

**Fiscal Year 2020/2021
ENGINEER'S REPORT**

**DOUGHERTY VALLEY
GEOLOGIC HAZARD ABATEMENT DISTRICT**



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ENGINEER'S REPORT

DOUGHERTY VALLEY GEOLOGIC HAZARD ABATEMENT DISTRICT

(Pursuant to the Public Resources Code of the State of California, Section 26500 et seq.)

CERTIFICATION OF FILING

Robin Bartlett, District Engineer of Dougherty Valley Geologic Hazard Abatement District (DVDV GHAD), San Ramon, Contra Costa County, California, makes this Report as directed by the DV GHAD Board of Directors. The DV GHAD is intended to provide geologic hazard improvements within the West Branch, Gale Ranch, Windemere, Old Ranch, and Silva Property areas, and to levy and collect assessments sufficient to pay for those improvements. This report is to levy the assessment for Fiscal Year July 1, 2020 to June 30, 2021.

The improvements, which are the subject of this report, are briefly described as follows:

"Improvement" means any activity necessary or incidental to the prevention, mitigation, abatement, or control of a geologic hazard, including, but not limited to the acquisition of property or any interest therein, construction, or the maintenance, repair, or operation of any improvement, or the issuance and servicing of bonds issued to finance any of the foregoing.

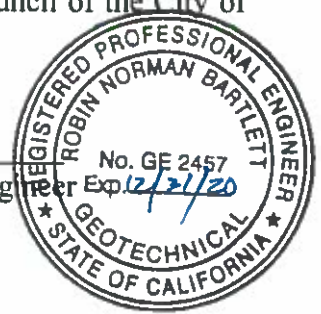
This report consists of the following eight (8) parts:

- I. BACKGROUND
 - II. DOUGHERTY VALLEY GEOLOGIC HAZARD ABATEMENT DISTRICT
DIAGRAM
 - III. SERVICE LEVELS
 - IV. DESCRIPTION OF DV GHAD IMPROVEMENTS
 - V. PROPOSED FY 2020/21 BUDGET
 - VI. ASSESSMENT METHODOLOGY
 - VII. ASSESSMENT ROLL
 - VIII. ASSESSMENT LIMIT – BUDGET PROJECTION
-

The undersigned respectfully submits the enclosed Engineer's Report as directed by the Dougherty Valley Geologic Hazard Abatement District Board of Directors, the City Council of the City of San Ramon.

Date: 5/12/20

By: Robin Bartlett
Robin Bartlett, P.E., G.E, District Engineer



I HEREBY CERTIFY that the enclosed Engineer's Report, together with the Assessment Diagram thereto attached was filed with me on the _____ day of May 2020.

Christina Franco, District Clerk
Dougherty Valley Hazard Abatement District
Contra Costa County, California

I HEREBY CERTIFY that the enclosed Engineer's Report, together with the Assessment Roll and Assessment Diagram thereto attached was approved and confirmed by the Dougherty Valley GHAD Board of Directors, the City Council of the City of San Ramon, California, on the _____ day of June 2020.

Christina Franco, District Clerk
Dougherty Valley Geologic Hazard Abatement District
Contra Costa County, California

I HEREBY CERTIFY that the enclosed Engineer's Report, together with the Assessment Roll and Assessment Diagram thereto attached was filed with the County Auditor of the County of Contra Costa on the _____ day of August 2020.

Christina Franco, District Clerk
Dougherty Valley Geologic Hazard Abatement District
Contra Costa County, California

ENGINEER'S REPORT
DOUGHERTY VALLEY
GEOLOGIC HAZARD ABATEMENT DISTRICT
Fiscal Year 2020/2021

I. BACKGROUND

The Dougherty Valley Geologic Hazard Abatement District (DV GHAD) was formed in 1990 in accordance with the Public Resources Code of the State of California, Section 26500 et seq. Originally, the DV GHAD included the West Branch area of the City of San Ramon, located at Crow Canyon and Dougherty Roads. In 1997, the DV GHAD was expanded to include both Gale Ranch and Windemere in Dougherty Valley. Annexation of the Old Ranch Summit subdivision into the DV GHAD occurred in April 2007 and annexation of the Silva Property occurred in March 2008. A minor annexation of the 10.4-acre South Bollinger Canyon Road Remainder Parcel was approved by the DV GHAD Board on February 28, 2012 through Resolution DV GHAD No. 2012-04.

