

SYRACUSE CITY, UTAH
CULINARY WATER IMPACT FEE UPDATE



IMPACT FEE ENACTMENT
&
WRITTEN ANALYSIS

January 2007

Prepared By:



Epic Engineering, P.C.
3341 South 4000 West
West Valley City, Utah 84120



ORDINANCE 10-08

AN ORDINANCE AMENDING TITLE III CHAPTER ELEVEN, SYRACUSE IMPACT FEES ORDINANCE SYRACUSE CITY ORDINANCES AS AMENDED, BY AMENDING THE FEE SCHEDULE FOR APPENDIX "G" – CULINARY WATER IMPACT FEE AND APPENDIX "I" - PARK DEVELOPMENT IMPACT FEE

WHEREAS, the Syracuse City Council has previously enacted Title 3, Chapter 11 of the Syracuse City Code establishing and adopting impact fees on development activities within the City; and

WHEREAS, the Syracuse City Council desires to amend the Impact Fee for Culinary Water and Park Development as a result of work relating to work completed by City Efforts; and

WHEREAS, Syracuse City, as a political subdivision of the State of Utah has the right, under Chapter 36 of Title 11 Utah State Code, to impose Impact Fees to pay for the costs of said system improvements deemed necessary for growth, and to revise said Impact Fee from time to time; and

WHEREAS, Syracuse City Council, in accordance with the provisions outlines in State Code 11-36-202, has the ability to decrease the fee charged;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF SYRACUSE CITY, DAVIS COUNTY, STATE OF UTAH, AS FOLLOWS:

Section 1. Amendment. The Syracuse City Council hereby amends the Culinary Water Impact Fee assessment as prepared in the "Impact Fee Enactment and Written Analysis" by Epic Engineering, dated January, 2007, and adopted as Ordinance 07-03 by reducing the fee and including the new fee as attached hereto as Exhibit A, and incorporated herein by reference.

Section 2. Amendment. The Syracuse City Council hereby amends the Park Development Impact Fee assessment as prepared in the "Impact Fee Enactment and Written Analysis" by Epic Engineering, dated February, 2009, and adopted as Ordinance 09-06 by reducing the fee and including the new fee as attached hereto as Exhibit B, and incorporated herein by reference.

Section 3. Severability. If any section, part or provision of this Ordinance is held invalid or unenforceable, such invalidity or unenforceability shall not affect any other portion of this Ordinance, and all sections, parts and provisions of this Ordinance shall be severable.

Section 4. No Repeal. This Ordinance is not intended and shall not be construed as a repealer of any previously adopted ordinance or resolution and is specifically intended to clarify and supplement existing City ordinances, rules and regulations.

Section 5. Effective Date. This Ordinance shall become effective immediately upon publication or posting.

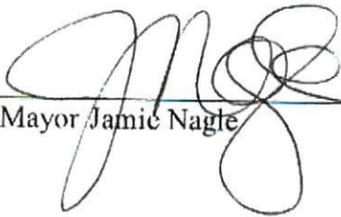
PASSED AND ADOPTED BY THE CITY COUNCIL OF SYRACUSE CITY, STATE OF UTAH, THIS 14 DAY OF SEPTEMBER, 2010.

ATTEST:

SYRACUSE CITY



Cassie Z. Brown, City Recorder



Mayor Jamie Nagle

Voting by the City Council:

	"AYE"	"NAY"
Councilmember Clark	_____	_____
Councilmember Hammond	_____	_____
Councilmember Kimmel	_____	_____
Councilmember Peterson	_____	_____
Councilmember Shingleton	_____	_____

EXHIBIT "A" – CULINARY WATER

Culinary Water Amended Fees

<u>Line Size</u>	<u>Amended</u>
¾" =	\$966
1" =	\$1,610
1-½" =	\$4,999
2" =	\$7,997
3" =	\$15,994
4" =	\$24,991
6" =	\$49,981
8" =	\$79,970

EXHIBIT "B" – PARK DEVELOPMENT

Park Development Amended Fees

Park Development Impact Fee **\$1,376**

Park Development Buy-In Fee **\$ 277**

Total Park Development Fee **\$1,653**

SYRACUSE CITY

CULINARY WATER SYSTEM IMPACT FEE SUMMARY

Syracuse City (**City**) has deemed it necessary to update the capital facility plan for the Culinary Water System. The City is updating Impact Fees to have future development pay for its portion of the new capital costs, so as to not overburden existing customers of the City. Presented herein is the Enactment, Capital Facilities Plan and Impact Fee Analysis for the Culinary Water System.

The City Council (**Council**) was presented this Capital Facilities Plan and Impact Fee Analysis at the Council's regularly scheduled Meeting on January 30th, 2007. The Council has scheduled a public hearing at the City office on February 13th, 2007. The time and place of the public meeting was made public through advertisement in the local newspaper and posting on the City's public information board in the City Hall.

This summary of the Culinary Water Capital Facilities Plan and Impact Fee Analysis is presented to comply with the requirements of the Impact Fees Act, and specifically to summarize the plan in a manner that can be understood by a lay person. It is impossible to convey all of the information from the Capital Facilities Plan and Impact Fee Analysis in this summary format, therefore, readers are encouraged to review the Capital Facilities Plan and Impact Fee Analysis for more information.

What is an Impact Fee?

According to Utah law, an impact fee is a charge imposed, other than a tax, assessment, hookup fee, project improvement fee or other allowable fee, as a condition of development approval. -An impact fee is charged to ensure that the costs of building capital facilities that specifically benefit and are needed for new development are assessed equitably between current residents and new development.

Why do we charge an Impact Fee?

The City charges an impact fee to ensure that the costs of constructing the new Culinary Water facilities that are needed because of growth within the City are not born by the existing customers. The impact fee pays for the portion of the new Capital Facility that are directly attributed to new growth.

Is there an Impact Fee assessed to existing customers?

There are no impact fees assessed to existing customers. All described impact fees are assessed

to newly built homes and businesses after the date the impact fees are adopted.

Where can I read the Capital Facilities Plan and Impact Fee Analysis?

This document is available for public review at the City Hall and at the local public library. Anybody may read the document at these locations but should not remove the document from these locations. Anyone wishing a personal copy of the document should contact the City Offices at 825-1477 to request a copy. A charge may be assessed as compensation for production costs of the document.

How have we determined our Culinary Water Impact Fees?

The following description is a summary of the impact fee calculation. Readers are encouraged to review our Culinary Water Capital Facilities Plan and Impact Fee Analysis for a detailed presentation of this process.

