REFUNDING REPORT UPDATE

SR-006
CRYSTAL RIDGE WATER SYSTEM IMPROVEMENTS

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INTRODUCTION

Crystal Ridge is a master planned community comprised of 300 single-family residential units, located on approximately 640 acres in the City of Henderson, Clark County, Nevada as depicted on Exhibit 1. Crystal Ridge is located in portions of Section 33, Township 22 South, and Range 62 East M.D.M.

The City of Henderson adopted Ordinance No. 1440 (Special Refunding and Sewer Infrastructure) at the October 19, 1993, City Council meeting, which is now codified under Henderson Municipal Code ("H.M.C.") 14.16 created a mechanism for refunding costs associated with the design and construction of major backbone water and sewer infrastructure. Staff recommended to Council, and Council determined that this mechanism was necessary to help provide a funding source for the orderly design and construction of infrastructure for large undeveloped areas involving numerous developers. This ordinance allows the City to partner with private developers and participate in the design and construction of facilities at projected ultimate demand. The Ordinance outlines in general terms the conditions and requirements for refunding to developers/landowners and/or the City for the construction of water and sewer backbone infrastructure. One condition of the Ordinance requires that each Special Refunding Area have a Refunding Report submitted to the Council by the Director of Utility Services for approval. The Refunding Report must define the boundary of the Special Refunding Area, type and route of backbone structure to be included, methods of cost sharing, refunding amounts, depreciation schedules and any other information required by Council. This ordinance is not an assessment district. It is a precedent of things to come as developers/landowners and/or the City build infrastructure at a size and capacity well in excess of their needs. The developer/City building the oversized facilities will be eligible for refunding subsequent to City acceptance of the constructed facilities and when additional developers/landowners utilize these facilities.

PURPOSE

This Refunding Report will establish the general methodology with which to equitably allocate the refunding costs for the potable water infrastructure for the Special Refunding Area known as "SR-006 Crystal Ridge Water System Improvements." The amounts eligible for refunding will be determined and collected according to the methodology developed by this report. Upon City Council approval of this Refunding Report and Completion of a final audit, a Special Refunding Agreement will be drafted between the City of Henderson and Crystal Ridge for the facilities discussed in this report. The agreement will then identify the cost of the work to be included in the special refunding area.

This Refunding Report will outline the procedures that will enable Crystal Ridge to front the costs of building water infrastructure needed to serve the area as projected by the current utility master plan for the 2630, 2800 and 3220 water pressure zones at a size and capacity in excess of its needs and sets in motion the mechanism to collect costs from other users utilize these facilities. The method used must be fair and equitable to share in the cost of the infrastructure based on the proportionate benefit of that improvement.

The water infrastructure refunding will generally allocate costs based upon the following concepts:

1. Cost of infrastructure necessary to bring supply to the refunding area will be allocated equally to all potential users based upon an Equivalent Development Unit (EDU) for unit duties and EDU's for Water Resource Planning (See Table 1).

2. Cost of infrastructure required for storage within the 3220 water pressure zones will be equally distributed to all potential users within the zone based on Equivalent Development Unit (EDU) and EDU's for Water Resource Planning (See Table 2).

3. Cost of facilities required for pressure reduction will be equally distributed to all potential users within the zone based on Equivalent Development Units (EDU) and EDU's for Water Resource Planning (see Table 3).

4. Refunding area is analyzed and ultimate build out demands estimated. Demand is allocated to the distinct pressure zone and backbone facilities. The zone is then reduced to the number of EDU's of demand within the zone. Property within the zone not included in this report would be charged the refunding amount per

EDU at time of approval of final map or improvement drawings, whichever occurs first. Funds collected from these users are refunded back to the developer that constructed the facility upon City acceptance of the constructed facilities.

5. The City of Henderson collects the total refunding amount from other developers, as stated above and refunds to Crystal Ridge in accordance with H.M.C. 14.16. The total facility cost will be indexed to reflect inflation. The depreciation schedule will be based on the following replacement schedule for the facilities as listed below:

Pumping Stations	25 years
Reservoirs	25 years
Pressure Reducing Stations	25 years
Pipeline	50 years

Total facility cost will be grouped into the following three categories:

1. Construction cost

2. Pre-design and design cost

3. Related costs (Plan checking, construction management and administration, City inspection fees, tortoise surveys, legal costs, financial costs, performance bonds, processing fees).

The City Council and the Director of Utility Services have determined that categories two and three combined shall not exceed 24% of the construction costs. Each category shall not exceed 10% and 14% respectively. The values in the subsequent tables are all within the percentages shown here. All projects will be reviewed and approved by the City prior to advertising and awarding a project for construction.

SPECIAL REFUNDING AREA

Site Location

The Special Refunding Area for SR-006 Crystal Ridge Water System Improvements is located in the southern section of the City of Henderson, more particularly described as a parcel in Township 22 South, Range 62 East, MDM, Clark County, Nevada. The Special Refunding Area for the Crystal Ridge Water System Improvements is depicted on Exhibit 3.

Proposed Facilities

The Crystal Ridge Water System Improvements consist of the addition of two (2) new packaged pumping systems, P-13B and P-31 Pumping Stations, approximately 8,900 feet of transmission main, two (2) new above grade prestressed-concrete reservoirs, R-31 and R-32 Reservoirs, and four (4) Pressure Reducing Stations, PRV-113 to PRV-116 (See Exhibit 2). The prorated share of each facility for each developer was determined based on the methods established in the previous section of this report. The breakdown of percent share of each developer at build-out condition for the various facilities in the Special Refunding Area is included in Tables 1 to 3.

The major water infrastructure integral to the special refunding area are the following:

1. **P-13B Pumping Station** – The P-13B pumping station consists of a packaged pump system, which will be added within the existing P-13 pumping station building. This facility is sized with a capacity of 790 gpm at a TDH of 474 ft. The facility was sized to meet the maximum day demands for all development in the special refunding area. Of the total required pumping capacity, 71% (561 gpm) will be used by Crystal Ridge, with the remaining 29% (229 gpm) serving other developments in the special refunding area. The total estimated project cost for this pumping station is $1,336,968 with 71% of the contribution being designated to LID T-21 and the additional 29% as part of this Update for the Refunding Agreement for Crystal Ridge SR-006.

   Total Refunding Amount $387,721

2. **P-13B/R-31 Transmission Pipeline** – This pipeline will be utilized for transmission from the P-13B Pumping Station to the R-31 Reservoir. Construction of this pipeline consists of approximately 3,290 feet of 10-inch ductile iron pipe and approximately 1,740 feet of 12-inch ductile iron pipe. All ductile iron pipe will be cement lined and polyethylene wrapped. Included costs reflect the total costs for the associated grading, access road improvements, and

retaining walls necessary for the construction of the pipeline. Of the total requirement, 71% will be used by Crystal Ridge, with the remaining 29% serving other developments in the special refunding area. The total estimated project cost for this transmission pipeline is $1,860,000 with 71% of the contribution being designated to LID T-21 and the additional 29% as part of this Update for the Refunding Agreement for Crystal Ridge SR-006.