**II. DOUGHERTY VALLEY GEOLOGIC HAZARD ABATEMENT DISTRICT
DIAGRAM**

The Diagram for the DV GHAD is shown in Appendix A and delineates the assessment district boundary.

III. SERVICE LEVELS

The DV GHAD provides for activity that is necessary or incidental to the prevention, mitigation, abatement, or control of a geologic hazard including, but not limited to, the acquisition of property or any interest therein, construction, or the maintenance, repair, or operation of any improvement, or the issuance and servicing of bonds issued to finance any of the foregoing.

The improvements for FY 2020/2021 include the administration and review of existing facilities within the budgeted limits. The District will provide the following services in FY 2020/2021:

1. Provide oversight of the DV GHAD.
2. Work with the County Assessor's Office to place the annual assessments for collection on the property tax rolls.
3. Retain the services of a geotechnical consultant, as needed, to undertake site inspections or conduct inspections using City of San Ramon staff. The inspections shall take place in October, prior to the first significant rainfall, and in early May at the end of the rainy season. The frequency of the inspections may increase depending upon the intensity and recurrence of rainfall within mid-winter site inspections, as necessary during heavy rainfall years.

4. Perform DV GHAD maintenance activities in accordance with the DV GHAD Plan of Control, updated and approved by the DV GHAD Board on September 22, 2009. These maintenance activities include weed abatement, maintenance of debris benches, concrete drainage ditches, and subsurface drainage systems with slope stabilization, erosion protection and sediment removal, as necessary.
5. Respond to landslides and other geologic hazard events, as needed.
6. Prepare annual DV GHAD budgets.
7. Continue evaluating the appropriate Reserve Fund and the assessment rate, based on the Reserve Fund Study, approved by the DV GHAD Board on April 22, 2003.
8. Acquire the open space parcels in accordance with the DV GHAD Annexation Agreements.
9. Manage the agricultural lease agreement, as appropriate.
10. Manage cellular telephone lease agreements.
11. Evaluate DV GHAD annexation proposals, if requested.

IV. DESCRIPTION OF THE DV GHAD IMPROVEMENTS

The limits of the DV GHAD are shown in Appendix A. The DV GHAD boundary encompasses approximately 5,850 acres predominantly on the east side of the San Ramon Valley in south-central Contra Costa County. Of this, approximately 2,800 acres is open space. Improvements are described in detail in the updated Plan of Control prepared for Geologic Hazard Abatement District No. 1990-01, dated August 28, 2009 and approved by the Board on September 22, 2009. In general, improvements include: debris benches; drainage systems including v-ditches, public storm drain inlets and outlets, subdrains, and surface drains; instruments such as piezometer and inclinometers; dewatering pumps; access roads/trails; and perimeter fencing. At the time of preparation of this report, the DV GHAD owned approximately 2,248 acres of open space out of an anticipated final total of 2,809 acres, or approximately 80% of the anticipated total. It is currently anticipated that the DV GHAD will take ownership of the remaining open space in FY 2020/21.

PROPOSED FY 2020/21 BUDGET

The proposed FY 2020/21 budget is as shown below in Table 1.