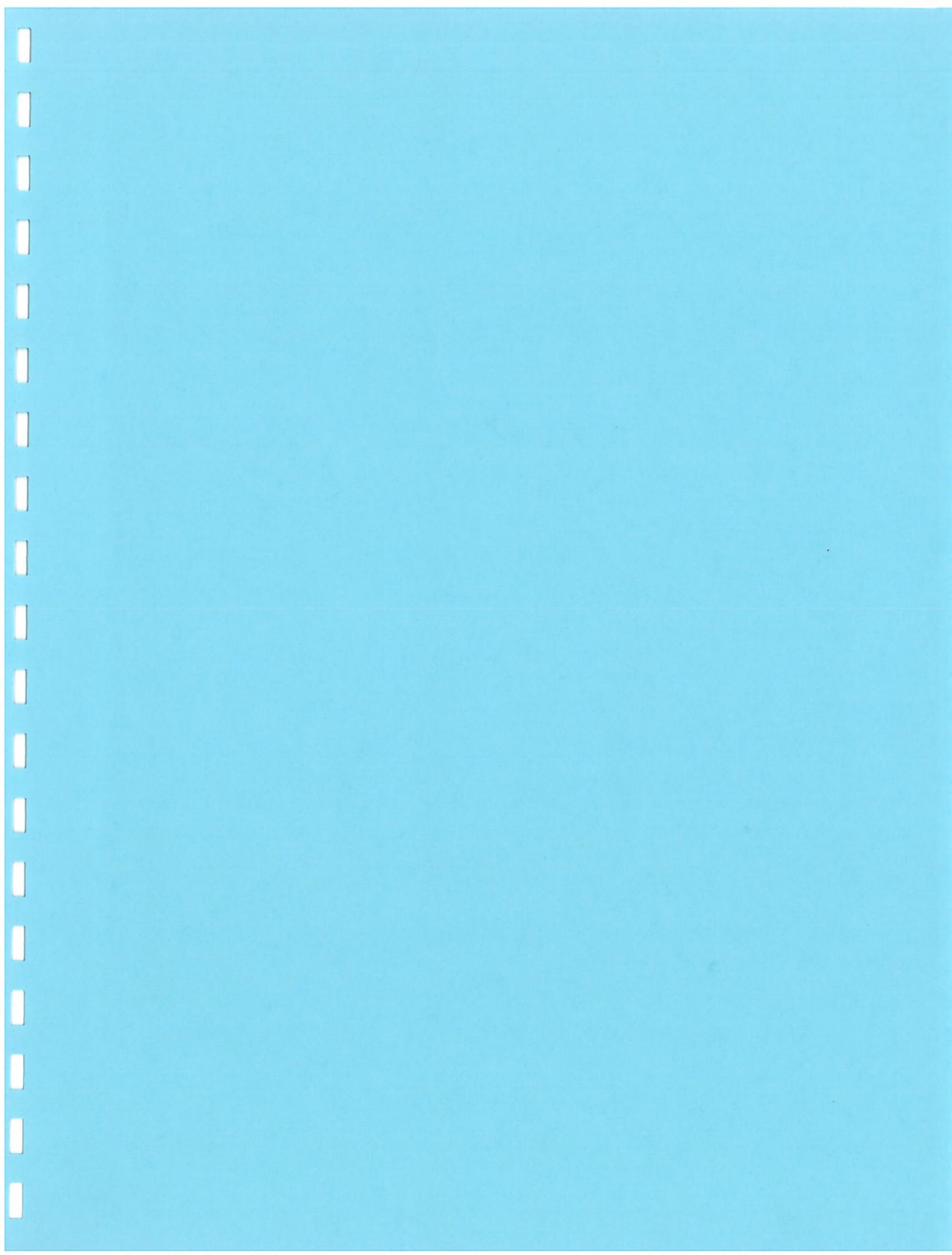
An Impact Fee is a single charge assessed to all residential, commercial, and institutional culinary water connections. The Impact Fee is the fee for capital improvements required to service an estimated 5,523 new connections in the next twenty four years.

The capital improvement financing cost is \$11,197,100.

It is proposed that the Culinary Water Impact Fee be revised to \$1,816.00 for each 3/4-inch residential connection. Connections with larger meters will have a larger impact fee, as described in the impact fee analysis. The impact fee for larger meters is directly proportionate to the 3/4-inch meter impact fee based on the meter's relative capacity and the connections relative water usage.

What will happen at the public hearing?

At the public hearing, the City Council will hear comments from the public on the Capital Facilities Plan and Impact Fees. The Council may then choose to adopt the plan and impact fees as they are, amend the plan or the impact fees, or take the plan and fees under consideration for later action. Under the Impact Fees Act, the only action the Council cannot take is adopt an impact fee higher than that fee justified in the Impact Fee Enactment.



SYRACUSE CITY

CULINARY WATER SYSTEM IMPACT FEE ENACTMENT

Introduction

Syracuse City (**City**) desires to update its Impact Fees for the Culinary Water System in accordance with the Utah State Impact Fees Act, as revised in May 2002. The intent of this Enactment is to provide a detailed summary of the parameters used to establish the Culinary Water Impact Fee. The Enactment is a part of an Impact Fee Study and includes a Capital Facilities Plan and Fee Determination. The Enactment summarizes the assumptions, procedures, projections, required improvements, and costs used to establish the new Culinary Water Impact Fee. The Impact Fee Study consists of an analysis of the location and required sizing of future capital projects and oversizing of the existing system for the benefit of future connections.

Syracuse City has and maintains a Culinary Water System throughout the City. The Culinary Water System supplies quality treated water for use by all of the citizens of the City. The City owns water rights and operates wells within the City and purchases water from Weber Basin Water Conservancy District.

Impact Fee Definition

Under Utah's Impact Fees Act, an Impact Fee is defined as "a payment of money imposed upon development activity as a condition of development approval." An impact fee does not, however, "mean a tax, a special assessment, a building permit fee, a hookup fee, a fee for project improvements, or other reasonable permit or application fee." The establishment, collection and use of impact fees is governed by the Impact Fees Act (Sections 11-36-101 through -501 of the Utah Code). The Impact Fees Act imposes certain procedural requirements to be followed by governmental and private entities when imposing and collecting impact fees.

The purpose of an impact fee is to equitably apportion the cost of constructing capital facilities required by new development, so that existing customers (residences) are not caused to subsidize the construction of those new facilities or infrastructure. The methodology is also intended to avoid unfairly overcharging new development.

Impact fees are distinctly different from a tax, a special assessment under the special district act, a building permit fee, a hook-up fee, a fee for project improvements, or other reasonable permit or application fees, such as conditional use or subdivision application fees.

The Impact Fee is imposed on new development as a condition of service or development. The fee may only be applied within the system for which it is collected (e.g., Culinary Water impact

fees cannot fund Roadway projects).

As documented in this analysis, Syracuse City intends to comply with all the requirements set forth by the Utah Impact Fees Act to ensure that the costs of public facility improvements are assessed in a fair and equitable manner.

Basis of Culinary Water Impact Fee

Given the narrow nature of this study and uncertainty of future growth, several assumptions were necessarily made to determine appropriate impact fees:

1. Impact Fees are assessed to new connections according to their Residential Equivalent (**RE**). -A residential equivalent is the average water usage per connection over several years. It is the statistical average amount of water used by a typical residential connection. A residential equivalent is expressed in gallons consumed per month (gpmo).
2. The expected growth rate within the City from 2007 to 2030 is based upon a population study completed for the *Syracuse City Secondary Water Impact Fee Analysis*, completed by Lewis Young and Associates, 2006. These population projections were compared to available open land for growth within the City and growth was limited according to available land and current typical development densities according to the city general plan
3. Culinary water demands per connection are assumed to remain constant through the study period. In the past 5 to 10 years the unit water usage per connection has decreased due to many factors such as drought, improvements in energy efficient appliances and education of the water user. However, an unexpected significant increase in water usage per RE in the future could increase the number and/or size of the identified capital improvements and their associated cost.
4. The study period is twenty four years. -It is assumed that during this period the City will near build-out of the currently available land to be developed.
5. Interest earned on collected impact fees will be accumulated and applied toward future capital improvements. The interest earned will likely be offset by the interest paid for bonds or loans incurred so that capital improvements can be constructed on the proposed timeline.

Summary of Impact Fee Process

- City Council and Staff determined the need to update impact fees for the Culinary Water

- System to ensure funding for the upcoming system improvements.
- City staff and Consultant completed the Culinary Water Capital Facility Plan Update, including the following:
 - ▶ Determined magnitude and location of future growth.
 - ▶ Modeled culinary water usage to determine areas of excessive pressure loss due to future demands.
 - ▶ Modeled culinary water system to ensure adequate fire coverage is being provided throughout the City due to growth.
 - ▶ Determined pipe sizes and configurations required to resolve pressure problems, fire demand problems and associated costs.
 - ▶ Calculated the appropriate fee for an equivalent residential connection.
- Generate written analysis
- Evaluate impact fee verses Utah State Law.
- Generate Impact Fee Enactment and summary.
- City holds a public meeting for public comment on the Capital Improvement Plan.
- City holds a public meeting for public comment on the proposed Impact Fee revision.
- Impact Fee revision is enacted.

Background

Syracuse City is a community of approximately 24,400 people, located directly on the shore of the Great Salt Lake in Davis County, Utah. Syracuse is bordered on the East by Clearfield City and Layton City, on the south by the Great Salt Lake and on the north by West Point City.