Total Refunding Amount $539,400

3. **R-31 Reservoir** – This reservoir is located within the Crystal Ridge development. Construction of this reservoir consists of an above-grade 47,400-gallon pre-stressed concrete tank and associated piping and valving, electrical, civil improvements, disinfection facilities, over excavating and blasting, site grading, dust control, soil testing, engineering and surveying, permits, and fees. The R-31 Reservoir will be used as an intermediate tank to pump from the 2370 zone to the 3220 zone. There will not be any domestic or fire storage in this tank. The users of the Crystal Ridge Water System Improvements will share the cost of this facility. Of the total required capacity, 71% will be used by Crystal Ridge, with the remaining 29% serving other developments in the special refunding area. The total estimated project cost for this reservoir is $1,680,200 with 71% of the contribution being designated to LID T-21 and the additional 29% as part of this Update for the Refunding Agreement for Crystal Ridge SR-006.

Total Refunding Amount $487,258

4. **P-31 Pumping Station** – The P-31 pumping station consists of a packaged pump system located on the proposed P-31/R-31 Site. This facility is sized with a capacity of 790 gpm at a TDH of 472 ft. The facility was sized to meet the maximum day demands for all development in the special refunding area. Of the total required pumping capacity, 71% (561 gpm) will be used by Crystal Ridge, with the remaining 29% (229 gpm) serving other developments in the special refunding area. The total estimated project cost for this pumping station is $1,438,400 with 71% of the contribution being designated to LID T-21 and the additional 29% as part of this Update for the Refunding Agreement for Crystal Ridge SR-006.

Total Refunding Amount $417,136

5. **P-31/R-32 Transmission Pipeline** – This pipeline will be utilized for transmission from the P-31 Pumping Station to the R-32 Reservoir. Construction of this

pipeline consists of approximately 4,960 feet of 10-inch ductile iron pipe. All ductile iron pipe will be cement lined and polyethylene wrapped. Included costs reflect the total costs for the associated grading, blasting, and access road improvements necessary for the construction of the pipeline. Of the total requirement, 71% will be used by Crystal Ridge, with the remaining 29% serving other developments in the special refunding area. The total estimated project cost for this transmission pipeline is $1,044,080 with 71% of the contribution being designated to LID T-21 and the additional 29% as part of this Update for the Refunding Agreement for Crystal Ridge SR-006.

Total Refunding Amount $302,783

6. **R-32 Reservoir** – This reservoir is located within the Crystal Ridge development. Construction of this reservoir consists of an above-grade 354,000-gallon pre-stressed concrete tank and associated piping and valving, electrical, civil improvements, over excavating and blasting, site grading, dust control, soil testing, engineering and surveying, permits, and fees. The users of the Crystal Ridge Water System Improvements will share the cost of this facility. Of the total required storage capacity, 71% will be used by Crystal Ridge, with the remaining 29% serving other developments in the special refunding area. The total estimated project cost for this reservoir is $1,775,680 with 71% of the contribution being designated to LID T-21 and the additional 29% as part of this Update for the Refunding Agreement for Crystal Ridge SR-006.

Total Refunding Amount $514,947

7. **PRV-113** – This pressure reducing station including piping, fittings, electrical, trenching, backfill, testing, engineering and surveying, permits, and fees will serve development in the 3060 Zone and everyone downstream. The users of the 3060, 2985, 2800, and 2630 Zones within the refunding area will share the cost of this facility. Of the total required flow capacity, 68% will be used by Crystal Ridge, with the remaining 32% serving other developments in the special refunding area. The total estimated project cost for this PRV is $174,704 with 68% of the contribution being designated to LID T-21 and the additional 32% as part of this Update for the Refunding Agreement for Crystal Ridge SR-006.

Total Refunding Amount $55,905

8. **PRV-114** – This pressure reducing station including piping, fittings, electrical, trenching, backfill, testing, engineering and surveying, permits, and fees will

serve development in the 2985 Zone and everyone downstream. The users of the 2985, 2800, and 2630 Zones within the refunding area will share the cost of this facility. Of the total required flow capacity, 64% will be used by Crystal Ridge, with the remaining 36% serving other developments in the special refunding area. The total estimated project cost for this PRV is $162,130 with 64% of the contribution being designated to LID T-21 and the additional 36% as part of this Update for the Refunding Agreement for Crystal Ridge SR-006.

Total Refunding Amount $58,367

9. **PRV-115** – This pressure reducing station including piping, fittings, electrical, trenching, backfill, testing, engineering and surveying, permits, and fees will serve development in the 2800 Zone and 2630 Zone. The users of the 2800 and 2630 Zones within the refunding area will share the cost of this facility. Of the total required flow capacity, 59% will be used by Crystal Ridge, with the remaining 41% serving other developments in the special refunding area. The total estimated project cost for this PRV is $162,043 with 59% of the contribution being designated to LID T-21 and the additional 41% as part of this Update for the Refunding Agreement for Crystal Ridge SR-006.

Total Refunding Amount $66,438

10. **PRV-116** – This pressure reducing station including piping, fittings, electrical, trenching, backfill, testing, engineering and surveying, permits, and fees will serve development in the 2630 Zone. The users of the 2630 Zone within the refunding area will share the cost of this facility. Of the total required flow capacity, 86% will be used by Crystal Ridge, with the remaining 14% serving other developments in the special refunding area. The total estimated project cost for this PRV is $149,060 with 86% of the contribution being designated to LID T-21 and the additional 14% as part of this Update for the Refunding Agreement for Crystal Ridge SR-006.

Total Refunding Amount $20,868

REFUNDING PROGRAM

The refunding program for calculating the percent of the cost to be refunded back to Crystal Ridge is determined based on the Equivalent Dwelling Units (EDU's) being served by the system in each development. Refunding and cost sharing will be based on the percent contribution each development has to the total demand in the system (see Tables 1 to 3).

These values will be used to allocate costs for the facilities discussed in the previous section for the potable water system. To calculate the proportionate share, the total number of EDU's must be allocated to the entire contribution area. Crystal Ridge and the City have determined that water system infrastructure cost allocations would be equitable based on the following:

- Pumping Station – The ratio of the user's number of EDU's (or maximum day demands) to the total number of EDU's (or maximum day demands) for which the Pumping Station was designed. See Table 1.
- Transmission Pipe – The ratio of the user's number of EDU's (or maximum day demands) to the total number of EDU's (or maximum day demands) for which the Transmission Pipe was designed. See Table 1.
- Reservoirs - The ratio of the user's number of EDU's to the total number of EDU's being supplied by the reservoir. See Table 2.
- Pressure Reducing Stations - The ratio of the user's number of EDU's to the total number of EDU's being supplied by the prv's. See Table 3.

Table 4 illustrates the estimated capital costs for the proposed facilities in this Refunding report. Table 5 depicts an itemized breakdown of construction cost for the facilities addressed in this report. Table 6 addresses the cost attributable to each development based on the percent usage. Table 7 summarizes the proportionate cost share per EDU for proposed users of these facilities.

SUMMARY OF REFUND

The City collects fees from other developers at the time their first connection (approval of plans) is made to the system. Funds collected from other developers are refunded to Crystal Ridge who installed the facility(ies) in accordance with Henderson Municipal Code (H.M.C.) 14.16. Additionally, all costs are indexed and facilities depreciated in accordance with H.M.C. 14.16.

These costs would be in addition to any system development fees and other connection charges levied by the City in the course of normal development. There may also be additional refunding charges collected by other parties who have constructed localized water and/or sewer lines if connection is made to those lines to complete a developer's system.