Table 1

	FY 2019-20		FY 2020-21
	Adopted Budget	Projected Actual	Proposed Budget
Beginning Fund Balance	\$ 11,854,527	\$ 12,744,530	\$ 8,947,932
Income			
Assessment (1)	\$ 1,946,092	\$ 1,938,674	\$ 2,182,400
Interest	\$ 59,273	\$ 59,273	\$ 71,583
Agreement Revenue (2)	\$ 47,685	\$ 47,685	\$ 47,685
Other Income	\$ 6,000	\$ 6,000	\$ 6,000
Total Income	\$ 2,059,050	\$ 2,051,632	\$ 2,307,668
Expenditures			
Staff and Administration Allocation	\$ 303,465	\$ 303,465	\$ 328,042
GHAD Monitoring and Consultants	\$ 57,000	\$ 57,000	\$ -
Slope Stabilization	\$ 150,000	\$ 150,000	\$ 567,725
Maintenance/ and Repairs	\$ 310,000	\$ 310,000	\$ -
Geotech Instrument Monitoring	\$ 7,500	\$ 7,500	\$ -
Vehicle Maintenance and Operation	\$ 3,075	\$ 3,075	\$ 1,900
GHAD Association and Misc	\$ 7,190	\$ 7,190	\$ 5,360
Supplies and Mailings	\$ 10,000	\$ 10,000	\$ 10,000
Total Expenditures	\$ 848,230	\$ 848,230	\$ 913,027
Major Repairs for reserve fund planning	\$ 155,797	\$ 5,000,000	\$ 160,471
Total Expenditures for reserve fund planning			\$ 1,073,498
Ending Fund Balance (including major repairs)	\$ 12,909,550	\$ 8,947,932	\$10,182,103

(1) Assessment is based on \$181.69 per residential unit and \$0.058 per building square foot non-residential

(2) Revenue from Agricultural Lease Agreement and cell tower access leases

Major repairs are included in the budget only when known to exist and in either the current or following year. They are however, included in the reserve fund study on an annualized basis. For this reason, the ending fund balance in the budget and reserve fund study are not the same.

VI. ASSESSMENT METHODOLOGY

The improvements as described in Section IV are distributed throughout the DV GHAD. Maintenance and protection of these improvements provide a special benefit to all property owners within the DV GHAD. The District Engineer and Engineer of Work hereby find that the properties within the District receive approximately equal special benefit from the work and improvements within the DV GHAD. As a result, the DV GHAD assessment is distributed among all property owners within the DV GHAD.

Residential units are assessed on an equal basis. Non-residential units are assessed based on the actual size of the building located on the parcel. For Fiscal Year 2020/21 the assessment amount of \$181.69 per unit for residential and \$0.058 per square foot of non-residential property is proposed in accordance with the updated Reserve Fund Study approved by the Board.

VII. ASSESSMENT ROLL

The following is a summary of information that will be included in the Assessment Roll that because of its length is filed separately with the District Clerk. This information includes the following:

1. Property Description - Assessor Parcel Number
2. FY 2020/21 Assessment Amount

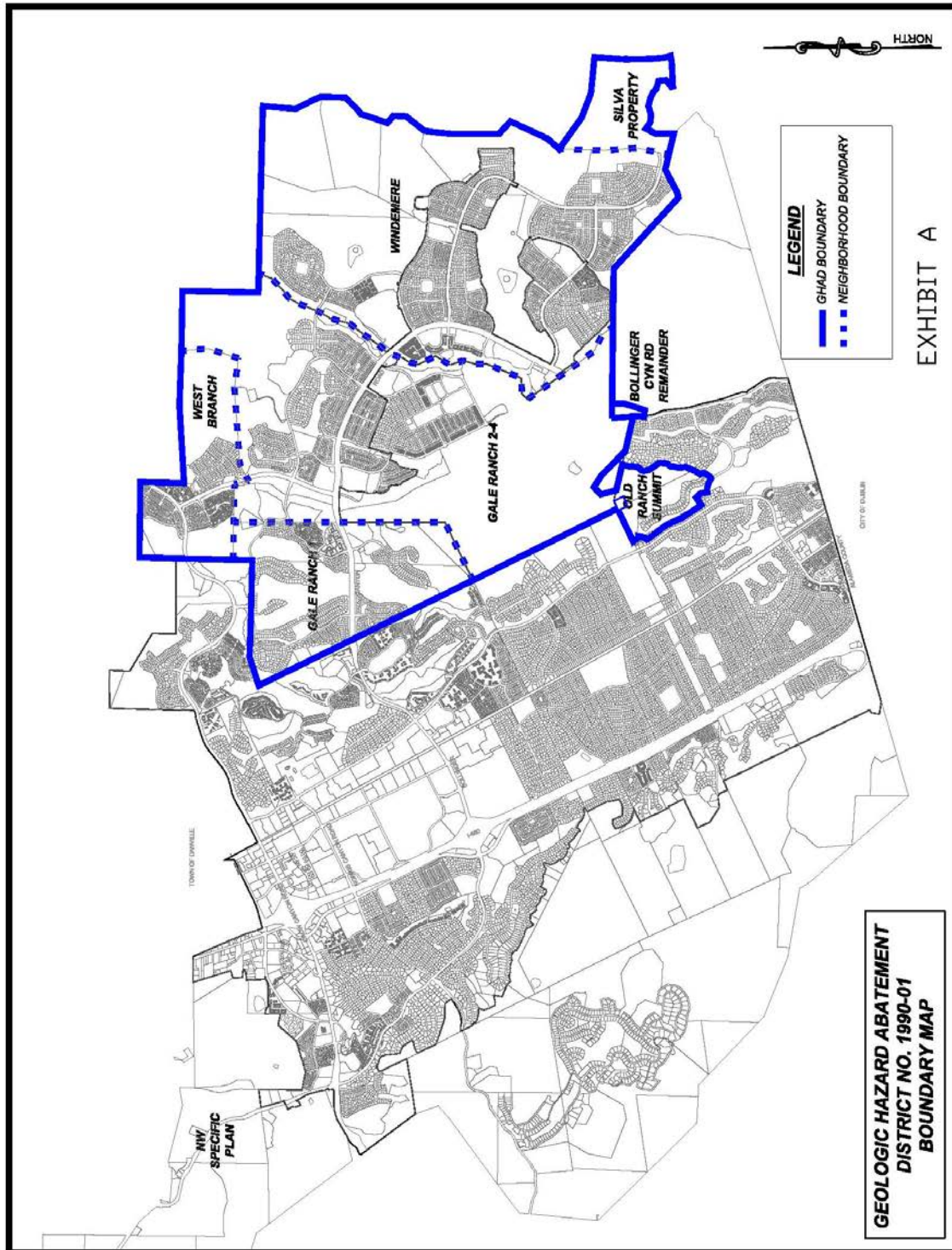
VIII. ASSESSMENT LIMIT - BUDGET PROJECTION

The assessment limit for the entire DV GHAD is \$250 per equivalent residential unit and \$0.10 per square foot for non-residential property. The current budget projection is described in Appendix B and a spreadsheet that projects the revenues and expenditures of the DV GHAD to the year 2058 is included in Appendix C.

APPENDIX A

DOUGHERTY VALLEY

GEOLOGIC HAZARD ABATEMENT DISTRICT NO. 1990-01 DIAGRAM



APPENDIX B

UPDATED BUDGET PROJECTION

Background

The DV GHAD Reserve Fund Study was completed in 2003. The study recommends that the DV GHAD accumulate a Reserve Fund of \$8M (2003 dollars; \$11,082,531 in 2020 dollars) in 40 years. Amongst other factors, the Study assumed the occurrence of significant landslide events costing \$1M (2003 dollars; \$1.5M in 2020 dollars) every 10 years. The Study was also based on the number of assessed units, property values, and geologic risk, as well as assumptions regarding routine maintenance, management and monitoring costs. The recommended reserve amounts would allow the DV GHAD to repair the largest anticipated event within the DV GHAD (at \$8M in 2003 dollars), while still having funds to continue its other maintenance and monitoring functions.

