

**FINAL
REFUNDING REPORT**

**PUBLIC UTILITIES REFUNDING PROJECT
SR-010-PUMPING STATION P-8A
& TRANSMISSION MAIN PHASE I**

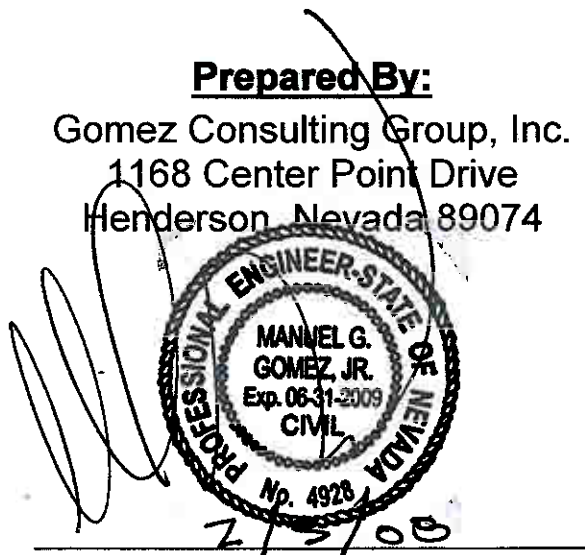
February 5, 2008

Prepared For:

City of Henderson Department of Utility Services
240 Water Street
Henderson, Nevada 89015
Dennis Porter, P.E., Director

Prepared By:

Gomez Consulting Group, Inc.
1168 Center Point Drive
Henderson, Nevada 89074



Manny G. Gomez, P.E.
Project Principal/CEO

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INTRODUCTION

This report is presented to discuss a proposed refunding program organized under Henderson Municipal Code (H.M.C.) Title 14 Chapter 16 that will manage the refunding of design, administration and construction costs associated with the construction of Pumping Station P-8A. This facility is located generally in the southwest portion of the City within Section 23, Township 22S, and Range 63E and in Section 26, Township 22S, and Range 63E.

The City of Henderson adopted Ordinance No. 1440 (Special Refunding and Sewer Infrastructure) in October 1993. At that time its contemplated use was to establish procedures for refunding costs of simple water and sewer main extensions. Historically developers and builders had built only the capacity required for their respective projects. This did not always provide timely or cost effective projects and in the case of major water and sewer infrastructure, this sometimes resulted in periods of inadequate levels of service and/or system redundancies and poorly planned and phased projects. This problem was especially acute when pumping stations and reservoirs were included in the program because of the complex nature of these facilities. As the building boom continued and intensified through the 1990's the challenge that City staff repeatedly faced was how to rapidly and efficiently finance the major infrastructure components, which continued to become more complex, more expensive, and required more time to build. Without the incentive to build beyond their required capacity, builders continued to build only the minimum improvements required. Each major project required intense and sometimes adversarial, ineffective negotiations between the City and private development interests. It was for these reasons the City, through its Public Works Department, retained this company, Gomez Consulting Group, Inc., in 1994 to assist in creating a broader use of the existing ordinance.

At that time City staff successfully convinced the Council to become a proactive force in the planning, design, construction and management of the construction for the major water and sewer facilities. City Council determined that this procedure was necessary to help provide a funding source for the orderly design and construction of infrastructure for large undeveloped areas involving numerous developers, and created a new ordinance supporting that position. The new ordinance allowed the City to partner with private developers and participate in the design and construction of facilities at projected ultimate demand. The first project was the "Southwest Henderson Water and Sewer Refunding Program" which financed over \$27 million dollars in water and sewer improvements. This project was to become the model for our current refunding program. Since then the Ordinance, Henderson Municipal Code (H.M.C.) Title 14 Chapter 16 (14.16) which was previously Title 13, Chapter 18, was rewritten and has been used successfully many times. The program has provided a solid and logical financial incentive for builders to participate with the City in a program that blends private and public financial resources which benefit all the citizens of our community. It has resulted in a higher level of water and sewer service, more efficient and reliable designs of our facilities, and overall lower system operating and maintenance costs. The program design was originally modeled after Assessment or Improvement Districts as defined in NRS 271. Under that well established and broadly applied program, improvement costs are shared by all properties that benefit from the constructed improvements on a proportionate share basis. Using a similar benefit theory as a basis for developing a methodology, COH Department of Utility Services staff has been using an **Equivalent Dwelling Unit (EDU)** for water improvements, and an **Equivalent Residential Unit (ERU)** for sewer improvements as a basis for allocating costs and benefits. This methodology seems to be generally understood by the engineering and the building community.