TABLE 1
CRYSTAL RIDGE
WATER SYSTEM IMPROVEMENTS
REFUNDING REPORT

P-13B AND P-31 PUMPING STATIONS AND TRANSMISSION PIPELINE PRORATA CAPACITY SHARE BY EDU'S

Development	Zoning	Dwelling Units or Acreage	EDU Factor	Total EDU's	Prorated Share of Required Pumping	Avg. Day Demand Mult. Factor x EDU's	Avg. Day Demand (gpm)	Max Day Demand [1] Mult. Factor x Avg. Day	Max Day Demand [1] (gpm)
Crystal Ridge						0.5332			
Crystal Ridge (all pressure zones)	RS-2	300 DU's	1.50	450		0.5332	239.9	1.75	419.9
	Park	6 AC	8.14	49		0.5332	26.0	1.75	45.6
Total Crystal Ridge				**499**	71%		266.0		465.5
Other Dev. in Special Refunding Area									
The Foothills	RS-2	110 DU's	1.50	165		0.5332	88.0	1.75	154.0
The Canyons (Parcel G)	RS-2	18 DU's	1.50	27		0.5332	14.4	1.75	25.2
Obsidian Mountain/Triple Five	RS-2	9 DU's	1.50	14		0.5332	7.2	1.75	12.6
Total Others				**206**	29%		109.6		191.8
Total (All Users)				**705**	**100%**		**375.6**		**657.2**

[1] Based on COH criteria, pumping stations are sized to deliver maximum day demands.

TABLE 2
CRYSTAL RIDGE
WATER SYSTEM IMPROVEMENTS
REFUNDING REPORT

R-31 AND R-32 RESERVOIRS PRORATA CAPACITY SHARE BY EDU'S

Development	Zoning	Dwelling Units or Acreage	EDU Factor	Total EDU's	Prorated Share of Required Storage	Avg. Day Demand Mult. Factor x EDU's	Avg. Day Demand (gpm)	Max Day Demand Mult. Factor x Avg. Day	Max Day Demand (gpm)
Crystal Ridge						0.5332			
Crystal Ridge (all pressure zones)	RS-2	300 DU's	1.50	450		0.5332	239.9	1.75	419.9
	Park	6 AC	8.14	49		0.5332	26.0	1.75	45.6
Total Crystal Ridge				**499**	71%		266.0		465.5
Other Dev. In Special Refunding Area									
The Foothills	RS-2	110 DU's	1.50	165		0.5332	88.0	1.75	154.0
The Canyons (Parcel G)	RS-2	18 DU's	1.50	27		0.5332	14.4	1.75	25.2
Obsidian Mountain/Triple Five	RS-2	9 DU's	1.50	14		0.5332	7.2	1.75	12.6
Total Others				**206**	29%		109.6		191.8
Total (All Users)				**705**	**100%**		**375.6**		**657.2**

TABLE 3
CRYSTAL RIDGE
WATER SYSTEM IMPROVEMENTS
REFUNDING REPORT

PRV's 113 to 116 PRORATA CAPACITY SHARE BY EDU'S

Development	Zoning	Dwelling Units or Acreage	EDU Factor	Total EDU's	Prorated Share of Required Storage	Avg. Day Demand Mult. Factor x EDU's	Avg. Day Demand (gpm)	Max Day Demand Mult. Factor x Avg. Day	Max Day Demand (gpm)
PRV-113									
Crystal Ridge									
3060 Zone	RS-2	44 DU's	1.50	66		0.5332	35.2	1.75	61.6
2985 Zone	RS-2	44 DU's	1.50	66		0.5332	35.2	1.75	61.6
2800 Zone	RS-2	113 DU's	1.50	170		0.5332	90.4	1.75	158.2
2630 Zone	RS-2	22 DU's	1.50	33		0.5332	17.6	1.75	30.8
	Park	6 AC	8.14	49		0.5332	26.0	1.75	45.6
Total Crystal Ridge				**384**	68%		204.4		357.7
Other Dev. In Special Refunding Area									
The Foothills	RS-2	110 DU's	1.50	165		0.5332	88.0	1.75	154.0
Obsidian Mountain/Triple Five	RS-2	9 DU's	1.50	14		0.5332	7.2	1.75	12.6
Total Others				**179**	32%		95.2		166.6
Total (All Users)				**563**	**100%**		**299.6**		**524.3**

TABLE 3 cont.
CRYSTAL RIDGE
WATER SYSTEM IMPROVEMENTS
REFUNDING REPORT

PRV's 113 to 116 PRORATA CAPACITY SHARE BY EDU'S

Development	Zoning	Dwelling Units or Acreage	EDU Factor	Total EDU's	Prorated Share of Required Storage	Avg. Day Demand Mult. Factor x EDU's	Avg. Day Demand (gpm)	Max Day Demand Mult. Factor x Avg. Day	Max Day Demand (gpm)
PRV-114									
Crystal Ridge									
2985 Zone	RS-2	44 DU's	1.50	66		0.5332	35.2	1.75	61.6
2800 Zone	RS-2	113 DU's	1.50	170		0.5332	90.4	1.75	158.2
2630 Zone	RS-2	22 DU's	1.50	33		0.5332	17.6	1.75	30.8
	Park	6 AC	8.14	49		0.5332	26.0	1.75	45.6
Total Crystal Ridge				**318**	64%		169.2		296.1
Other Dev. in Special Refunding Area									
The Foothills	RS-2	110 DU's	1.50	165		0.5332	88.0	1.75	154.0
Obsidian Mountain/Triple Five	RS-2	9 DU's	1.50	14		0.5332	7.2	1.75	12.6
Total Others				**179**	36%		95.2		166.6
Total (All Users)				**497**	**100%**		**264.4**		**462.7**

TABLE 3 cont.
CRYSTAL RIDGE
WATER SYSTEM IMPROVEMENTS
REFUNDING REPORT

PRV's 113 to 116 PRORATA CAPACITY SHARE BY EDU'S

Development	Zoning	Dwelling Units or Acreage	EDU Factor	Total EDU's	Prorated Share of Required Storage	Avg. Day Demand Mult. Factor x EDU's	Avg. Day Demand (gpm)	Max Day Demand Mult. Factor x Avg. Day	Max Day Demand (gpm)
PRV-115									
Crystal Ridge									
2800 Zone	RS-2	113 DU's	1.50	170		0.5332	90.4	1.75	158.2
2630 Zone	RS-2	22 DU's	1.50	33		0.5332	17.6	1.75	30.8
	Park	6 AC	8.14	49		0.5332	26.0	1.75	45.6
Total Crystal Ridge				**252**	59%		134.0		234.5
Other Dev. In Special Refunding Area									
The Foothills	RS-2	110 DU's	1.50	165		0.5332	88.0	1.75	154.0
Obsidian Mountain/Triple Five	RS-2	9 DU's	1.50	14		0.5332	7.2	1.75	12.6
Total Others				**179**	41%		95.2		166.6
Total (All Users)				**431**	**100%**		**229.2**		**401.1**

