Details- DRAFT**

Item No.	Description	Unit	Quantity	Unit Price	Total Cost	Reoccurrence Interval (Years)	Annual Total Budget	Comments
4	Capital Improvements							
	Concrete-lined drainage ditch replacement	lf	5,650	\$50	\$282,500	50.0	\$2,825	We have provided for a 50-year replacement cycle for the concrete-lined drainage ditches for 50 percent of the ditches. This replacement quantity applies to concrete lined drainage ditch that is not involved with slope instability. Drainage ditches that are involved with slope instability would be repaired or replaced during corrective work for the individual events.
	Open space storm drain pipeline, inlet, and outfall replacement.	lf	7,500	\$50	\$375,000	75.0	\$2,500	We have provided for a 50-year replacement cycle for 50 percent of the open space storm drain pipelines and associated facilities. This replacement quantity applies to system components that are not damaged due to slope instability.
	Gravel-surface roadways replacement	sf	150,000	\$4	\$600,000	25.0	\$24,000	We anticipate a 3-inch overlay of class 2 aggregate base rock on roadway will occur approximately every 25 years.
	Asphaltic-surface roadways replacement	sf	7,600	\$4	\$30,400	20.0	\$1,520	We anticipate an asphaltic concrete overlay on the access/maintenance roads will occur approximately every 20 years.
	Fence wall replacement	lf	16,000	\$20	\$320,000	40.0	\$8,000	We have provided for a 40-year replacement cycle for the open space fences.
	Retaining wall replacement	sf	8,800	\$90	\$792,000	75.0	\$5,280	We have provided for a 75-year replacement cycle for for 50 percent of the retaining walls.
						Subtotal	\$44,125	

**Fallon Village Geologic Hazard Abatement District (GHAD) Budget
Reserve Study Expense Details- DRAFT**

Item No.	Description	Unit	Quantity	Unit Price	Total Cost	Reoccurrence Interval (Years)	Annual Total Budget	Comments
5	Major Repair (Annualized)	ls	1	\$2,487,063	\$2,487,063	20.0	\$124,353	This figure represents the annualized repair cost estimate for a \$2,487,063 repair event that occurs on average every 20 years. As with the other cost estimate items this budget item is indexed to the Consumer Price Index. This figure is based on our experience, the geology of the site, the performance of the graded site and the configuration of the site improvements. The major repair cost estimate is not isolated from the slope instability and erosion control items which plan for an additional \$50,000 per year for slope maintenance and repair operations.
Subtotal							\$124,353	
Contingency (10%)							\$32,133	
TOTAL							\$477,811	

EXHIBIT D

**Pro Forma Budget with \$10,987,000 Reserve
(2023/24 dollars)**

Fallon Village Geologic Hazard Abatement District (GHAD)

Estimated Budget - February 26, 2024 (DRAFT)

YEAR (Starting July 1)	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>	<u>2035</u>	<u>2036</u>	<u>2037</u>
Cumulative No. of Units (Equivalent)	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420
Cumulative No. of Units (Actual)	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951
A. INCOME														
Residential Assessment	488,088	506,382	524,106	542,449	561,435	581,085	601,423	622,473	644,260	666,809	690,147	714,302	739,303	765,178
B. PROJECTED EXPENSES														
1. Administration and Accounting	126,760	130,563	134,480	138,514	142,670	146,950	151,358	155,899	160,576	165,393	170,355	175,466	180,730	186,152
Alameda County Assessor's Fees	8,298	8,608	8,910	9,222	9,544	9,878	10,224	10,582	10,952	11,336	11,732	12,143	12,568	13,008
2. Professional Services	24,000	24,720	25,462	26,225	27,012	27,823	28,657	29,517	30,402	31,315	32,254	33,222	34,218	35,245
3. Maintenance & Operation	76,440	78,733	81,095	83,528	86,034	88,615	91,273	94,012	96,832	99,737	102,729	105,811	108,985	112,255
4. Slope-Erosion Stabilization	50,000	51,500	53,045	54,636	56,275	57,964	59,703	61,494	63,339	65,239	67,196	69,212	71,288	73,427
5. Repair	-	-	-	-	-	1,832,881	-	-	-	-	-	-	-	-
6. Capital Improvement	44,125	45,449	46,812	48,217	49,663	51,153	52,688	54,268	55,896	57,573	59,300	61,079	62,912	64,799
7. Misc. Expenses	32,133	33,096	34,089	35,112	36,165	37,250	38,368	39,519	40,705	41,926	43,183	44,479	45,813	47,188
SUBTOTAL - EXPENSES	361,755	372,670	383,893	395,454	407,364	2,252,514	432,271	445,290	458,702	472,518	486,750	501,411	516,514	532,072
RESERVE	9,328,805	133,712	140,213	146,995	154,071	(1,671,428)	169,152	177,183	185,558	194,291	203,397	212,891	222,788	233,106
EARNINGS	322,087	337,781	354,283	371,591	389,741	408,775	364,582	383,263	402,878	423,473	445,095	467,792	491,616	516,621
CUMULATIVE RESERVE	9,650,892	10,122,385	10,616,881	11,135,467	11,679,280	10,416,626	10,950,360	11,510,805	12,099,241	12,717,005	13,365,498	14,046,181	14,760,586	15,510,312