Simply stated, an Equivalent Dwelling Unit (EDU) or an Equivalent Residential Unit (ERU) is a level of utility consumption or service that is based on established utility planning and design data, and is very quantifiable. Using this method allows for the conversion of any type of differing land uses, commercial or residential, and varying densities to a standard basis. Since water and sewer improvements have a finite service capacity and life, a relatively simple calculation will yield the cost per service unit of each improvement.

This Refunding Report has been prepared by Gomez Consulting Group Inc. under the direction of the COH Department of Utility Services, and will set forth the methodology used to equitably allocate the costs for project P-8A. The amounts eligible for refunding will be determined and collected based on the methodology presented herein. When approved by City Council a "*Special Refunding Agreement*" will be drafted between the City and the developer (in this case the developer is the City of Henderson, Department of Utility Services). That agreement will identify and confirm the final cost of work to be included in the special refunding area as well as the area boundary. A construction cost audit of this facility has already been prepared by Gomez Consulting Group Inc., and contains our professional opinion of project cost and current value.

Henderson Municipal Code (H.M.C.) Title 14 Chapter 16 (14.16) provides direction and outlines terms and conditions required for reimbursement to developers/landowners and/or the City (if the City acts as a developer) for the construction of major water facilities. The Ordinance also requires that each Special Refunding Area have a supporting refunding report submitted to the Council by the Director of Utility Services for approval.

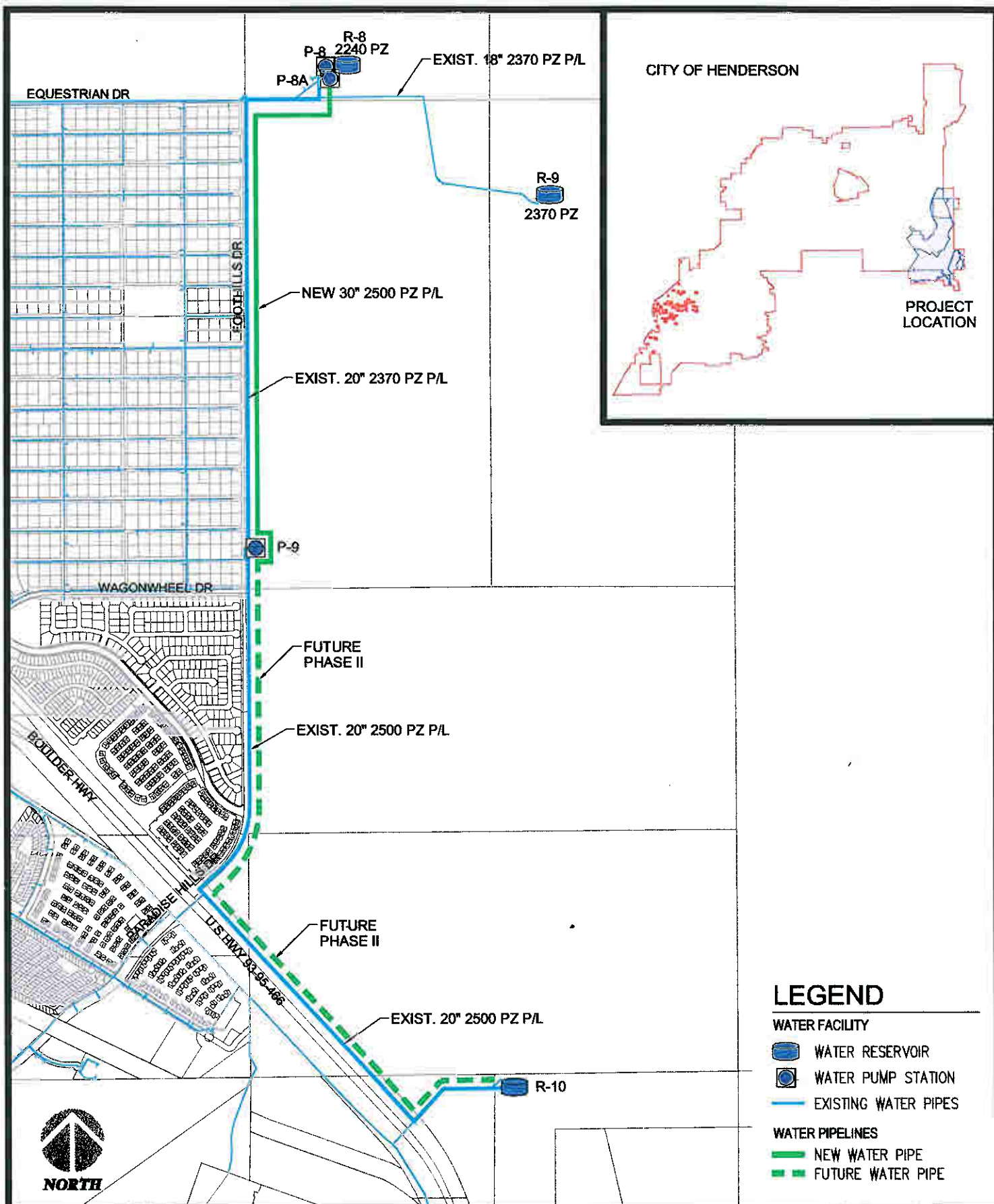
The Ordinance requires that the refunding report includes the following information:

- 1.) Clearly define the boundary of the special refunding area
- 2.) Specify the type and route of major water infrastructure to be included
- 3.) Specify the methods of cost sharing and refunding amounts
- 4.) Specify depreciation schedules
- 5.) Provide any other information City Council deems necessary to enact an ordinance creating the refunding District.

Note: A copy of H.M.C. 14.16 is provided in Appendix A for reference only.

BACKGROUND

The current refunding process provides a method for project cost refunding when developers/landowners and/or the City build infrastructure at a size and capacity in excess of the current demands or in the case of the City, to improve levels of service or system operations. The Developer building the oversized facilities will be eligible for refunding subsequent to City acceptance of the constructed facilities when developers/landowners utilize these facilities. The concept of refunding was discussed in the previous chapter of this report and implementation of these procedures is now an established practice within the City. This report provides the information necessary for the City to equitably assess the benefits and collect over-sizing costs for P-8A. It is our professional opinion the method used herein is fair and equitable and shares the cost of the infrastructure among the benefiting properties based on the proportionate benefit of each improvement. The information used in this report was collected from utility master plans and other available resources which we deem reliable and current. Please see Figure 1 for schematic of Project P-8A improvements and general location.



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CONSULTING GROUP, INC.
1168 CENTER POINT DRIVE
HENDERSON, NEVADA 89074
(702) 566-0440
MUNICIPAL CONSULTANTS
CIVIL ENGINEERS

PROJECT No.