TABLE 3 cont.
CRYSTAL RIDGE
WATER SYSTEM IMPROVEMENTS
REFUNDING REPORT

PRV's 113 to 116 PRORATA CAPACITY SHARE BY EDU'S

Development	Zoning	Dwelling Units or Acreage	EDU Factor	Total EDU's	Prorated Share of Required Storage	Avg. Day Demand Mult. Factor x EDU's	Avg. Day Demand (gpm)	Max Day Demand Mult. Factor x Avg. Day	Max Day Demand (gpm)
PRV-116									
Crystal Ridge									
2630 Zone	RS-2	22 DU's	1.50	33		0.5332	17.6	1.75	30.8
	Park	6 AC	8.14	49		0.5332	26.0	1.75	45.6
Total Crystal Ridge				**82**	86%		43.6		76.4
Other Dev. in Special Refunding Area									
Obsidian Mountain/Triple Five	RS-2	9 DU's	1.50	14		0.5332	7.2	1.75	12.6
Total Others				**14**	14%		7.2		12.6
Total (All Users)				**96**	**100%**		**50.8**		**89.0**

TABLE 4
CRYSTAL RIDGE
WATER SYSTEM IMPROVEMENTS
REFUNDING REPORT

ESTIMATED CAPITAL COST [1]

Item/ Reach No.	Description	Quantity	Unit Cost	Estimated Construction Cost	Estimated Design Cost	Estimated Related Cost [2]	Estimated Total Capital Cost
1	P-13B Pumping Station	1	Lump Sum	$1,078,200	$107,820	$150,948	$1,336,968
2	P-13B/R-31 Transmission Pipeline	1	Lump Sum	$1,500,000	$150,000	$210,000	$1,860,000
3	R-31 Reservoir	1	Lump Sum	$1,355,000	$135,500	$189,700	$1,680,200
4	P-31 Pumping Station	1	Lump Sum	$1,160,000	$116,000	$162,400	$1,438,400
5	P-31/R-32 Transmission Pipeline	1	Lump Sum	$842,000	$84,200	$117,880	$1,044,080
6	R-32 Reservoir	1	Lump Sum	$1,432,000	$143,200	$200,480	$1,775,680
7	PRV-113	1	Lump Sum	$140,890	$14,089	$19,725	$174,704
8	PRV-114	1	Lump Sum	$130,750	$13,075	$18,305	$162,130
9	PRV-115	1	Lump Sum	$130,680	$13,068	$18,295	$162,043
10	PRV-116	1	Lump Sum	$120,210	$12,021	$16,829	$149,060
Total Estimated Cost				**$7,889,730**	**$788,973**	**$1,104,562**	**$9,783,265**

[1] See detailed breakdown of cost on Table 5.
[2] Includes plan checking, construction management and administration, city inspection fees, tortoise survey, legal costs, financial costs, performance bonds, processing fees.

TABLE 5
CRYSTAL RIDGE
WATER SYSTEM IMPROVEMENTS
REFUNDING REPORT

PRELIMINARY CONSTRUCTION COST ESTIMATE

Item	Description	Estimated Construction Cost	
P-13B Pumping Station Package:			
	EFI Pump Skid	$908,210	From EFI
	- Pumping Equipment		
	- Motor Control Center		
	- Telemetry		
	Pump Building	$15,000	
	Site Improvements - Civil	$10,000	
	Miscellaneous Piping and Valving	$50,000	
	Miscellaneous Electrical	$30,000	
	Off-site Electrical	$65,000	
Total Pumping Station		$1,078,200	
P-13B/R-31 Transmission Pipeline			
	12" Transmission (1,740 LF)	$185,000	
	10" Transmission (3,290 LF)	$300,000	
	Access Road in wash	$415,000	
	Access Road Next to Slope	$80,000	
	Retaining Walls	$520,000	
Total Pipeline		$1,500,000	
R-31 Reservoir			
	Reservoir Construction	$450,000	From DYK
	Disinfection Facilities	$160,000	
	Site Improvements - Civil	$80,000	
	Over excavating and blasting	$600,000	
	Miscellaneous Electrical	$20,000	
	Miscellaneous Piping and Valving	$45,000	
Total R-31 Reservoir		$1,355,000	
P-31 Pumping Station Package:			
	EFI Pump Skid	$950,000	From EFI
	- Pumping Equipment		
	- Motor Control Center		
	- Telemetry		
	Pump Building	$50,000	
	Site Improvements - Civil	$60,000	
	Miscellaneous Piping and Valving	$40,000	
	Miscellaneous Electrical	$60,000	
Total Pumping Station		$1,160,000	
P-31/R-32 Transmission Pipeline			
	10" Transmission (4,960 LF)	$437,000	
	Access Road Next to Slope Grading	$30,000	
	Access Road Overex. and Blasting	$300,000	
	Access Road Trenching	$75,000	
Total Pipeline		$842,000	

TABLE 5
CRYSTAL RIDGE
WATER SYSTEM IMPROVEMENTS
REFUNDING REPORT

PRELIMINARY CONSTRUCTION COST ESTIMATE

Item	Description	Estimated Construction Cost	
R-32 Reservoir			
	Reservoir Construction	$730,000	From DYK
	Site Improvements - Civil	$78,000	
	Over excavating and blasting	$550,000	
	Miscellaneous Electrical	$26,000	
	Miscellaneous Piping and Valving	$48,000	
Total R-32 Reservoir		$1,432,000	
PRV-113			
	PRV Vault	$135,890	From EFI
	Installation	$5,000	
Total PRV-113		$140,890	
PRV-114			
	PRV Vault	$125,750	From EFI
	Installation	$5,000	
Total PRV-114		$130,750	
PRV-115			
	PRV Vault	$125,680	From EFI
	Installation	$5,000	
Total PRV-113		$130,680	
PRV-116			
	PRV Vault	$115,210	From EFI
	Installation	$5,000	
Total PRV-114		$120,210	
Total Infrastructure Construction Cost		**$7,889,730**	