Staff completed its annual review of the current Reserve Fund Study and has incorporated the following revisions, which affect the reserve amounts:

- ◆ Inflation factor – Both the initial and current Study assumed an overall inflation factor of 3%.
- ◆ Return on Investment - The current long term projection has been revised to reflect a 0.5% interest rate for FY 2020/21; interest rates of 0.5% for the rest of the Study due to the very low returns on investment that have been achieved recently. However, it is noted that in Fiscal Year 2018/19 the return on investments was approximately 4.1% compared to the initial reserve.
- ◆ Due to the apparent conservatism in previous analysis, the 10% contingency has been eliminated in the Reserve Fund Study.

The 2003 Study was based in part on an initial assessment rate of \$100 per residential unit and \$0.03 per square foot of non-residential area for FY 2002-2003. The Study also assumed that the assessments would increase at the rate of 1% per year for approximately five years. However, further analysis indicated that if this assessment rate was to continue, the recommended reserve amounts would not be met, creating a Reserve Fund goal shortfall of approximately \$49,701,023 (-\$21,975,693 in 2003 dollars) in 40 years. In order to avoid this, the DV GHAD Board approved an increase of the rate to 4% per year, starting in FY 2006/07, and lasting for approximately 16 years, with a 3% increase in year 17 until 2022/23 at an assessment rate of \$198.76 per residential unit per year and \$0.0636 per square foot of non-residential area. This increase was suspended for one year in FY 2009/10 based on analysis that indicated that due to lower than expected cost; a suspension would still allow the DV GHAD to meet the Reserve Fund goals. At that time, this resulted in a maximum projected per unit assessment rate of \$191.12 and \$0.0611 per square foot non-residential rate in FY 2022/23.

For FY 2019/20, staff recommended maintaining the existing assessment level of \$163.37 per residential unit and a commercial rate of \$0.0523 per square foot. This recommendation was based on analysis that indicated that longer term continued increases in the assessment were likely not

necessary primarily due to maintenance costs being consistently lower than expected and despite the conservative projection on returns on investment.

Current Analysis

Kami Court Landslide

On October 28, 2019, the DV GHAD Board approved \$5M for the repair of a large landslide in the vicinity of Kami Court. Repairs were commenced immediately and are on-going. This landslide is an order of magnitude larger than any previous repairs undertaken by the DV GHAD and had a substantial impact on the DV GHAD's Reserve Fund. Because the DV GHAD Board has previously expressed a desire to maintain a conservative approach with regard to long-term sustainable financing, staff has analyzed the Reserve Fund to determine an appropriate amortization of this cost. The analysis focused on determining the assessment necessary to return the Reserve Fund to previous target levels within 10 years. This analysis indicates that an assessment amount of approximately \$200 per unit for residential and \$0.0640 per square foot for commercial properties will achieve this goal within about ten (10) years while keeping all other assumptions constant. This is a \$36.63 per year increase per residential unit and a \$0.012 per square foot increase for commercial space or an increase of 22.4%. This will result in a revenue increase of approximately \$440,000 per year. [As recommended by the Finance Committee, the Engineer's Report reflects a two-step increase to the \\$200 rate, with the first step being an increase to \\$181.69 per residential unit, and \\$0.058 per square foot for non-residential space. The first step is scheduled for FY 2020/21 with an anticipated 2nd step next year.](#) Further increases can be made in the future up to the maximum of \$250, if needed. The rates can also be reduced or the term of the increased assessment reduced if returns on investment improve or different amortization periods could be used.

Return on Investment

The return on investment that the DV GHAD receives on its reserves plays a major role in the setting of assessment rates and the long term fiscal stability of the DV GHAD. Because the DV GHAD's ability to adjust assessments is capped at \$250 per residential unit, in the long term, the DV GHAD may be partially dependent on returns on investment to finance operations. This could require establishment of a large reserve. However, between 2010 and 2018 returns on investment ranged between about 1.3% and -0.3% and were typically less than inflation. For this reason, the Reserve Fund analysis has in recent years been based on a long term continuation of a low level of returns. However, in FY 2018/2019, the DV GHAD's return on investment was approximately 4.1% as compared to the initial reserve and resulted in a return on investment of \$435,781. If returns on investment of this magnitude are sustainable then it would be possible to reduce the current assessment levels. However, recent economic events suggest that in the near term such returns are unlikely.