SCALE NTS

DATE 1/31/08

DRAWN BY JJJ

**SCHEMATIC OF
PROJECT LOCATION**

**FIGURE
1 OF 4**

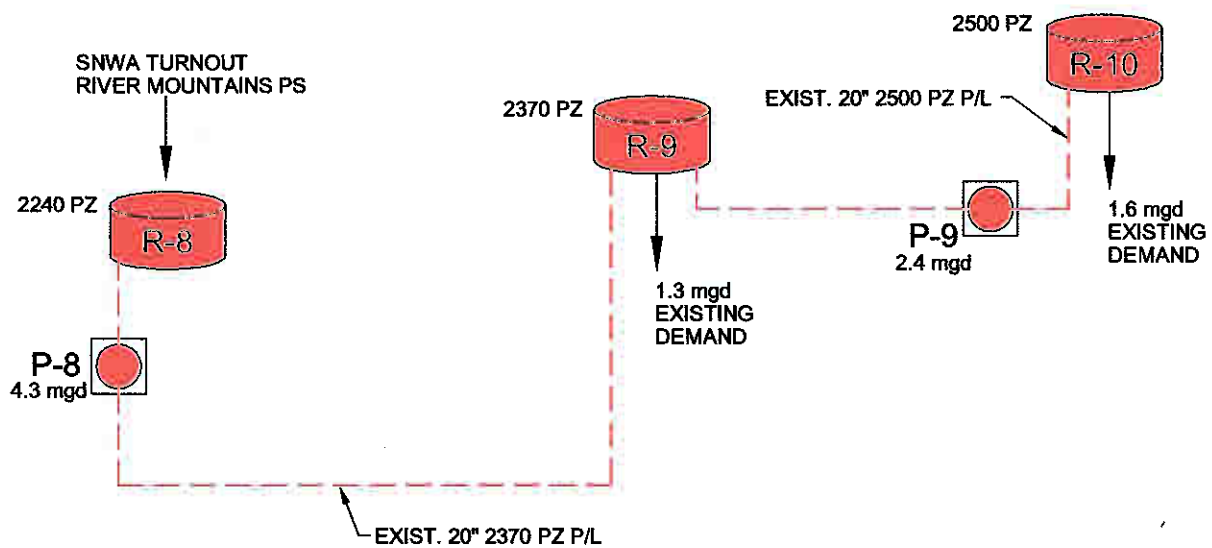
Prior to Construction of P- 8A:

Prior to the construction of P-8A, the City of Henderson, Department of Utility Services pumped from R-8, 2240 Pressure Zone to R-9, 2370 Pressure Zone via P-8. Then, P-9 would pump from the 2370 Pressure Zone to R-10, the 2500 Pressure Zone. P-8A pumps directly from R-8 to R-10.

P-8A provides a total of 7.35 MGD (million gallons per day) of system capacity to be available for use in the upper pressure zones: 2500, 2610 and 2720. P-8A permits the entire service capability of the P-8A facility to benefit these upper pressure zones and no longer relies on the lower pressure zone for its source of supply and service, thus freeing up capacity at P-8 to be used for 2370 Pressure Zone demands. For the purpose of distributing benefit and calculating a cost per benefit unit, the capacity of P-8 and P-8A are converted into annual average day consumptions expressed as a unit of benefit, in this case EDU's. It is important for the participants in this program to understand that a subsequent phase or phases may become necessary to accommodate water demands that exceed the capacity of the facilities included in this refunding report. Please see Figure 2 for schematic drawing of the system **prior to** construction of P-8A.

LEGEND

EXISTING



NORTH

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CONSULTING GROUP, INC.
1168 CENTER POINT DRIVE
HENDERSON, NEVADA 89074
(702) 566-0440
MUNICIPAL CONSULTANTS
CIVIL ENGINEERS

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SCHEMATIC DESIGN
PRIOR TO PUMP STATION
P-8A

FIGURE
2 OF 4

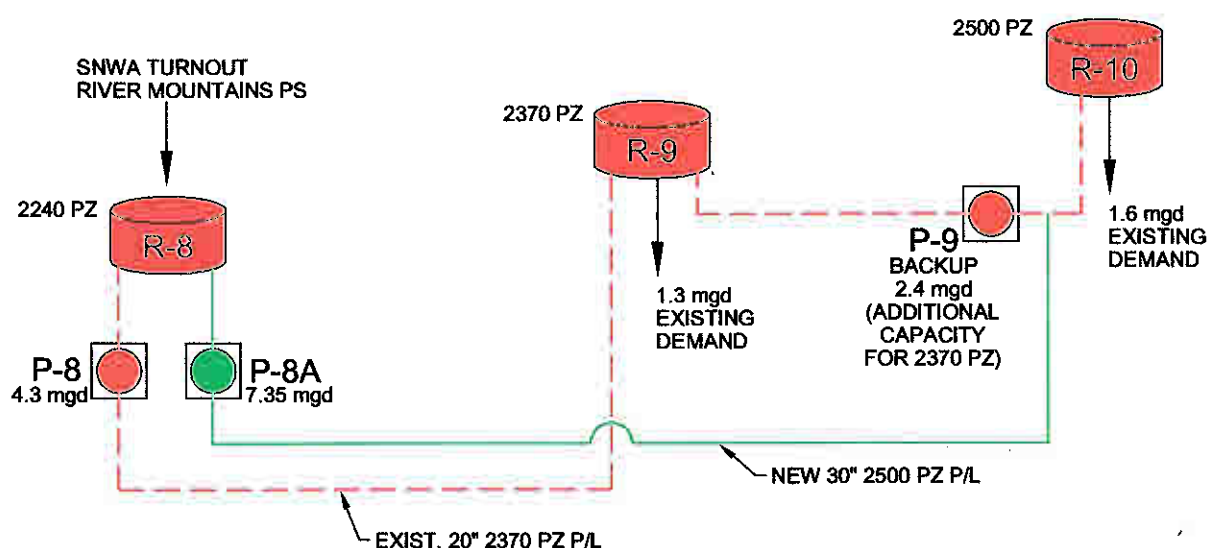
After Construction of P- 8A:

Project P-8A was constructed to upgrade the service capacity of existing pumping stations P-8 and P-9. The current configuration provides a total of 7.35 MGD (million gallons per day) of system capacity to be available for use in the upper pressure zones: 2500, 2610, and 2720. These improvements provide additional capacity for Pressure Zones 2500, 2610, & 2720 by eliminating "wheeling" through the 2370 Pressure Zone and freeing up capacity in the 2370 Pressure Zone, thus permitting the entire service capacity of the P-8A facility to benefit the upper pressure zones and to no longer rely on P-8 and P-9 for its source of supply and service. The current demands of 1.6 MGD must be accounted for by subtracting it from the P-8A upper pressure zone capacity of 7.35 MGD. A net total of 5.75 MGD of system capacity is now available for additional development in the 2500 and higher pressure zones.

In addition, this new system configuration now permits the entire service capacity of the P-8 facility (4.3 MGD) to benefit the 2370 Pressure Zone. The current 2370 Pressure Zone demands of 1.3 MGD must be accounted for by subtracting it from the P-8 capacity of 4.3 MGD. A net total of 3.0 MGD of system capacity is now available for additional development in the 2370 Pressure Zone. Please see Figure 3 for schematic design **after** construction of P-8A.

LEGEND

EXISTING
NEW



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CONSULTING GROUP, INC.
1168 CENTER POINT DRIVE
HENDERSON, NEVADA 89074
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MUNICIPAL CONSULTANTS
CIVIL ENGINEERS

PROJECT No.

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SCHEMATIC DESIGN
AFTER PUMP STATION P-8A

FIGURE
3 OF 4

Facility capacities and available benefits available for use in this refunding area expressed as Million Gallons per Day (MGD):

A. 2370 Pressure Zone:

P-8 capacity of 4.3 MGD minus existing demand of 1.3 MGD = **3.0 MGD**

Additional Capacity from P-8 is as follows:

3.0 MGD = Max Day Demand

1.5 MGD = Average Day Demand

1680 AFY = 2,240 EDU's

B. 2500 & Higher Pressure Zones:

P-8A capacity of 7.35 MGD minus existing demand of 1.6 MGD = 5.75 MGD

5.75 MGD = Max Day Demand

2.88 MGD = Average Day Demand

3,221 AFY = 4,295 EDU's

Total Capacity 8.75 MGD = 6,535 EDU's – Available for Development

BOUNDARY

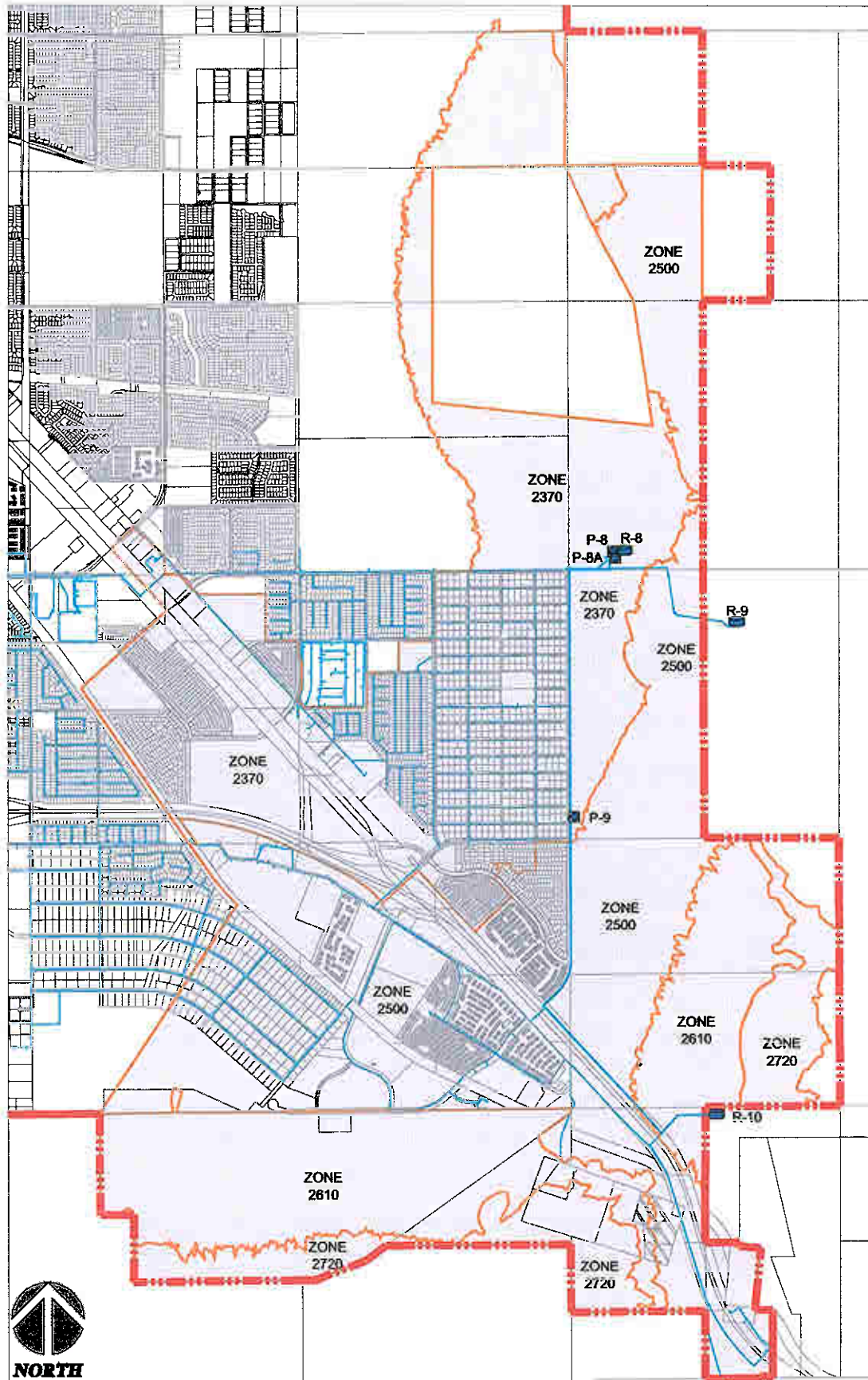
The P-8A special refunding area benefits the undeveloped areas in the 2370, 2500, 2610, and 2720 Pressure Zones. The refunding area boundaries included in this refunding report are shown on Figure 4.

Project Description

P-8A facility improvements include a masonry block building, a three pump (configured as 2 duty, 1 standby) packaged booster pumping station with a capacity of 7.35 (MGD). Also included is approximately 5,630 linear feet of 30-inch diameter transmission pipeline with related equipment and appurtenances including all mechanical, electrical, and instrumentation required for a full complete operational pumping station.

P-8A improvements will provide additional capacity for Pressure Zones 2370, 2500, 2610 and 2720. 2,240 EDU'S are available for Pressure Zone 2370 and a total of 4,295 EDU'S in the 2500, 2610 or 2720 Pressure Zones.

If future demands require additional pumping capacity, future improvements have been planned that could increase total out-put of this pumping station to 11 MGD.