The City first constructed a culinary water system to service its residents in the 1950's and 1960's. The water system consisted of a couple of wells and several miles of small diameter piping in the main rural roads. The City constructed a one million gallon reservoir in the 1970's to provide water storage for summer demands and fire flow.

Population growth in the 1980's precipitated a Culinary Water Master Plan in 1988. Since this Master Plan the City has installed several miles of large diameter piping throughout the City, established a relationship with the City of Clearfield to receive water from Weber Basin Water Conservancy District through their system, and has constructed an additional 2 million gallon reservoir on higher ground in Clearfield.

Demographics

In recent years the population of Syracuse has grown substantially from 6,296 people in 1996 to 12,498 people by the end of 2001 to a population of approximately 24,400 at the end of 2006. The population has increased by almost four times in the last ten years. The 2000 Census,

shows that the official population of Syracuse was 9,387 people in 2,490 households in the spring of 2000, for an average population of 3.77 people per household. The Census also showed that there were a total of 2,601 housing units, showing that there was an occupancy rate of 95.73%. After accounting for the occupancy rate, the population per housing unit is 3.61 people per connection. At the end of 2006, the City had 5,819 connections.

Population Growth Projections

Syracuse City has been in the process of planning growth within the City limits through build-out. The City has reviewed the number of potential building Lots in designed and planned subdivisions. Syracuse has a significant amount of developable land to sustain substantial growth for many years to come. To date, approximately 3,136 acres out of a total of 5,979 total acres within the City limits, or 47%, are developable. The City is expected to continue to experience significant growth for many years to come. The City will be close to build-out within the next twenty years. The anticipated total number of future connections, including residential, commercial, industrial and institutional connections within this twenty-four year period is 5,523, according to the growth rates stated above.

Number of Future Connections = 5,523

Existing Culinary Water System

The existing culinary water system includes approximately 115 miles of 4-inch to 16-inch transmission and distribution piping, two wells, a connection to the Clearfield City water system at 300 North and 1000 West, a connection to a Weber Basin Water Conservancy District main on 500 North, and 3 million gallons of water storage. The components of the existing water supply system are further described as follows.

Future Expansion

The culinary water system will expand by approximately 5,523 connections in the next twenty four years. Additional sources of water, storage, supply capacity and transmission lines will be required for these 5,523 connections.

Wells and Source Supply

The City currently provides for the culinary needs of its citizens through contracts with the Weber Basin Water Conservancy District (WBWCD) with water delivered to the City system from two sources. Source number one is water coming through Clearfield City and entering Syracuse City through a pressure reducing valve at 500 West in 1700 South in Syracuse. The other connection is to the WBWCD line at 300 North 1000 West. The City also has ground

water rights associated with two wells. Well number one is located at approximately 500 West and 1700 South. Well number two is located as approximately 900 South and 800 West.

All the City's wells are older and in need of being upgraded. It is proposed to replace the existing well # 1 with a new well and pump station. The new well will target an increased capacity to utilize the water rights of both well sites. If the replacement well fails to utilize all of the City's water rights then an additional replacement well may be needed at the other well site in the future. **It is recommended that the new well be constructed with a backup generator to help offset storage requirements.**

Water Treatment

Water is purchased from WBWCD to meet the water demands of the City. Weber Basin Water Conservancy District has contacted their clientele and has informed them that each City will have to find alternative sources of water as they will not be able to meet all the future demands. Weber Basin's water will continue to increase in cost to meet future needs incurred by their operation plants. Syracuse City has land drains located in various parts of the City, which provide a viable option to use within the culinary water system. Shallow water right transfers will need to be obtained for the use of this water and a water treatment plant will need to be constructed to use this water. A present worth cost analysis for 20 years shows that the cost of a treatment plant will be less than purchasing additional water from Weber Basin. In addition to the plant being able to provide an alternative source of water to the City, the treatment plant would be located on the West side of the City thus providing an alternative supply source to the City. A storage facility would also be constructed on this site. **It is recommended that a water treatment plant be constructed to meet the demands of the system and to provide an alternative source of water.**

Pipe Distribution

An evaluation was completed of future growth in the City and the impact the growth will have on the water system. It is projected that 5,523 new residential connections will occur in the City by the year 2030. These 5,523 new connections will be developed throughout the City in several large and small vacant areas. This growth will require new transmission lines through the City to maintain system pressures and fire flow. **It is recommended that various pipe improvement projects be completed throughout the City.**

Storage

The City's current 3 million gallon storage is not sufficient at present. By the year 2030 storage requirements will exceed existing storage by 5 MG. It is anticipated that the new well will be able to pump 1500 gpm. With a back-up generator to provide un-interrupted water supply, this supply can take the place of 2.16 million gallons of storage requirements. With the

relocation of the existing well and the new well building, the City will have existing capacity through 2014. It is anticipated that a water treatment plant will provide an additional 1000 gpm with a back-up generator to provide un-interrupted water supply in addition to a 1 MG storage tank. Together this will supply an additional 2.69 million gallons of storage requirement. This tank will be constructed in conjunction with the treatment plant. **It is recommended that a 1.25 MG reservoir be constructed to supply additional storage.**

Improvement Costs Summary

The cost of improvements to the Syracuse culinary water system that will benefit future connections include a water treatment plant, a replacement well storage, transmission mains and future capital facility pan updates. The cost of these improvements are listed below.

Water Treatment Plant & Storage	\$5,086,000
Replacement Well	\$1,936,000
Storage Reservoir	\$937,500
Pipe Distribution	\$3,097,600
Impact Fee Planning	<u>\$140,000</u>
TOTAL	\$11,197,100

The Capital Improvement projects are projected to be completed within the next ten years. -The collection of Impact Fees that will pay for these projects will be collected during the twenty-four year study period. Therefor, sufficient funds may not be available at the proposed construction date and the City may need to issue a bond(s) or use other funding options to pay for the improvement projects and use the impact fee funds to service the debt as the funds are collected.

Impact Fee

Collected Fees

In 1988, the City of Syracuse, Utah adopted an Impact Fee of \$475 assessed to each new connection serviced by the City.

Impact Fee Fund Balance

Based on the fee income minus the capital costs to date, the current fund is \$1,169,883.76.

Impact Fee Calculation

The impact fee is calculated by dividing the construction cost of improvements directly benefitting future connections by the number of future connections benefitted. The denominator used in this formula is the projected growth, in new connections, to Syracuse's system from the year 2007 through the 2030 planning period. The growth through this twenty four year time period is estimated to be 5,523 new connections.

The impact fee for future improvements is calculated as follows.

$$\begin{aligned} \$11,197,100 - \$1,169,883.76 &= \$10,027,216.24. \\ \$10,027,216.24 / 5,523 \text{ connections} &= \$1,815.54/\text{connection} \\ \text{Total Impact Fee} &= \$1,815.54 \end{aligned}$$

The required total Culinary Water Impact Fee is calculated to be \$1,815.54. It is recommended that the Impact Fee be rounded to **\$1,816** for ease of use and collection by the City.

The impact fee of \$1,816 is calculated using current costs and values of the projects. Due to inflation and rising construction costs, this fee will not stay current with future costs. To keep the impact fee current and to provide for future growth and cost, the impact fee will be increased each year by 3%. Standard accounting practices are to use between a 2% to 4% inflationary rate. Table 1 shows the future impact fees through 2011, at which point the impact fees will be evaluated to ensure that the fees are covering the projected costs.

TABLE 1
Future Impact Fee

Year	3/4" Meter	1" Meter
2007	\$1,816.00	\$3,025.00
2008	\$1,870.00	\$3,116.00
2009	\$1,926.00	\$3,209.00
2010	\$1,984.00	\$3,305.00
2011	\$2,044.00	\$3,404.00

Administration of Charges

The impact fees, when imposed, should be separately accounted from other City revenues and impact fees, and restricted to culinary water capital improvement purposes. This should be performed in a manner which provides a clear audit trail, which can demonstrate that they were used only for capital purposes within the system for which they were collected.