TABLE 6
CRYSTAL RIDGE
WATER SYSTEM IMPROVEMENTS
REFUNDING REPORT

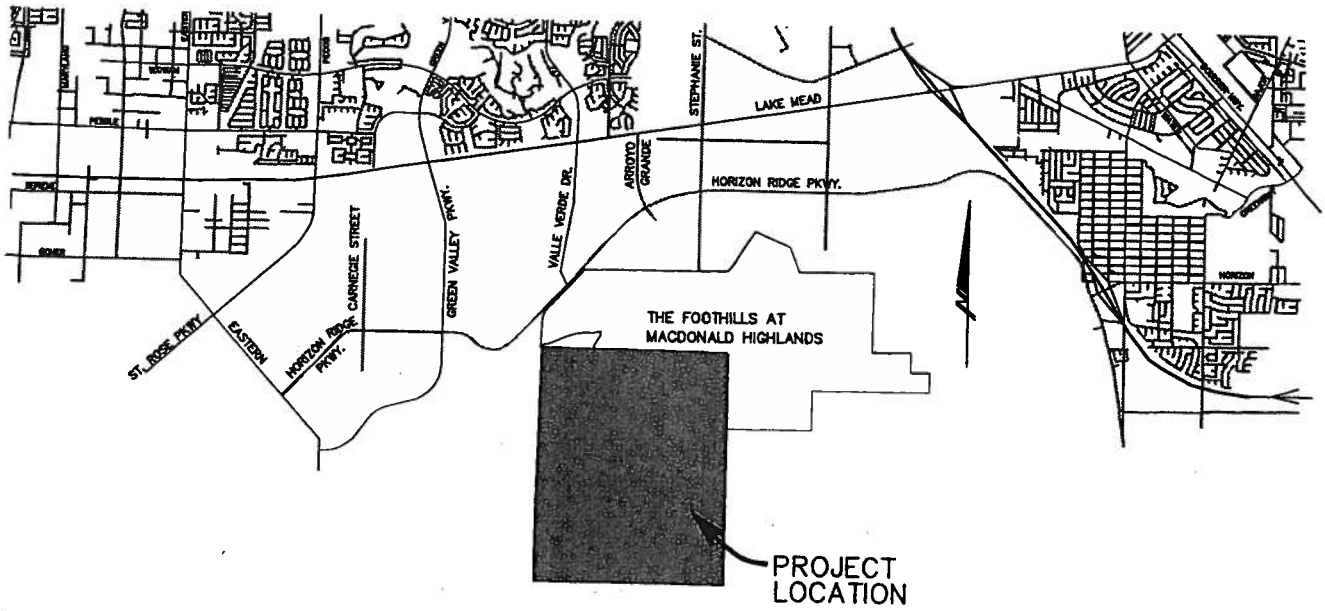
ESTIMATED COST SHARE BASED ON PERCENT USAGE

Developer Project Constructed	Estimated Total Capital Cost	Crystal Ridge			Other Developments		
		EDU'S	Percent Use	Cost Contribution	EDU'S	Percent Use	Cost Contribution
P-13B Pumping Station	$1,336,968	499	71%	$949,247	206	29%	$387,721
P-13B/R-31 Transmission Pipeline	$1,860,000	499	71%	$1,320,600	206	29%	$539,400
R-31 Reservoir	$1,680,200	499	71%	$1,192,942	206	29%	$487,258
P-31 Pumping Station	$1,438,400	499	71%	$1,021,264	206	29%	$417,136
P-31/R-32 Transmission Pipeline	$1,044,080	499	71%	$741,297	206	29%	$302,783
R-32 Reservoir	$1,775,680	499	71%	$1,260,733	206	29%	$514,947
PRV-113	$174,704	384	68%	$118,799	179	32%	$55,905
PRV-114	$162,130	318	64%	$103,763	179	36%	$58,367
PRV-115	$162,043	252	59%	$95,605	179	41%	$66,438
PRV-116	$149,060	82	86%	$128,192	14	14%	$20,868
Totals	**$9,783,265**			**$6,932,442**			**$2,850,823**

TABLE 7

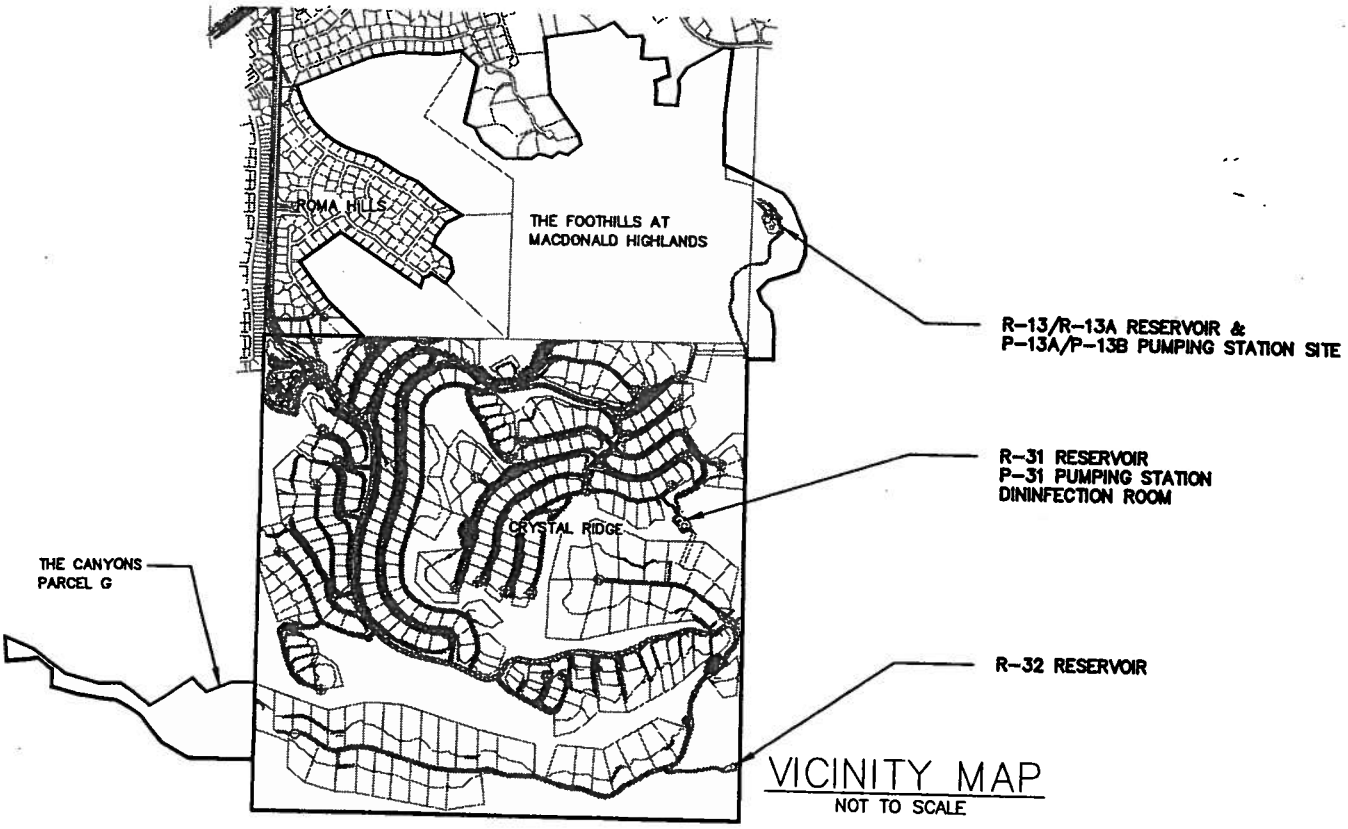
Equivalent Dwelling Unit (EDU) Cost Share Summary
Crystal Ridge Water System Improvements

DEVELOPER PROJECTS CONSTRUCTED:	COST	COST SHARE PER EDU IN SPECIAL REFUNDING AREA (705 Total Estimated EDU's)							
		Crystal Ridge (3220 Zone) (115 EDU's)	Crystal Ridge (3060 Zone) (66 EDU's)	Crystal Ridge (2985 Zone) (66 EDU's)	Crystal Ridge (2800 Zone) (170 EDU's)	Crystal Ridge (2630 Zone) (82 EDU's)	Foothills (165 EDU's)	The Canyons (Parcel G) (27 EDU's)	Obsidian Mountain/Triple 5 (14 EDU's)
P-13 B Pump Station	$1,336,968	$1,896	$1,896	$1,896	$1,896	$1,896	$1,896	$1,896	$1,896
P-13B/R-31 Transmission Pipeline	$1,860,000	$2,638	$2,638	$2,638	$2,638	$2,638	$2,638	$2,638	$2,638
R-31 Reservoir	$1,680,200	$2,383	$2,383	$2,383	$2,383	$2,383	$2,383	$2,383	$2,383
P-31 Pumping Station	$1,438,400	$2,040	$2,040	$2,040	$2,040	$2,040	$2,040	$2,040	$2,040
P-31/R-32 Transmission Pipeline	$1,044,080	$1,481	$1,481	$1,481	$1,481	$1,481	$1,481	$1,481	$1,481
R-32 Reservoir	$1,775,680	$2,519	$2,519	$2,519	$2,519	$2,519	$2,519	$2,519	$2,519
PRV-113	$174,704	$0	$310	$310	$310	$310	$310	$0	$310
PRV-114	$162,130	$0	$0	$326	$326	$326	$326	$0	$326
PRV-115	$162,043	$0	$0	$0	$376	$376	$376	$0	$376
PRV-116	$149,060	$0	$0	$0	$0	$1,553	$0	$0	$1,553
TOTALS	$9,783,265	$12,957	$13,267	$13,593	$13,969	$15,522	$13,969	$12,957	$15,522