LEGEND

- CITY BOUNDARY
- PRESSURE ZONES
- WATER FACILITY**
 - ▭ WATER RESERVOIR
 - WATER PUMP STATION
 - EXISTING WATER PIPES
 - ▭ REFUND AREA

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CONSULTING GROUP, INC.
1168 CENTER POINT DRIVE
HENDERSON, NEVADA 89074
(702) 566-0440
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REFUNDING AREA
2370, 2500, 2610 AND 2720
PRESSURE ZONES

FIGURE
4 OF 4

PROJECT COST

Pumping Station P-8A Audited Facility Costs

TYPE OF COST	COST
QC & Inspection <i>(Note 1)</i>	\$42,753.92
Construction Cost	\$6,634,011.03
Equipment Cost	\$284,261.37
Design <i>(Note 1)</i>	\$644,485.70
Other Costs	\$53,707.90
TOTAL PROJECT COSTS <i>(Note 2)</i>	\$7,659,219.92

(Note 1) Limited to maximum of 15% Construction cost

(Note 2) See report of audited construction costs prepared by Gomez Consulting Group, Inc.: *Evaluation, Audit & Summary of Eligible Refunding by City Of Henderson Title 14, Section 16 (Special Refunding) Draft Final Report, SR-010-Pumping Station P-8A & Transmission Main - Phase 1*

Refunding and proportionate cost sharing is based on estimated water demands only from available development areas in each pressure zone as discussed earlier in this report and as shown on Figure 4.

Procedures for allocating costs required by the Refunding Ordinance and used in the preparation of this Refunding Report include consideration of the following criteria:

- A. Costs of infrastructure necessary to bring the water supply to the refunding area boundary are allocated equally to all potential users based upon an Equivalent Development Unit (EDU). The refunding area is usually analyzed by pressure zone for water system improvements. Ultimate build out demands are estimated and used as a basis of design for facility or project (see Appendix B for definition of EDU and supporting calculations).
- B. Regardless of whether a property is included in a master planned development or not, each property that benefits from the facilities or project should be charged the specified unit benefit amount (usually per EDU) in accordance with procedures established in each respective Refunding Report. Benefit cost per unit of benefit can vary from pressure zone to pressure zone depending on the type of facilities constructed. That determination is unique for each refunding area, and should be made on a case by case basis for each Refunding Report as is the case herein.
- C. Usually the City of Henderson or one of its departments is involved in the design, construction and/or financial sharing of responsibilities for the development of the water facilities or project.
- D. The most equitable method for allocation of costs to the properties participating in this refunding area is to distribute the cost using the same base unit of benefit (EDU) without regard to location of the parcel, likely connection points, or status of currently approved plans, if any. Funds collected from these users will be refunded back to

the party constructing the facility, in this case the City of Henderson, Department of Utility Services, in accordance with Appendix A, Chapter 14.16 of the Henderson Municipal Code.

- E. The City will collect the total refunding amount from respective developers/homeowners at the time the first connection for each property or development is made to the system. Funds collected from these users are refunded back to the party constructing the facility in accordance with Chapter 14.16 of the Henderson Municipal Code (See Appendix A). In some programs, the developer receiving the refund may be the City of Henderson or a department of the City.
- F. The total facility cost will be indexed to reflect inflation. Sample Depreciation Schedules are contained in Appendix C, Chapter 14.16 of the Henderson Municipal Code. Depreciation will be based on the following replacement schedule for the facilities as listed below:

Pump Stations	25 years
Reservoirs	25 years
Pipeline	50 years

- G. Final audited facility cost will be grouped into the following three categories:
- 1) Construction cost;
 - 2) Pre-design and design cost; and
 - 3) Related soft costs including permits, plan checking, City inspection fees, construction management and administration, tortoise surveys, land acquisition fees, legal and financial costs, performance bonds, processing fees, and fees

associated with audit of construction costs.

The City Council and Director of Utility Services have determined that the design cost (category 2) and related costs (category 3) combined should be limited to a maximum of 15% of the final audited construction cost.