Whenever a developer constructs system facilities which are included in the capital improvement project list, Syracuse should compensate that developer in one of two ways:

1. Through payment toward the portions of the project (such as oversizing) which provides general City benefit and are included in the impact fee basis; or
2. Through issuance of impact fee credits for those project costs, which the developer(s) may use toward their impact fees. Such credits should have a finite life (e.g. five to ten years), be non-transferable, and be limited to the specific system for which issued (e.g. culinary water versus sanitary sewer).

The City's compensation to the developer should be limited to the lesser of the developer's actual costs for the City share of the project, or the City Engineer's cost estimate.

Review of Impact Fee Verses Utah State Code Requirements

As part of the Impact Fee Written Analysis a comparison of the impact fee with the Utah State Code was performed to show compliance with the ordinance.

Challenging Impact Fees

Any person or entity residing in or owning property within Syracuse City's service area may in accordance with the Utah Code file a challenge or declaratory judgment action challenging the validity of the Impact Fee. Such individuals or agencies desiring to do so shall follow the procedures outlined in the Utah Code.

Adjustment of Impact Fees

In accordance with Utah State Code, the City has the right to permit an adjustment of the amount of the Impact Fee or basis of the Impact Fee subject to the submission of sufficient studies, reports or data by the person or entity being assessed the Impact Fee. Such information shall provide sufficient justification to show that an adjustment in the Impact Fee is applicable for their development. The City and City's representative will have the right to evaluate and make

judgment or adjustment based upon the information submitted to the City.

Special Project Impact Fee

As the City develops from time to time a development unanticipated by the City may require capital improvements in addition to those identified in the Capital Facility Plan that may be needed exclusively for that development. In such cases, the City will follow a process similar to this Impact Fee study to establish a Special Project Impact Fee for that development. Such Special Project Impact Fees will be assessed in addition to the System Impact Fee.

**EVALUATION OF UTAH STATE CODE VS. GENERATION OF SYRACUSE CITY
CULINARY WATER WRITTEN ANALYSIS AND ENACTMENT**

Utah Code Requirement		Addressed in Document
Code	Requirement	
11-36-201 (5) a	<p>(i) Identify the impact on the City caused by the development</p> <p>(ii) Demonstrate how the impacts on the City are reasonably related to the development</p>	<p>The City has constructed a culinary water system to provide potable water to the residents of the City. -The culinary water system must expand to supply water to developing areas of the City.</p> <p>To supply culinary water to the developments in the City, new water sources, a replacement well, a storage reservoir and transmission mains will need to be constructed.</p> <p>The City has reviewed the building sizes and type of construction of future buildings to be located within the City. -Also the existing storage and operating pressures have been analyzed to verify future requirements and improvements required. -The City operates within the State requirements and within operating rules established for Culinary Water.-</p> <p>The identified capital improvements are required specifically to supply culinary water and to provide fire protection to future connections.</p>

**EVALUATION OF UTAH STATE CODE VS. GENERATION OF SYRACUSE CITY
Culinary WATER WRITTEN ANALYSIS AND ENACTMENT**

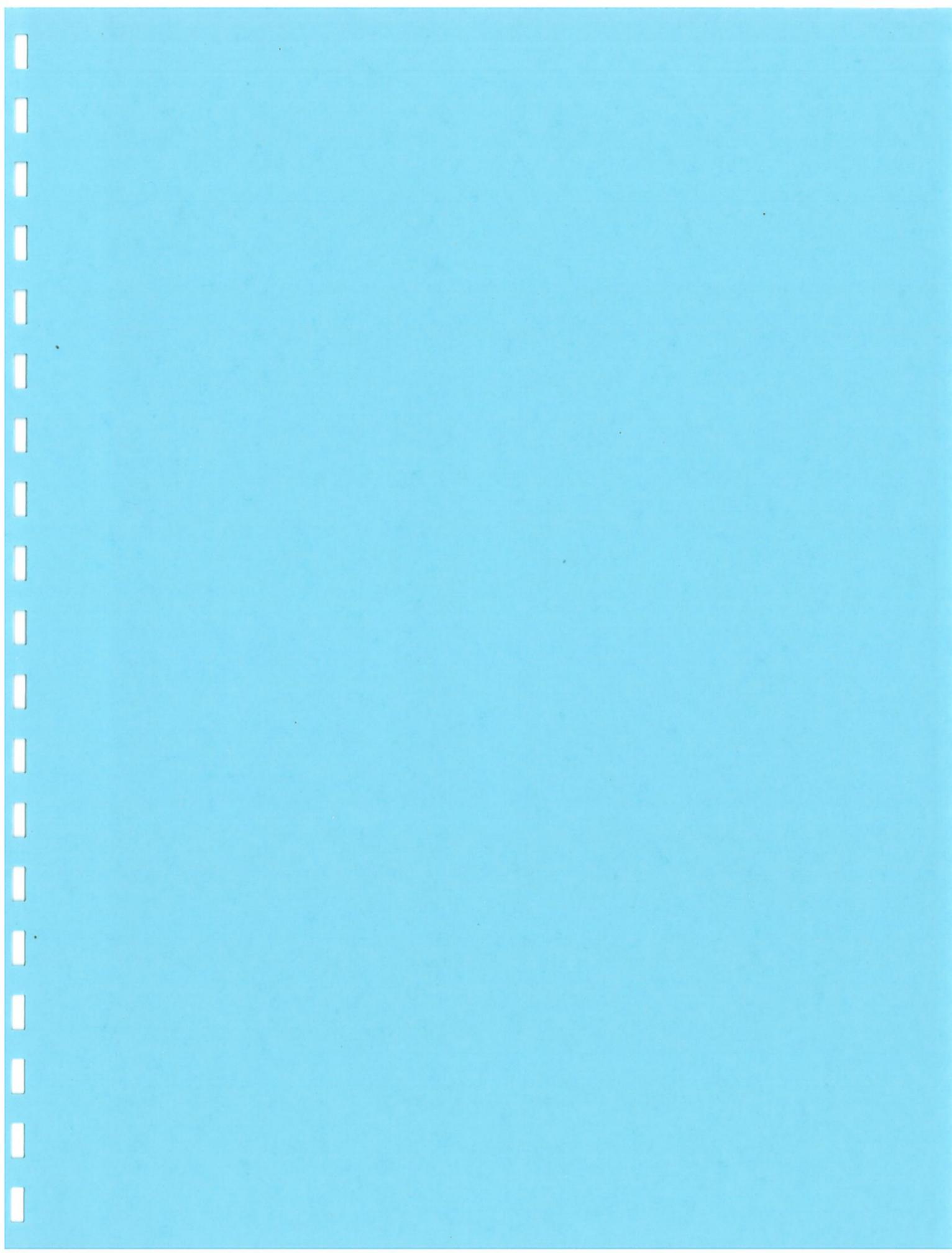
Utah Code Requirement		Addressed in Document
Code	Requirement	
11-36-201 (5) a	(iii) Estimate the proportionate share of the costs of impacts to the City that are reasonably related to the development	The Impact Fee is calculated by dividing the cost of constructing projects on the Capital Facility List by the number of future connections to the system. - Future developments will only pay for items identified as specifically required for future development.
11-36-201 (5) b	(i) Identify (if applicable) -the cost of existing public facilities.	Not applicable.
	(ii) Identify (if applicable) the manner of financing existing public facilities.	Not applicable.
	(iii) Identify (if applicable) the relative extent that existing new developments have already contributed to the cost of existing facilities.	Not applicable.
	(iv) Identify (if applicable) the relative extent to which new developments will contribute to the cost of existing public facilities in the future	Not applicable. -The Impact Fee does not include costs of existing facilities that are not directly attributable to new development.