LOCATION MAP

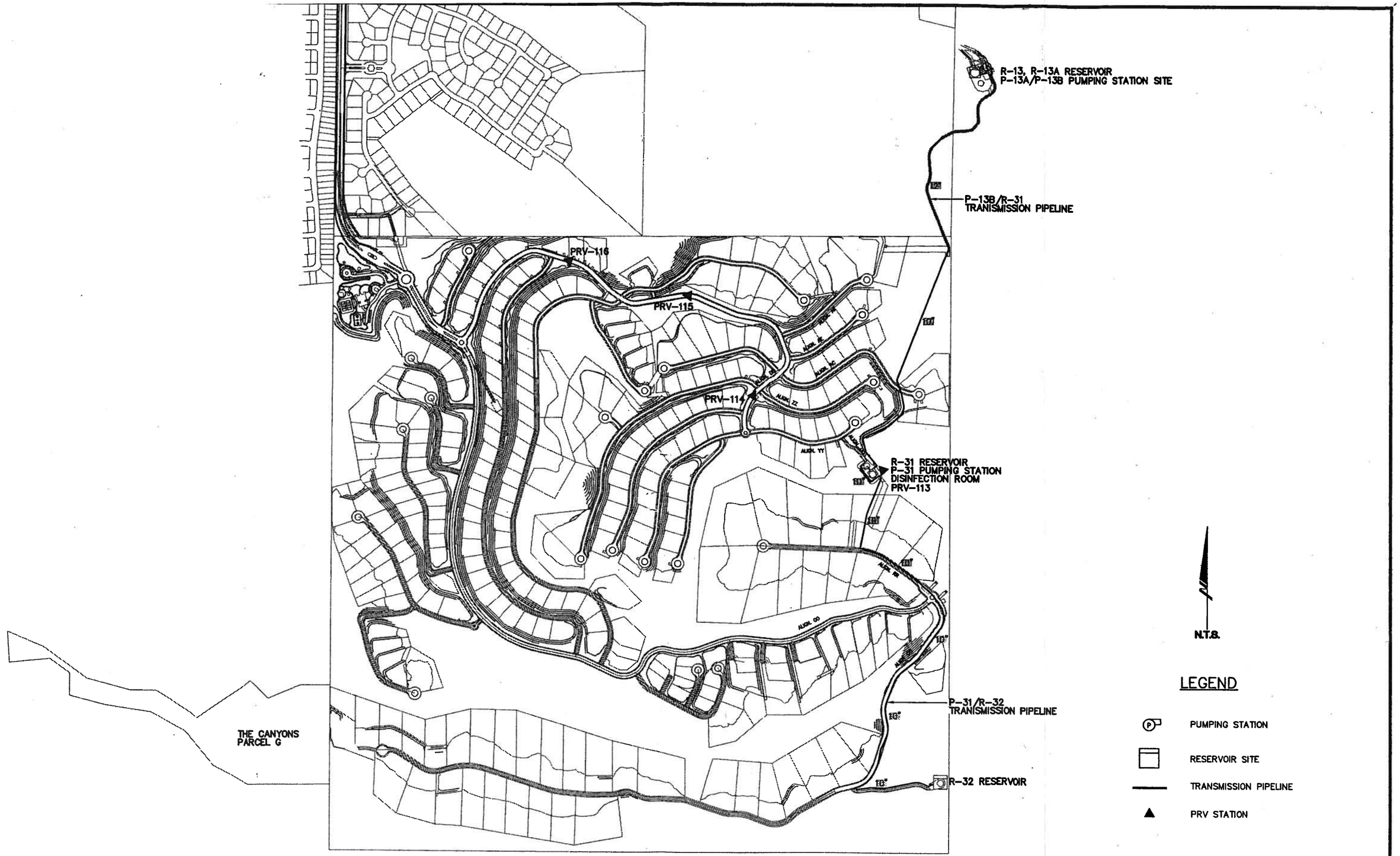
NOT TO SCALE



VICINITY MAP

NOT TO SCALE

CVL CONSULTANTS, INC. ENGINEERING · PLANNING LAND SURVEYING	PROJECT No. 049030	REFUNDING REPORT CRYSTAL RIDGE WATER SYSTEM IMPROVEMENTS LOCATION AND VICINITY MAP	EXHIBIT 1
	SCALE N/A		
	DATE 10/10/07		
	DRAWN BY AM/CV		



CVL CONSULTANTS, INC. ENGINEERING · PLANNING · LAND SURVEYING 6280 S. Valley View Blvd. Suite 200 Las Vegas, NV 89118 Tel: (702) 368-3008 Fax: (702) 368-0047	REFUNDING REPORT CRYSTAL RIDGE WATER SYSTEM IMPROVEMENTS	PROPOSED FACILITIES	Drawn by: AM/CV Checked by: AM Date: 10/10/07	JOB No. 049030 SHEET EXHIBIT 2