ASSUMPTIONS	
Total No. of Equivalent Units	1,420
Annual Assessment per Unit	\$343.72
Commercial (square feet)	14,869
Annual Assessment per square foot	\$0.079
Annual Increase in Assessment	3.50%
Inflation	3.00%
Investment Earnings	3.5%
Initial Seed Fund	\$9,202,472
Amount Financed	\$0
Borrowing Rate	8.0%
Term of Loan (yrs.)	10
Frequency of Large-Scale Repair (yrs.)	10
Cost of Large-Scale Repair (current \$)	\$2,487,063
Assessment Cap (per residential unit)	9999
Expense Deferral Period (Yrs.)	0

ESTIMATED ANNUAL EXPENSES IN 2023/24 DOLLARS		PROFORMA CATEGORY
Administration & Accounting	\$126,760	Administration & Accounting
GHAD Monitoring Program and Technical Services	\$24,000	Professional Services
Annual Maintenance and Operation	\$57,540	Maintenance and Operation
Detention/Bioretenction Basin Maintenance	\$18,900	Maintenance and Operation
Erosion -Slope Stabilization (incl. minor landsliding)	\$50,000	Slope Stabilization and Erosion Protection
Capital Improvements	\$44,125	Capital Improvement
Major Repair (Annualized)	\$124,353	Major Repair
Misc. & Contingency (10%)	<u>\$32,133</u>	Miscellaneous Expenses
TOTAL	\$477,811	

<u>2038</u>	<u>2039</u>	<u>2040</u>	<u>2041</u>	<u>2042</u>	<u>2043</u>	<u>2044</u>	<u>2045</u>	<u>2046</u>	<u>2047</u>	<u>2048</u>	<u>2049</u>	<u>2050</u>	<u>2051</u>	<u>2052</u>	<u>2053</u>	<u>2054</u>	<u>2055</u>
1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420
1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951
791,960	819,678	848,367	878,060	908,792	940,599	973,520	1,007,594	1,042,859	1,079,360	1,117,137	1,156,237	1,196,705	1,238,590	1,281,941	1,326,808	1,373,247	1,421,310
191,736	197,488	203,413	209,515	215,801	222,275	228,943	235,811	242,885	250,172	257,677	265,408	273,370	281,571	290,018	298,719	307,680	316,910
13,463	13,935	14,422	14,927	15,449	15,990	16,550	17,129	17,729	18,349	18,991	19,656	20,344	21,056	21,793	22,556	23,345	24,162
36,302	37,391	38,513	39,668	40,858	42,084	43,347	44,647	45,986	47,366	48,787	50,251	51,758	53,311	54,910	56,558	58,254	60,002
115,622	119,091	122,664	126,344	130,134	134,038	138,059	142,201	146,467	150,861	155,387	160,048	164,850	169,795	174,889	180,136	185,540	191,106
75,629	77,898	80,235	82,642	85,122	87,675	90,306	93,015	95,805	98,679	101,640	104,689	107,830	111,064	114,396	117,828	121,363	125,004
-	-	-	-	-	-	-	-	-	-	-	3,003,389	-	-	-	-	6,036,755	-
66,743	68,745	70,808	72,932	75,120	77,373	79,695	82,085	84,548	87,085	89,697	92,388	95,160	98,014	100,955	103,983	107,103	110,316
48,603	50,061	51,563	53,110	54,703	56,345	58,035	59,776	61,569	63,416	65,319	67,278	69,297	71,376	73,517	75,722	77,994	80,334
548,100	564,610	581,618	599,139	617,187	635,780	654,934	674,664	694,990	715,928	737,498	3,763,107	782,608	806,188	830,478	855,502	6,918,034	907,835
243,860	255,068	266,749	278,921	291,604	304,819	318,587	332,929	347,869	363,431	379,639	(2,606,870)	414,098	432,402	451,462	471,307	(5,544,788)	513,476
542,861	570,396	599,287	629,599	661,397	694,752	729,737	766,428	804,906	845,253	887,557	931,909	873,285	918,343	965,620	1,015,217	1,067,246	910,532
16,297,033	17,122,497	17,988,533	18,897,053	19,850,054	20,849,625	21,897,949	22,997,307	24,150,082	25,358,766	26,625,962	24,951,001	26,238,384	27,589,129	29,006,211	30,492,735	26,015,193	27,439,201