**EVALUATION OF UTAH STATE CODE VS. GENERATION OF SYRACUSE CITY
CULINARY WATER WRITTEN ANALYSIS AND ENACTMENT**

Utah Code Requirement		Addressed in Impact Fee Document
Code	Requirement	
11-36-201 (5) b	(v) Identify (if applicable) the extent to which new developments are entitled to a credit due to improvements which are or will be paid for by other means within the City.	Not applicable.
	(vi) Identify (if applicable) extraordinary costs, if any, in servicing the new development	No extraordinary cost have been identified at this time.
	(vii) Identify (if applicable) the time-price differential inherent in fair comparisons of amounts paid at different times.	Not applicable to the Impact Fee: -Costs of the proposed capital improvements are based on current day prices and loan interest rates. - This plan does set forth the procedure for the City Council to reevaluate construction cost increases and impact fee assessments annually.
11-36-201 (5) c	Prepare a summary of the written analysis designed to be understood by a lay person	A summary has been prepared and is at the beginning of the Enactment. -In addition, each section of the Written Analysis contains an executive summary.
11-36-202 (2) a	Enactment establishes one -or more service areas for which the impact fees shall apply	The Written Analysis describes and the Enactment establishes the entire City as the service area upon which the impact fee is assessed.
11-36-202 (2) b	Enactment contains the formula used to calculate the impact fees	A detailed narrative text and all calculations are provided to assist the reader in understanding and calculating the impact fees

**EVALUATION OF UTAH STATE CODE VS. GENERATION OF SYRACUSE CITY
CULINARY WATER WRITTEN ANALYSIS AND ENACTMENT**

Utah Code Requirement		Addressed in Impact Fee Document
Code	Requirement	
11-36-202 (2) c	<p>Enactment contains a provision to (i) respond to unusual circumstances in specific cases, (ii) ensure that impact fees are imposed fairly</p>	<p>i) Enactment does contain a provision for the City to respond to unusual circumstances in specific cases if deemed necessary by the City Council or City Manager. ii) Assessment of the impact fees is a function of the number culinary water connections. -Fees are assessed based on a standard 3/4" water meter.- Other meters are based upon a relative equivalency of residential usage.- This is a fair way to assess impact fees to all users based on the amount of water used. iii) Enactment contains a provision for the City Council to assess a special project improvement fee for expansion of service to areas that are outside of the service area of the City or if they require a different pressure than what is found within the City.</p>
11-36-202 (2) c	<p>Enactment contains a provision that permits adjustment of the amount of the fee based upon studies and data submitted by the developer.</p>	<p>Assessment of the impact fees are a function of the number of new connections attaching to the culinary water system by the Development. -Provisions have been included in the Enactment which allows adjustment of the amount of the fee based upon studies and data submitted by the developer.</p>



SYRACUSE CITY

CULINARY WATER SYSTEM

IMPACT FEE WRITTEN ANALYSIS

CAPITAL FACILITIES PLAN

IMPACT FEE DETERMINATION

Rick A. Hansen, P.E.
Project Engineer

EPIC ENGINEERING, P.C.
3341 South 4000 West
West Valley City, Utah 84120

January 2007

ACKNOWLEDGMENTS

Successful completion of this study was made possible by the cooperation and assistance of the Syracuse City Staff, as shown below. We sincerely appreciate the cooperation and assistance provided by these individuals.

Syracuse City

Mayor

Fred Panucci

City Council

Daniel Hammon

Lurlen Knight

Wallace Peterson

Phillip Orton

Dean Steel

City Staff

Ken Hubler - City Administrator

Mike Waite - Public Works Director

Rodger Worthen - City Planner

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SYRACUSE CITY

CULINARY WATER SYSTEM IMPROVEMENTS

Executive Summary

As established in the Capital Facility Plan, the estimated growth within the City in the next twenty four years from 2007 through 2030 will result in approximately 5,523 new connections to build out. The cost of the required capital improvement projects identified in the Capital Facility Plan is \$11,197,100.00. Therefore, it is recommended that the culinary water Impact Fee be adopted at **\$1,816** for each residential connection.

SYRACUSE CITY

CULINARY WATER SYSTEM IMPACT FEE WRITTEN ANALYSIS CAPITAL FACILITIES PLAN

Introduction

Syracuse City (**City**) desires to update its Impact Fees for the Culinary Water System in accordance with the Utah State Impact Fees Act, as revised in May 2002. The intent of this Enactment is to provide a detailed summary of the parameters used to establish the Culinary Water Impact Fee. The Enactment is a part of an Impact Fee Study and includes a Capital Facilities Plan and Fee Determination. The Enactment summarizes the assumptions, procedures, projections, required improvements, and costs used to establish the new Culinary Water Impact Fee. The Impact Fee Study consists of an analysis of the location and required sizing of future capital projects and oversizing of the existing system for the benefit of future connections.

Syracuse City has and maintains a Culinary Water System throughout the City. The Culinary Water System supplies quality treated water for use by all of the citizens of the City. The City owns water rights and operates wells within the City and purchases water from Weber Basin Water Conservancy District.

Impact Fee Definition

Under Utah's Impact Fees Act, an Impact Fee is defined as "a payment of money imposed upon development activity as a condition of development approval." An impact fee does not, however, "mean a tax, a special assessment, a building permit fee, a hookup fee, a fee for project improvements, or other reasonable permit or application fee." The establishment, collection and use of impact fees is governed by the Impact Fees Act (Sections 11-36-101 through -501 of the Utah Code). The Impact Fees Act imposes certain procedural requirements to be followed by governmental and private entities when imposing and collecting impact fees.

The purpose of an impact fee is to equitably apportion the cost of constructing capital facilities required by new development, so that existing customers (residences) are not caused to subsidize the construction of the new facilities or infrastructure. The methodology is also intended to avoid unfairly overcharging new development.

Impact fees are distinctly different from a tax, a special assessment under the special district act, a building permit fee, a hook-up fee, a fee for project improvements, or other reasonable permit or application fees, such as conditional use or subdivision application fees.

The Impact Fee is imposed on new development as a condition of service or development. The fee may only be applied within the system for which it is collected (e.g., Culinary Water impact

fees cannot fund Roadway projects).

As documented in this analysis, Syracuse City intends to comply with all the requirements set forth by the Utah Impact Fees Act to ensure that the costs of public facility improvements are assessed in a fair and equitable manner.

Basis of Culinary Water Impact Fee

Given the narrow nature of this study and uncertainty of future growth, several assumptions are necessarily made to determine appropriate impact fees:

1. Impact Fees are assessed to new connections according to their Residential Equivalent (RE). A residential equivalent is the average water usage per connection over several years. It is the statistical average amount of water used by a typical residential connection. A residential equivalent is expressed in gallons consumed per month (gpmo).
2. The expected growth rate within the City from 2007 to 2030 is based upon a population study completed for the *Syracuse City Secondary Water Impact Fee Analysis*, completed by Lewis Young and Associates, 2006. These population projections were compared to available open land for growth within the City and growth was limited according to available land and current typical development densities.
3. Culinary water demands per connection are assumed to remain constant through the study period. In the past 5 to 10 years the unit water usage per connection has decreased due to many factors such as drought, improvements in energy efficient appliances and education of the water user. However, an unexpected significant increase in water usage per RE in the future could increase the number and/or size of the identified capital improvements and their associated cost.
4. The study period is twenty four years. It is assumed that during this period the City will near build-out of the currently available land to be developed.
5. Interest earned on collected impact fees will be accumulated and applied toward future capital improvements. The interest earned will likely be offset by the interest paid for bonds or loans incurred so that capital improvements can be constructed on the proposed timeline.

Summary of Impact Fee Process

- City Council and Staff determined the need to update impact fees for the Culinary Water System to ensure funding for the upcoming system improvements.

- City staff and Consultant completed the Culinary Water Capital Facility Plan Update, including the following:
 - ▶ Determined magnitude and location of future growth.
 - ▶ Modeled culinary water usage to determine areas of excessive pressure loss due to future demands.
 - ▶ Modeled culinary water system to ensure adequate fire coverage is being provided throughout the City due to growth.
 - ▶ Determined pipe sizes and configurations required to resolve pressure problems, fire demand problems and associated costs.
 - ▶ Calculated the appropriate fee for an equivalent residential connection.
- Generate written analysis
- Evaluate impact fee verses Utah State Law.
- Generate Impact Fee Enactment and summary.
- City holds a public meeting for public comment on the Capital Improvement Plan.
- City holds a public meeting for public comment on the proposed Impact Fee revision.
- Impact Fee revision is enacted.