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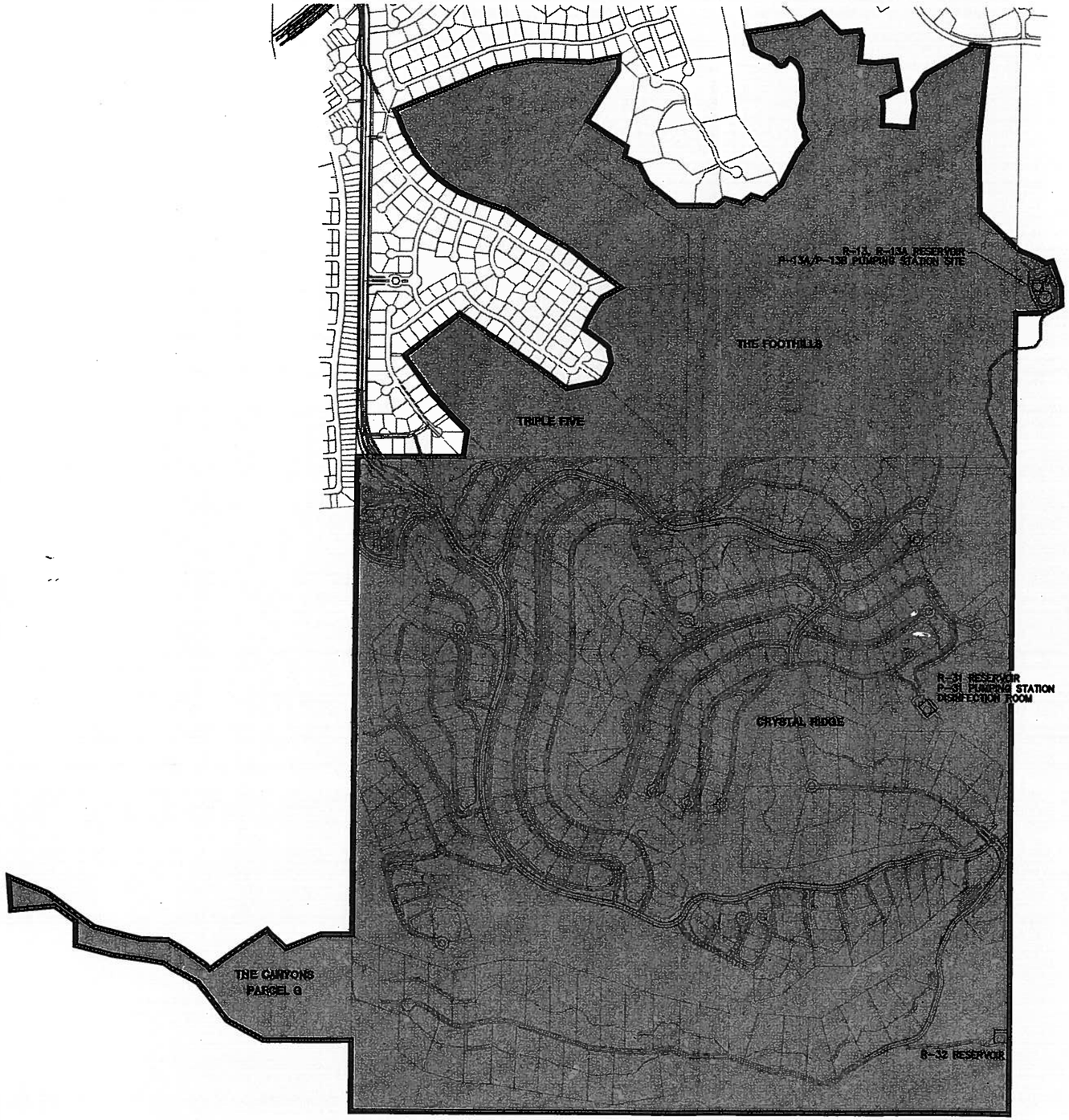

N.T.S.

LEGEND

- REFUNDING AREA
- SPECIAL REFUNDING AREA BOUNDARY
- PUMP STATION
- RESERVOIR

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REFUNDING REPORT
CRYSTRAL RIDGE WATER SYSTEM IMPROVEMENTS

SPECIAL REFUNDING AREA

Drawn by:	AM/CV
Checked by:	AM
Date:	10/10/07
JOB No.	049030
SHEET	EXHIBIT 3

APPENDIX A – Henderson Municipal Code 14.16

14.16.010 General provisions.

A. Purpose and Policy. This chapter sets forth responsibility, authority, and provisions to provide a mechanism for the orderly development of the utility system through refunding of costs associated with the design and construction of utility infrastructure.
B. Scope. The provisions of this chapter shall apply to all residents of the city and/or users of city provided utilities.
C. Administration. Except as otherwise provided herein, the director shall administer, implement, and enforce the provisions of this chapter. Any powers granted or duties imposed upon the director may be delegated by the director to persons acting in the beneficial interest of or in the employment of the city.
D. Compliance. All provisions of this chapter are subject to compliance procedures as outlined in this title and the department service rules. (Ord. 2536 § 84, 2006)

14.16.020 Cost for infrastructure.

The cost to design and construct any water, sewer, and/or reclaimed infrastructure required in connection with the extension of the public utility system to serve the customer shall be advanced by the customer requesting such service. (Ord. 2536 § 85, 2006)

14.16.030 Construction specifications.

All utility extensions, facilities and/or infrastructure to be constructed by the customer shall conform to adopted standards. (Ord. 2536 § 86, 2006)

14.16.040 Standard refunding.

A. Standard Refunding Agreements.
1. The city may enter into an agreement which provides for repayment of a portion of the cost of the main extension lying between the original point of supply and the customer's property from main frontage fees collected from other properties frontage to the main extension covered by such agreement during the term provided in the agreement or until the amount advanced by the customer has been satisfied, as determined in accordance with the provisions of this title and/or the department's service rules.
2. The following items may be eligible for standard refunding:
a. Water, sewer, and reclaimed water main extensions to a project;
b. Water, sewer, and reclaimed water main extensions adjacent to a project; and/or
c. Water, sewer, and reclaimed water mains replacing existing mains.
3. The period during which refunds are due shall be twenty years, commencing on the date when the infrastructure covered by the agreement is completed, tested, and accepted by the city.

4. Construction shall be deemed to be complete when the utility infrastructure is constructed according to the approved plans and satisfies all applicable testing and acceptance criteria.
5. The city council shall grant the director the authority to enter into and execute any standard refunding agreement in which the city is not a participant. Should the city be a participant in a standard refunding agreement, such agreement must be approved according to city standard operating procedures and policies.
B. Standard Refunding Conditions.
1. Application for standard refunding agreement shall be submitted to the department in writing accompanied by documentation as required by the city from customer(s) constructing such infrastructure covered by the agreement. This application shall be submitted within ninety days of date of acceptance by the city of the infrastructure to be covered by such agreement.
2. All customers entering into any refunding agreement with the city shall pay all fees as outlined in this title and/or the department service rules. These fees are due and payable at the time of the execution of the agreement.
3. Customers may be eligible for a refund of main frontage fees collected by the city from other properties in accordance with this title.
4. All standard refunding calculations shall be rounded to the nearest foot and shall be assessed based on the frontage of the applicant's property, as indicated by the most current data in the Clark County assessor office records, adjacent to the right-of-way or easement where the existing water, sewer, or reclaimed water main is located in accordance with this title and/or the department's service rules.
5. After execution of a valid standard refunding agreement, all main frontage fees collected in accordance with this title and/or department service rules shall be paid within sixty days from the date of collection.
6. In the event any expense is incurred by the city within a period of one year after acceptance of the infrastructure installed by the customer covered by a standard refunding agreement due to defective materials or workmanship the amount of such expense shall be deducted from any refund(s) that may become due to the customer thereafter. (Ord. 2536 § 87, 2006)

14.16.050 Special refunding.

A. Special Refunding Agreements.
1. The city may enter into a special refunding agreement which provides for repayment of a portion of the cost of that backbone infrastructure lying between the original point of supply and the customer's property from special refunding fees to be collected by the city from other customers obtaining direct or indirect service from the backbone infrastructure during the term provided in the special refunding agreement, pursuant to this title, or until the proportional cost of design and construction advanced by the customer has been repaid, whichever is earlier.
2. Any special refunding agreement entered into by the city must be based upon a refunding report completed in accordance with the department service rules and adopted by the city council.
3. The term of any special refunding agreement shall be twenty years, which will commence on the date the infrastructure covered by the special refunding agreement is completed, tested and accepted by the city.