Total cost share is determined by simply dividing the actual project cost for P-8A by the net total number of EDU'S now available for development. Fees will be collected by the City from all developers and/or property owners within the refunding area at the time their first connection (approval of plans) is made to the system. All costs will be indexed in accordance with H.M.C. 14.16.

Equivalent Development Unit Cost Share Summary

P8-A PROJECTS CONSTRUCTED	COST	COST SHARE PER EDU (2370 And Higher PZ'S Additional Capacity = 6,535 EDU'S)
Pumping Station & Transmission Main	\$7,659,219.92	\$1,172.03
Total Cost Per EDU		\$1,172.03

These costs will be collected in addition to standard system development fees and other connection charges usually 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 as connection is made to those lines to complete a developer's system.

SUMMARY

Project P-8A was constructed to increase the capacity to deliver water to the 2370 and higher pressure zones. The 2370 and 2500 eastside Pressure Zones had previously been serviced by a system that included interconnected facilities P-8/R-8, P-9/R-9 and R-10. Until the P-8A improvements were completed, water for the 2500 and higher pressure zones was "wheeled" through the lower pressure zone (2370). Increased demands due to development in the lower 2370 Pressure Zone, and the limited ability to expand the existing pumping, made it more cost effective to construct a separate pumping station that delivered water directly to the 2500 Pressure Zone rather than modify the existing system. Construction of these improvements has provided additional capacity for Pressure Zones 2370, 2500, 2610 and 2720 by increasing pumping capacities and by improving system operation efficiencies. Based on our evaluation of the work described in this report, we conclude that these improvements provide a net increase of 6,535 EDU's of water service available for use in these pressure zones. The actual constructed value of the P-8A facility available for beneficial use in this refunding program is \$ 7,659,219.92. Based on the application of the procedures provided in H.M.C. 14.16 we recommend that each property located within the refunding area be assessed the same benefit charge of \$ 1,172.03 per EDU, regardless of property location or point of connection. These fees should be collected and indexed in accordance with the same Ordinance.

APPENDIXES

Appendix A –

Ordinance 1440 - Henderson Municipal Code 14.16 Refunding Regulations
(3 pages)

Appendix B-

Unit Duty and Demand Factor Calculation Guidelines (1 page)

Appendix C -

Sample Depreciation and Appreciation Table (1 page)

Appendix D-

Bibliography (1 page)

APPENDIX A

Appendix A –

Ordinance 1440 - Henderson Municipal Code 14.16 Refunding Regulations
(3 pages)

Chapter 14.16 REFUNDING REGULATIONS

Title 14 UTILITY SERVICES

Chapter 14.16 REFUNDING REGULATIONS

14.16.010 General provisions.

14.16.020 Cost for infrastructure.

14.16.030 Construction specifications.

14.16.040 Standard refunding.

14.16.050 Special refunding.

14.16.060 Violations.

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:

Chapter 14.16 REFUNDING REGULATIONS

- 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;

Chapter 14.16 REFUNDING REGULATIONS

- 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

Appendix B-

Unit Duty and Demand Factor Calculation Guidelines (1 page)

UNIT DUTY AND DEMAND FACTOR CALCULATION

Table 2-A

City of Henderson

Water Calculation Guidelines – Unit Duties

Updated: October 12, 2006

Type of Development	Calculation Factor
Single Family – VLD (<i>net acreage</i> $\geq \frac{1}{2}$ acre/lot)	1.5 EDU/lot
Single Family – LD (<i>net acreage</i> $< \frac{1}{2}$ acre/lot)	1.0 EDU/lot
Multi Family – MD (<i>Density</i> $\leq RM16$)	0.81 EDU/unit
Multi Family – HD (<i>Density</i> $\geq RM18$)	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

One (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 density, not zoning. Acres are based on gross acreages.

Unit duties shall be reviewed by the Director of Utility Services annually and may be revised by City Council action.

APPENDIX C

Appendix C -

Sample Depreciation and Appreciation Table (1 page)

SAMPLE DEPRECIATION & APPRECIATION TABLE (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	\$194.12
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 Merrill Lynch Bond Index per Ordinance 1495

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

APPENDIX D

Appendix D-

Bibliography – (1 page)

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