Background

Syracuse City is a community of approximately 24,400 people, located directly on the shore of the Great Salt Lake in Davis County, Utah. Syracuse is bordered on the East by Clearfield City and Layton City, on the south by the Great Salt Lake and on the north by West Point City

The City first constructed a culinary water system to service its residents in the 1950's and 1960's. The water system consisted of a couple of wells and several miles of small diameter piping in the main rural roads. The City constructed a one million gallon reservoir in the 1970's to provide water storage for summer demands and fire flow.

Population growth in the 1980's precipitated the preparation of a Culinary Water Master Plan in 1988. Since this Master Plan was adopted, the City has installed several miles of large diameter piping throughout the City, established a relationship with the City of Clearfield to receive water from Weber Basin Water Conservancy District through their system, and has constructed an additional 2 million gallon reservoir on higher ground in Clearfield.

Recent Population

In recent years the population of Syracuse has grown substantially from 6,296 people in 1996 to 12,498 people by the end of 2001 to a population of approximately 24,400 at the end of 2006. The population has increased by almost four times in the last ten years. The 2000 Census,

shows that the official population of Syracuse was 9,387 people in 2,490 households in the spring of 2000, for an average population of 3.77 people per household. The Census also showed that there were a total of 2,601 housing units, showing that there was an occupancy rate of 95.73%. After accounting for the occupancy rate, the population per housing unit is 3.61 people per connection.

Table 1 below shows the estimated population and average number of connections for each year from 2001 to 2006. Table 1 also shows the annual population and percent increase for each year, the total population and percent increase, and the average annual population and percent from 2001 to 2006.

TABLE 1
Historical Population Growth, 2001 to 2006

Item	2001	2002	2003	2004	2005	2006	Growth	Average
Population	12,018	14,675	17,251	19,878	21,934	23,068		
Connections	3,075	3,627	4,204	4,669	5,152	5,819		
Pop. Increase		2,657	2,576	2,627	2,056	1,134	11,050	2,210
% Increase		17.11%	17.55%	15.23%	10.34%	5.17%	91.95%	13.93%

Note: Connections at end of year, from city records. Population estimated.

Planning Period

This report uses a planning period from 2007 to 2030. Development is expected to continue in Syracuse as there is available land and as the City annexes smaller pieces of property around the City. It is expected that the City will reach full build-out by the year 2030. By this time all facilities will be in place and there will be no new growth.

Population Growth Projections

Syracuse has a significant amount of developable land to sustain substantial growth for many years to come. The City is expected to continue to experience significant growth for many years to come.

The Wasatch Front Regional Council (WFRC) projects population growth for municipalities along the Wasatch front, including Syracuse. The WFRC has projected Syracuse City to be one of the fastest growing Cities in Davis County over the next ten to twenty years. A population projection in the 2006 Secondary water system completed by Lewis Young and Associates, 2006, shows continued rapid growth for the next three to twelve years, after which the City will grow at a slower rate. For planning purposes this analysis, shown in Table 2, will be used for this study.

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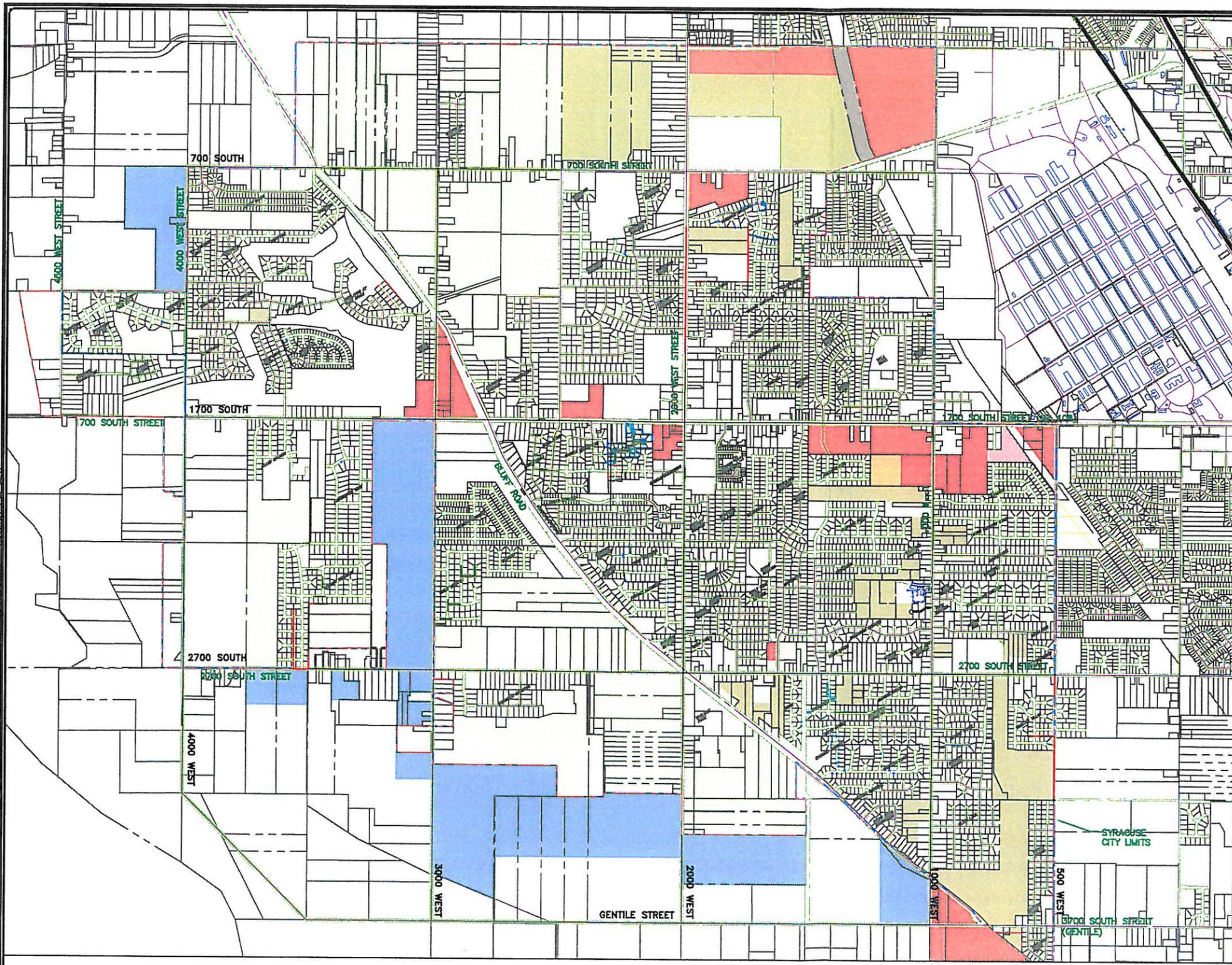
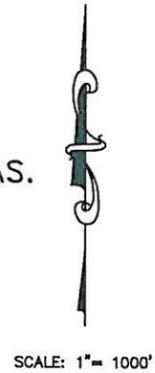
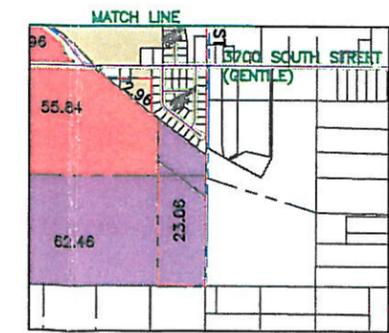


FIGURE 1
SYRACUSE CITY
FUTURE DEVELOPMENT AREAS.