<u>2056</u>	<u>2057</u>	<u>2058</u>	<u>2059</u>	<u>2060</u>	<u>2061</u>	<u>2062</u>	<u>2063</u>	<u>2064</u>
1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420	1,420
1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951	1,951
1,471,056	1,522,543	1,575,832	1,630,986	1,688,071	1,747,153	1,808,304	1,871,594	1,937,100
326,418	336,210	346,297	356,686	367,386	378,408	389,760	401,453	413,496
25,008	25,883	26,789	27,727	28,697	29,702	30,741	31,817	32,931
61,802	63,656	65,566	67,533	69,559	71,645	73,795	76,009	78,289
196,839	202,744	208,827	215,092	221,544	228,191	235,036	242,088	249,350
128,754	132,617	136,595	140,693	144,914	149,261	153,739	158,351	163,102
-	-	-	-	-	-	-	-	8,112,894
113,626	117,034	120,545	124,162	127,887	131,723	135,675	139,745	143,937
82,744	85,226	87,783	90,416	93,129	95,923	98,801	101,765	104,817
935,191	963,371	992,402	1,022,308	1,053,116	1,084,853	1,117,547	1,151,227	9,298,816
535,866	559,172	583,430	608,678	634,955	662,301	690,757	720,367	(7,361,716)
960,372	1,012,740	1,067,757	1,125,549	1,186,247	1,249,989	1,316,919	1,387,188	1,460,952
28,935,438	30,507,350	32,158,538	33,892,765	35,713,967	37,626,257	39,633,933	41,741,488	35,840,724

Reserve in

2024

Dollars: 10,987,219

EXHIBIT E

Estimating an Appropriate GHAD Reserve

ESTIMATING AN APPROPRIATE GHAD RESERVE

Uri Eliahu G.E., ENGEO Incorporated, June 1999

An important parameter in establishing initial GHAD budgets and in assessing the financial health of mature GHADs is the appropriate level of reserve needed to address probable future geologic events. The reserve must be unique to each GHAD, and must consider several factors, not all of which are geotechnical in nature.

As an initial approach, a loss history can be compiled based on records of actual losses that have occurred in the region in the last 20 years. If the last 20 years can be assumed to be representative of future years, this loss history can be distilled to obtain a current net present value (NPV) of the statistically-expected loss over a given time period. This can be expressed per dwelling unit, per parcel, or per dollar value of improvements. If, based on historic geologic and rainfall records, it is believed that the last two decades do not represent the full range of expected geologic activity, a correction factor can be applied to the calculated risk to arrive at the expected loss rate.



In converting the expected loss rate to an estimated reserve (**R**), consideration must be given to the following factors.

Number of assessed units (**n**) in the GHAD.

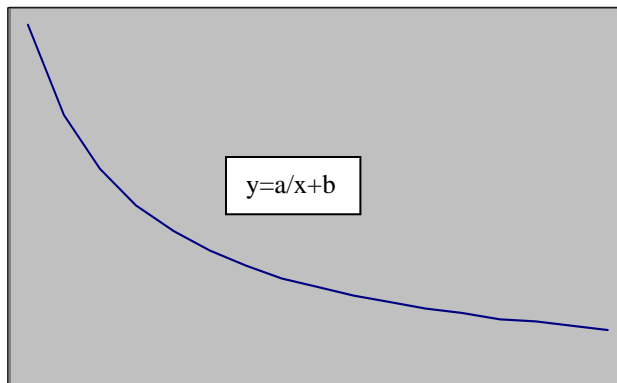
The reserve per dwelling unit (**R/n** or **average reserve**) should, in theory, diminish asymptotically with increasing unit count to a “floor” value.

Level of geotechnical risk (**g**) within the GHAD boundaries. Depending on geology, terrain, prior mitigation measures, grading techniques, irrigation and age, geotechnical risk may vary, even within a particular region.

Average value of assessed properties (**v**). In areas of high property values, repair or reconstruction of private improvements may be more costly and may require greater average reserves.

Relative density of construction (**d**). The number of units likely to be affected during a major geologic event will have an impact on the total reserve.

In consideration of the foregoing, an expression describing the average reserve may take the general hyperbolic form, $y = a/x + b$



Intuitively, this general expression may be applied to a GHAD reserve formula by substituting R/n for y , n for x , dv for a , and gv for b , to arrive at the relationship $R/n = dv/n + gv$ where:

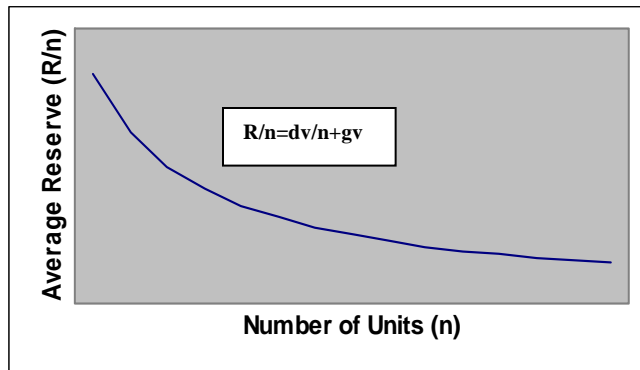
R is the total reserve

n is the total number of assessed parcels

v is the average value of each residence

g is the geotechnical risk factor

d is a density factor related to the maximum number of units expected to be impacted in a major geologic event (eg. landslide)



This formula can be simplified to $R = dv + gvn$ or $R = v(d + gn)$

To apply this to a specific situation, g can be estimated based on historical data as described above, and d can be estimated by comparing regional landslide sizes to average lot sizes. Preliminarily, it appears that d may range from approximately 2 to 10 and g may range from 0.001 to 0.01, depending on the physical characteristics of the assessed areas as described above.