Reserve Fund Study

The attached Reserve Fund Study (Appendix C) spreadsheet is based on the analysis described above. A graph is attached to the Study comparing the predicted reserves based on: 1) the original

study; 2) the FY 2019/20 study; and 3) the proposed assessment increase to amortize the recent expenditures.

The 2003 Reserve Fund Study included a line item for major landslide repairs once every 10 years at a cost of \$1M per occurrence. Maintaining the once every 10 year cost associated with a major landslide event caused major spikes in the budget. Beginning in FY 2016/17, the major landslide projected cost, as adjusted for inflation, has been distributed over the 10-year period to represent an annual cost in order to smooth out spikes in the budget.

APPENDIX C
UPDATED RESERVE FUND STUDY

	Actual	Projected	Proposed	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated
Fiscal Year	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29
Cumulative Units	11318	11491	11636	11754	11754	11754	11754	11754	11754	11754	11754
Non-Residential Square Footage	1176817	1176817	1176817	1176817	1176817	1176817	1176817	1176817	1176817	1176817	1176817
Per Unit Assessment Amount	\$163.37	\$163.37	\$181.69	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00	\$200.00
Commercial Assessment Amount	\$0.052	\$0.052	\$0.058	\$0.064	\$0.064	\$0.064	\$0.064	\$0.064	\$0.064	\$0.064	\$0.064
INCOME											
Assessment Income	\$1,910,413	\$1,938,674	\$2,182,400	\$2,426,116	\$2,426,116	\$2,426,116	\$2,426,116	\$2,426,116	\$2,426,116	\$2,426,116	\$2,426,116
Agreement Revenue/FEMA Reimbursement	\$36,332	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685
Development and Building Fees	\$4,080	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000
Earnings	\$435,781	\$59,273	\$71,583	\$81,457	\$93,076	\$104,494	\$115,702	\$126,687	\$137,438	\$147,940	\$158,183
TOTAL INCOME	\$2,386,606	\$2,051,632	\$2,307,669	\$2,561,258	\$2,572,877	\$2,584,296	\$2,595,503	\$2,606,489	\$2,617,239	\$2,627,742	\$2,637,984
PROJECTED EXPENSES											
Staff	\$206,008	\$224,054	\$242,001	\$249,987	\$258,237	\$266,758	\$275,561	\$284,655	\$294,049	\$303,752	\$313,776
GHAD Monitoring Program	\$16,452	\$57,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Creek Bank Maintenance and Sediment Removal (old category)	\$80,000	\$310,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Slope Stabilization	\$0	\$150,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Erosion Protection and Repairs (old category)				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Routine Maintenance & Repair	\$103,671		\$567,725	\$586,460	\$605,813	\$625,805	\$646,456	\$667,790	\$689,827	\$712,591	\$736,106
v-ditch replacement (old category)				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Geotech Instruments	\$52,628	\$7,500		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Revegetation				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Office Space (old category)	\$0			\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Technical Consultants	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
DV Open Space Maintenance	\$0	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Detention Flood Control	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Vehicle Replacement and Maintenance	\$987	\$3,075	\$1,900	\$1,963	\$2,027	\$2,094	\$2,163	\$2,235	\$2,309	\$2,385	\$2,464
GHAD Association and Misc	\$2,599	\$7,190	\$5,360	\$5,537	\$5,720	\$5,908	\$6,103	\$6,305	\$6,513	\$6,728	\$6,950
Office Supplies/Mailings	\$6,169	\$10,000	\$10,000	\$10,330	\$10,671	\$11,023	\$11,387	\$11,763	\$12,151	\$12,552	\$12,966
Professional Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Overhead	\$77,098	\$79,411	\$86,041	\$88,880	\$91,813	\$94,843	\$97,973	\$101,206	\$104,546	\$107,996	\$111,560
Major Repairs	\$0	\$5,000,000	\$160,471	\$165,766	\$171,237	\$176,888	\$182,725	\$188,755	\$194,984	\$201,418	\$208,065
				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
SUBTOTAL EXPENSES	\$545,613	\$5,848,230	\$1,073,498	\$1,108,923	\$1,145,517	\$1,183,320	\$1,222,369	\$1,262,707	\$1,304,377	\$1,347,421	\$1,391,886
RESERVE CONTRIBUTION	\$1,264,432	-\$3,796,598	\$1,234,171	\$1,452,335	\$1,427,359	\$1,400,976	\$1,373,134	\$1,343,781	\$1,312,862	\$1,280,321	\$1,246,098
CUMULATIVE RESERVE FROM AUDIT/PROJECTED	\$12,744,530	\$8,947,932	\$10,182,103	\$11,634,438	\$13,061,797	\$14,462,774	\$15,835,908	\$17,179,689	\$18,492,551	\$19,772,872	\$21,018,970

Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated
2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/37	2037/38	2038/39	2039/40	2040/41	2041/42	2042/43
11754	11754	11754	11754	11754	11754	11754	11754	11754	11754	11754	11754	11754	11754
1176817	1176817	1176817	1176817	1176817	1176817	1176817	1176817	1176817	1176817	1176817	1176817	1176817	1176817
\$200.00	\$163.37	\$163.37	\$163.37	\$163.37	\$163.37	\$163.37	\$163.37	\$163.37	\$163.37	\$163.37	\$163.37	\$163.37	\$163.37
\$0.064	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052
\$2,426,116	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706
\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685
\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000
\$168,152	\$177,833	\$183,657	\$189,135	\$194,252	\$198,991	\$203,336	\$207,270	\$210,773	\$213,828	\$216,416	\$218,516	\$220,107	\$221,169
\$2,647,953	\$2,213,224	\$2,219,047	\$2,224,525	\$2,229,642	\$2,234,382	\$2,238,727	\$2,242,660	\$2,246,164	\$2,249,219	\$2,251,807	\$2,253,906	\$2,255,498	\$2,256,560
\$324,131	\$334,827	\$345,876	\$357,290	\$369,081	\$381,260	\$393,842	\$406,839	\$420,264	\$434,133	\$448,460	\$463,259	\$478,546	\$494,338
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$760,398	\$785,491	\$811,412	\$838,189	\$865,849	\$894,422	\$923,938	\$954,428	\$985,924	\$1,018,460	\$1,052,069	\$1,086,787	\$1,122,651	\$1,159,698
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$2,545	\$2,629	\$2,716	\$2,805	\$2,898	\$2,993	\$3,092	\$3,194	\$3,300	\$3,408	\$3,521	\$3,637	\$3,757	\$3,881
\$7,179	\$7,416	\$7,661	\$7,914	\$8,175	\$8,444	\$8,723	\$9,011	\$9,308	\$9,615	\$9,933	\$10,261	\$10,599	\$10,949
\$13,394	\$13,836	\$14,292	\$14,764	\$15,251	\$15,754	\$16,274	\$16,811	\$17,366	\$17,939	\$18,531	\$19,143	\$19,775	\$20,427
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$115,241	\$119,044	\$122,972	\$127,030	\$131,222	\$135,553	\$140,026	\$144,647	\$149,420	\$154,351	\$159,445	\$164,706	\$170,142	\$175,756
\$214,931	\$222,024	\$229,351	\$236,919	\$244,737	\$252,814	\$261,157	\$269,775	\$278,677	\$287,874	\$297,374	\$307,187	\$317,324	\$327,796
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$1,437,818	\$1,485,266	\$1,534,280	\$1,584,911	\$1,637,213	\$1,691,241	\$1,747,052	\$1,804,705	\$1,864,260	\$1,925,781	\$1,989,332	\$2,054,980	\$2,122,794	\$2,192,846
\$1,210,135	\$727,957	\$684,767	\$639,614	\$592,429	\$543,140	\$491,675	\$437,955	\$381,904	\$323,438	\$262,475	\$198,927	\$132,704	\$63,713
\$22,229,105	\$22,957,063	\$23,641,830	\$24,281,444	\$24,873,873	\$25,417,014	\$25,908,688	\$26,346,644	\$26,728,547	\$27,051,986	\$27,314,461	\$27,513,388	\$27,646,092	\$27,709,805

Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated	Estimated
2043/44	2044/45	2045/46	2046/47	2047/48	2048/49	2049/50	2050/51	2051/52	2052/53	2053/54	2054/55	2055/56	2056/57
11754	11754	11754	11754	11754	11754	11754	11754	11754	11754	11754	11754	11754	11754
1176817	1176817	1176817	1176817	1176817	1176817	1176817	1176817	1176817	1176817	1176817	1176817	1176817	1176817
\$163.37	\$163.37	\$163.37	\$163.37	\$163.37	\$163.37	\$163.37	\$163.37	\$163.37	\$163.37	\$163.37	\$163.37	\$163.37	\$163.37
\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052	\$0.052
\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706	\$1,981,706
\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685	\$47,685
\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000
\$221,678	\$221,613	\$220,950	\$219,663	\$217,728	\$215,118	\$211,806	\$207,765	\$202,964	\$197,375	\$190,965	\$183,703	\$175,556	\$166,488
\$2,257,069	\$2,257,004	\$2,256,340	\$2,255,054	\$2,253,119	\$2,250,509	\$2,247,197	\$2,243,156	\$2,238,355	\$2,232,765	\$2,226,356	\$2,219,094	\$2,210,947	\$2,201,879
\$510,651	\$527,503	\$544,911	\$562,893	\$581,468	\$600,656	\$620,478	\$640,954	\$662,105	\$683,955	\$706,525	\$729,841	\$753,925	\$778,805
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$1,197,969	\$1,237,502	\$1,278,339	\$1,320,524	\$1,364,102	\$1,409,117	\$1,455,618	\$1,503,653	\$1,553,274	\$1,604,532	\$1,657,481	\$1,712,178	\$1,768,680	\$1,827,046
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$4,009	\$4,142	\$4,278	\$4,419	\$4,565	\$4,716	\$4,872	\$5,032	\$5,198	\$5,370	\$5,547	\$5,730	\$5,919	\$6,115
\$11,310	\$11,683	\$12,069	\$12,467	\$12,879	\$13,304	\$13,743	\$14,196	\$14,665	\$15,149	\$15,649	\$16,165	\$16,698	\$17,249
\$21,101	\$21,798	\$22,517	\$23,260	\$24,028	\$24,820	\$25,639	\$26,486	\$27,360	\$28,262	\$29,195	\$30,159	\$31,154	\$32,182
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$181,556	\$187,548	\$193,737	\$200,130	\$206,734	\$213,557	\$220,604	\$227,884	\$235,404	\$243,172	\$251,197	\$259,487	\$268,050	\$276,895
\$338,613	\$349,787	\$361,330	\$373,254	\$385,571	\$398,295	\$411,439	\$425,017	\$439,042	\$453,531	\$468,497	\$483,957	\$499,928	\$516,426
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$2,265,210	\$2,339,962	\$2,417,181	\$2,496,948	\$2,579,347	\$2,664,465	\$2,752,393	\$2,843,222	\$2,937,048	\$3,033,971	\$3,134,092	\$3,237,517	\$3,344,355	\$3,454,718
-\$8,141	-\$82,958	-\$160,840	-\$241,894	-\$326,228	-\$413,957	-\$505,196	-\$600,066	-\$698,693	-\$801,205	-\$907,736	-\$1,018,423	-\$1,133,408	-\$1,252,839
\$27,701,664	\$27,618,707	\$27,457,866	\$27,215,972	\$26,889,744	\$26,475,787	\$25,970,592	\$25,370,526	\$24,671,833	\$23,870,627	\$22,962,892	\$21,944,469	\$20,811,061	\$19,558,222

APPENDIX D
DV GHAD RESERVE FUND ANALYSIS

\$200 assessment for 10 years w ramp up