- UNDEVELOPABLE
17.38 ACRES
- R-1 (2.90 DWELLINGS PER NET ACRE)
1093.68
- R-2 (3.79 DWELLINGS PER NET ACRE)
448.74 ACRES
- R-3 (5.44 DWELLINGS PER NET ACRE)
9.67 ACRES
- C-1 COMMERCIAL 1
347.67 ACRES
- C-2 COMMERCIAL 2
8.52 ACRES
- I-1 INDUSTRIAL
85.52 ACRES
- UR-1 UNINCORPORATED AREA [R-1 ZONE]
498.78 ACRES



e² Epic Engineering
2880 WEST 4700 SOUTH, SUITE D
SALT LAKE CITY, UTAH 84118
(801) 955-8605
841 SOUTH MAIN
HEBER CITY, UTAH 84032
(435) 854-8800

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FIGURE 1
FUTURE DEVELOPMENT AREAS
REQUIRED CAPITAL FACILITY IMPROVEMENTS 2007

DESIGNER DIO	CAD DKD
REVIEWED	PROJECT NO 06-SY-220
SHEET 1 of 1	

TABLE 2
Projected Population, 2010 to 2030

Item	2010	2015	2020	2025	2030
Population	27,341	35,229	40,980	44,088	46,218
Growth Rate	5%	3%	3%	1%	1%

The population is expected to continue to grow at a five percent (5%) growth rate for the next seven years from 2007 to 2014. During 2015 to 2020, the growth is expected to decrease to a rate of three percent (3%). Thereafter, the rate of one percent (1%) is assumed from the year 2021 through 2030.

Table 3 below shows the projected household and population growth used in this plan. The City's population growth from 2000 to present and the projected growth through 2030 is also shown in Figure 2.

TABLE 3
Projected Population, 2007 to 2030

Item	2007	2008	2009	2010	2011	2012	2013	2014	2015	2020	2025	2030
Growth Rate	5%	5%	5%	5%	5%	5%	5%	5%	3%	3%	1%	1%
New RE's	291	306	321	337	354	371	390	409	258	1,411	525	550
RE's	6,110	6,416	6,737	7,074	7,428	7,799	8,189	8,598	8,856	10,267	10,792	11,342
Population	24,168	25,205	26,273	27,341	28,919	30,496	32,074	33,651	35,229	40,980	44,088	46,218

Water Usage

Water supply data was collected and reviewed from 1989 to 2005. The data shows a generally decreasing amount of water used each year during the drought years from 1999 to 2003. The system is showing an increased usage per connection from 2004 to 2005. The years 1999 through 2005 are averaged to identify an average residential equivalent usage. This average unit usage is used for trend analysis and for future projections. The monthly distribution of water usage follows a bell curve distribution with the peak summer monthly usage being approximately one and one third the average monthly usage. This peak summer demand is smaller than most water systems due to the secondary water system within the City. It is typical within the State and within water Districts with secondary water systems to have a peak summer month demand from 2.0 to 2.5 times that of the average monthly usage. Average residential connection demands in the City for the last seven years are shown in Table 4. For planning purposes, the future Unit Usage is rounded up to **300 gallons per day per RE**.

**FIGURE 2 - SYRACUSE CITY'S
HISTORICAL AND PROJECTED POPULATION**

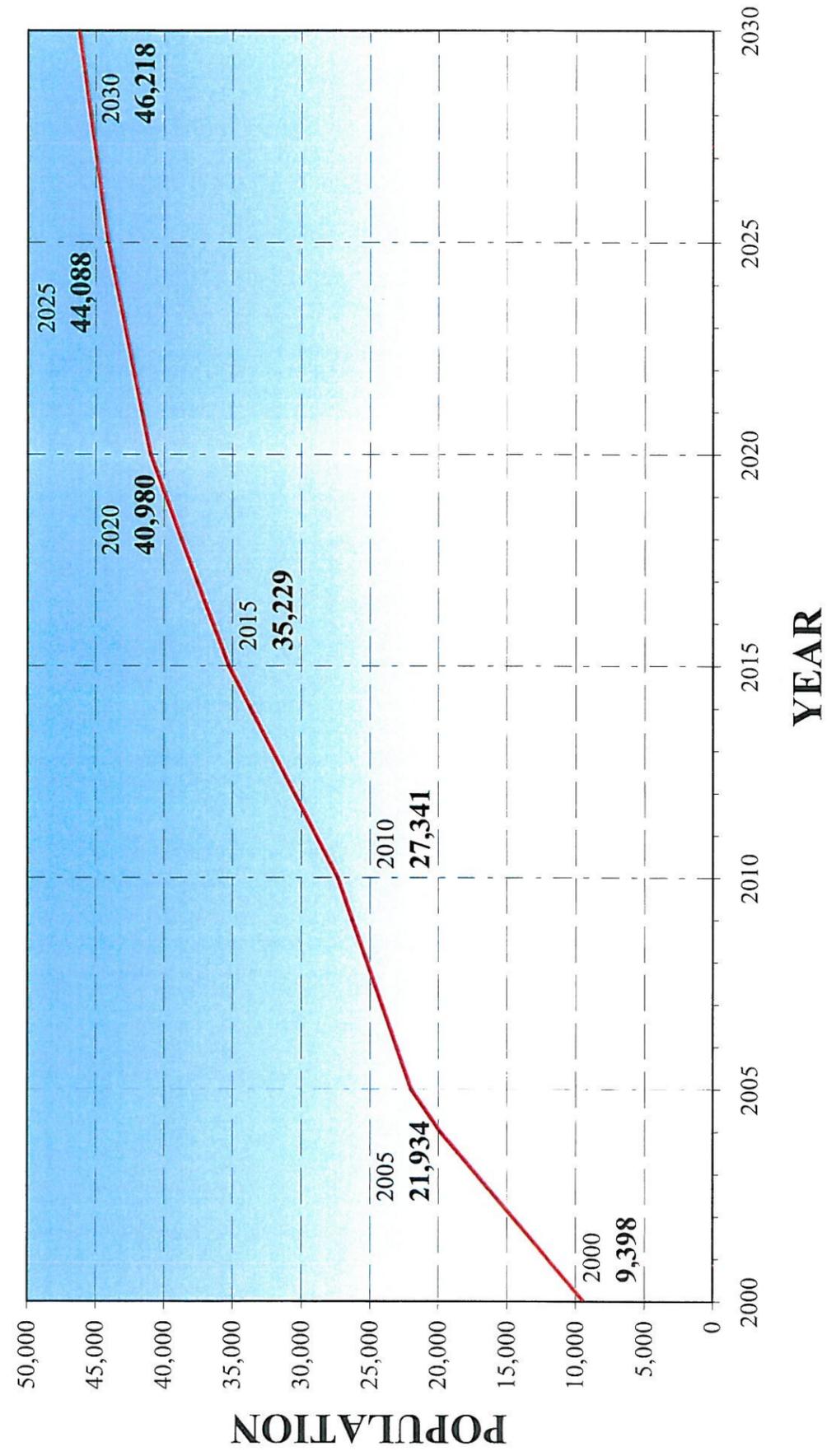


TABLE 4
Residential Culinary Water Demands*

Average Residential Equivalents	3,682
Average Annual Culinary Water Usage (MG)	3,840
Unit Usage (Gal/RE-Day)	286

*Averaged over the years 1999 through 2005

Projected Demands

The future residential culinary water demand is determined by multiplying the current unit demand rate by the number of future connections. Table 5 shows the projected total water use from the year 2007 through the 2030. The number of active residential equivalents is taken from Table 3.

TABLE 5
Projected Residential Culinary Water Use Per RE

Year	Gal (Conn-Day)	RE	Annual Demand (MG)
2007	300	6,110	669
2010	300	7,074	775
2015	300	8,856	970
2020	300	10,267	1,124
2025	300	10,792	1,182
2030	300	11,342	1,242

Computer Modeling

The City's Culinary Water System was analyzed by the computer model H2O Net Version 4.7 with AutoCAD. The model contains all of the piping of the distribution system and the water sources and reservoirs. Pipe sizes, lengths and roughness are entered into the model. The existing culinary water model is shown in Figure 3. In the model, pipes are joined to each other by nodes. The demands of the users of the Culinary Water System are applied to the node closest to the location of the user's property. In the model, water flows through the piping network from the connections with Clearfield City to the demand nodes using the Hardy-Cross network flow distribution procedure.