4. Application for special refunding agreement shall be submitted to the director in writing accompanied by documentation as required by the city within ninety days of the date of acceptance of the pre-design report by the city for the infrastructure to be covered by such agreement. All final costs are subject to verification by the city.
5. The amount subject to repayment under a special refunding agreement shall be the amount of the actual cost of the work as verified by the city. The final cost of the work shall be the basis for the determination and calculation of refunds under the special refunding agreement. Final costs that are eligible for inclusion in the special refunding agreement are:
a. Actual construction costs (including administration and safety and traffic control measures);
b. Design engineering costs and inspection costs not to exceed an aggregate fifteen percent of subsection (A)(6) of this section;
c. Permits and fees;
d. Performance and related bond costs to the extent not included in subsection (A)(6) of this section;
e. Actual financing costs related to subsections (A)(5)(a) through (A)(5)(d) of this section. Said financing costs shall be computed through the date of final acceptance of the backbone infrastructure by the city; and
f. All fees and expenses reasonably incurred concerning the preparation of the special refunding agreement shall be added to the refunding amount.
6. Construction shall be deemed to be complete when the utility infrastructure is constructed according to the approved plans and satisfies all applicable testing and approval criteria.
B. Special Refunding Conditions.
1. Customers entering into any special refunding agreement with the city shall pay all fees as outlined in this title and/or the department service rules. These fees are due and payable upon execution of the agreement.
2. After execution of a valid special refunding agreement, special refunding fees collected in accordance with this title and/or department service rules shall be paid to the customer within thirty days from the last business day of the quarter in which such fees were collected and will be issued in accordance to the procedures outlined in the department service rules.
3. Special refunding fees collected by the city shall be computed as follows:
a. As to the portion of cost attributable to the holder of the special refunding agreement, advances shall be accrued quarterly with interest equal to one-fourth the prime rate plus two percentage points with a maximum of ten percent per year. The prime rate that is published in the Wall Street Journal or a similar publication approved by the city's finance director for utilization in the refunding report and being the prime rate published at the last business day of each calendar quarter for the subsequent quarter.
b. As to the portion of cost attributable to city, advances shall be accrued quarterly with interest equal to one-fourth the Merrill Lynch Bond Index for tax-exempt thirty-year A-rated revenue bonds as printed in the Wall Street Journal or a similar publication approved by the city's finance director for utilization in the refunding report with a maximum of ten percent per year. The rate shall be based upon the index rate published the last business day of each calendar quarter for the subsequent quarter.

c. The amount that makes up the actual final cost of work shall be depreciated annually over forty years using the straight-line method of depreciation or such time line as recommended and approved in the refunding report. The net book value of the infrastructure shall become the base for purposes of calculating amounts to be refunded and of computing the addition of accrued interest.

4. Special refunding fees, as allocated in the refunding report to a customer, will only be made for utility infrastructure that service areas not only of the customers but areas designated in the approved refunding report.

5. Special refunding fees will be made from fees collected from other customers or the city whose properties are served by the backbone infrastructure and paid prior to final issuance of a certificate of occupancy.

6. In the event two or more customers have designed the same backbone infrastructure, those eligible costs, or an applicable portion thereof, paid by the customer who has submitted a performance bond to the city for construction of the relevant system or facility and has completed said construction shall be refunded.

7. In the event any expense is incurred by the city within a period of one year after acceptance of the infrastructure installed by the customer covered by a special refunding agreement due to defective materials or workmanship on, the amount of such expense shall be deducted from any refund(s) that may become due to the customer thereafter. (Ord. 2536 § 88, 2006)

14.16.060 Violations.

Any person who fails or refuses to comply with any provision of this chapter or department's service rules or who provides false information to the city shall be deemed to be in violation of this title and shall be subject to discontinuance of service; subject to any penalties and charges assessed in accordance with this title and/or department's service rules; and subject to all compliance procedures as proscribed within this title. (Ord. 2536 § 89, 2006)

APPENDIX B – Unit Duty and EDU Table

Table 2-A
CITY OF HENDERSON
WATER CALCULATION GUIDELINES – UNIT DUTIES
Updated: October 12, 2006

Quantity	Type of Development	Calculation Factor	Total EDUs
	Single Family – VLD *(net acreage ≥ ½ acre/lot)*	1.5 EDU/lot	
	Single Family – LD (*(net acreage < ½ acre/lot)*	1.0 EDU/lot	
	Multi-Family – MD *(Density ≥ RM16)*	0.81 EDU/unit	
	Multi-Family – HD *(Density ≥ RM18)*	0.51 EDU/unit	
	Commercial	7.65 EDU/acre	
	School	1.2 EDU/acre	
	Park/Common Element/Irrigated Turf	14.4 EDU/acre	
	Hotel/Motel	7.65 EDU/acre	
	Industrial (case by case)	Attach Calculations	
TOTALS:			

1 equivalent development unit (EDU) equals 0.75 acre feet per year (AFY), which is the estimated annual average water use. The Average Day Demand (gallons per minute) equals 0.62 times the annual average water use (AFY). Peaking factors: Maximum Day Demand = Average Day X 2.0; Peak Hour Demand = Maximum Day X 1.7. The Calculation factors are based on <u>*density*</u> *not zoning. Acres are based on* <u>*gross acreage*</u>

Demand Factor Calculation:

Type of Develop-ment	Total # of Units or Acres	Total # EDUs, (units or acres x EDU factor)	Annual Average Water Use, AFY @ EDU x 0.75 AFY)	Average Day Demand, gpm (AFY x 0.62)	Maximum Day Demand, gpm (ADD x 2.0)	Peak Hour Demand, gpm (MDD x 1.7)
TOTALS:						

APPENDIX C – Sample Depreciation & Appreciation Table

APPRECIATION/DEPRECIATION SAMPLE CALCULATION

Refunding Amount	$500,000
Facility Service Life	25 Years
Number of EDU's (estimated)	2700

Year	Quarter	Straight Line Depreciation	*Quarterly Interest Rate	Index	Refunding Amount	Value per EDU
0	1	$500,000.00	1.5	1.0000	$500,000.00	$185.19
	2	$495,000.00	1.5	1.0150	$500,000.00	$185.19
	3	$490,000.00	1.5	1.0302	$500,000.00	$185.19
	4	$485,000.00	1.5	1.0457	$500,000.00	$185.19
1	1	$480,000.00	1.5	1.0614	$509,454.50	$188.69
	2	$475,000.00	1.5	1.0773	$511,709.90	$189.52
	3	$470,000.00	1.5	1.0934	$513,918.33	$190.34
	4	$465,000.00	1.5	1.1098	$516,077.88	$191.14
2	1	$460,000.00	1.5	1.1265	$518,186.59	$191.92
	2	$455,000.00	1.5	1.1434	$520,242.44	$192.68
	3	$450,000.00	1.5	1.1605	$522,243.37	$193.42
	4	$445,000.00	1.5	1.1779	$524,187.28	$194.14
3	1	$440,000.00	1.5	1.1956	$526,072.00	$194.84
	2	$435,000.00	1.5	1.2136	$527,895.31	$195.52
	3	$430,000.00	1.5	1.2318	$529,654.96	$196.17
	4	$425,000.00	1.5	1.2502	$531,348.63	$196.80
4	1	$420,000.00	1.5	1.2690	$532,973.93	$197.40
	2	$415,000.00	1.5	1.2880	$534,528.44	$197.97
	3	$410,000.00	1.5	1.3073	$536,009.66	$198.52
	4	$405,000.00	1.5	1.3270	$537,415.05	$199.04
5	1	$400,000.00	1.5	1.3469	$538,742.00	$199.53
	2	$395,000.00	1.5	1.3671	$539,987.84	$200.00
	3	$390,000.00	1.5	1.3876	$541,149.84	$200.43
	4	$385,000.00	1.5	1.4084	$542,225.20	$200.82

*Appreciation index used for City of Henderson is the Merril Lynch Bond Index per Ordinance 1495

Appreciation/Depreciation are shown to start immediately however are not effective until year one