Peak Demands

The water model was analyzed to supply peak day demands at adequate residual pressures. These demands were generated at each node by universally multiplying the average day demand by 1.75. The projected areas of growth were also assigned an estimated demand according to the planned zoning of that parcel of land.

According to the water model upsized pipes are required in several areas within the City. These pipes are shown in Table 6.

TABLE 6
Required System Waterline Improvements

Location	Size (in)	Quantity
1000 West from 300 North to 200 South	12	2,100 ft
PRV Vault 1000 West at 200 South	6	1
1000 West from 1700 South to 700 South	12	5,300 ft
1000 West from 2700 South to 3700 South Street	10	5,300 ft
Bluff Road from 3000 West to 1550 South	10	2,100 ft
3700 South from 600 West to Bluff Road	12	600 ft
700 South from 1000 West to 2000 West	12	5,300 ft
1700 South from 1250 West to 2000 West	8	4,600 ft
1700 South from 2350 West to Bluff Road	8	2,200 ft
1700 South from 2500 West to 3000 West	12	2,700 ft

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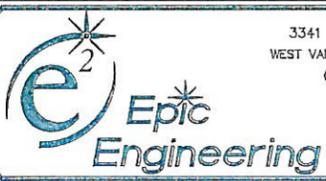
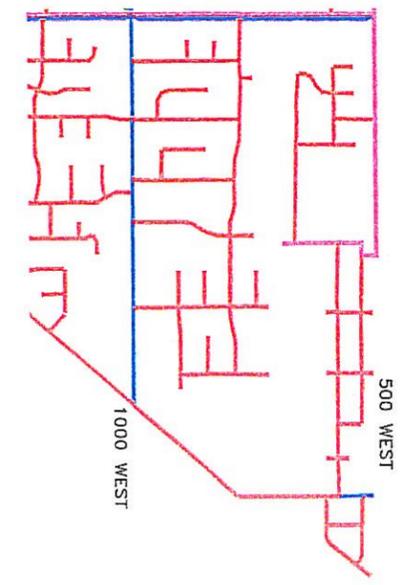
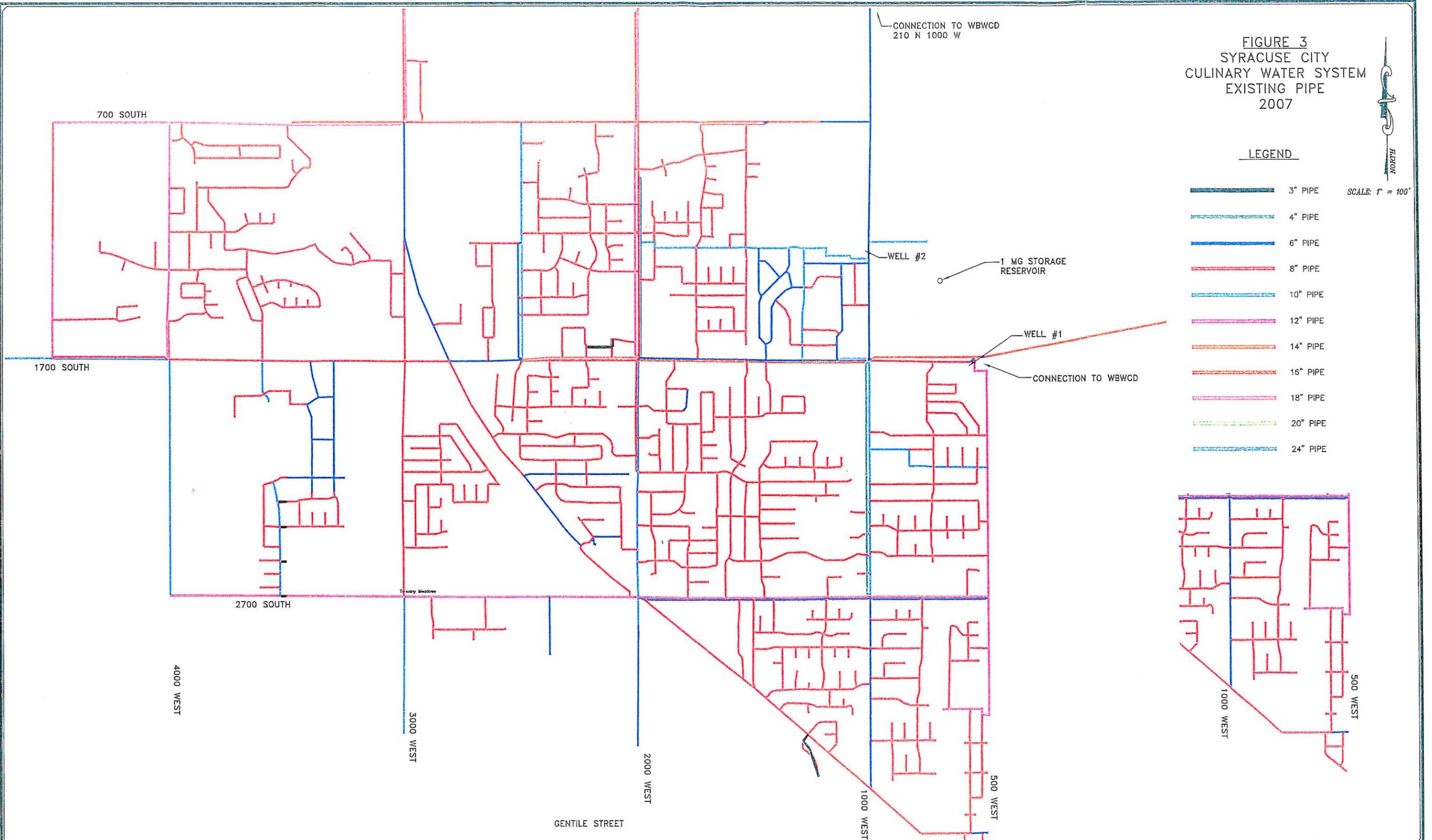
FIGURE 3
SYRACUSE CITY
CULINARY WATER SYSTEM
EXISTING PIPE
2007



LEGEND

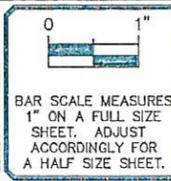
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- 4" PIPE
- 6" PIPE
- 8" PIPE
- 10" PIPE
- 12" PIPE
- 14" PIPE
- 16" PIPE
- 18" PIPE
- 20" PIPE
- 24" PIPE

SCALE: 1" = 100'



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 (801) 955-5605

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FIGURE 3
 SYRACUSE CITY
 EXISTING CULINARY WATER SYSTEM 2007

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REVIEWED RAH	PROJECT NO 06-SY-220
SHEET 1 OF 1	

Source Supply

The City currently provides for the culinary needs of its citizens through contracts with the Weber Basin Water Conservancy District (WBWCD) from two sources. The City also has ground water rights associated with two wells. A description of each of these sources are as follows:

Connection to Clearfield City: The City has a contract agreement with Clearfield City by which WBWCD water is delivered to Syracuse through the Clearfield pipe network. The water then flows through Clearfield City to a pressure reducing valve at 500 West in 1700 South in Syracuse. Approximately half of the water used by the City is delivered through this connection. The other half of the water comes from a connection to WBWCD at 300 North 1000 West. Water then flows through a pressure reducing valve at this location and enters the City.

Deep Wells: The City owns water rights in two well sites. Well number one is located at approximately 500 West and 1700 South. Well number two is located as approximately 900 South and 800 West.

The City desires to provide adequate source capacity to meet Peak Day demands. As discussed above, the daily peak demand is 1.75 times the average demand or 525 gpd. At build-out, to provide 525 gpd, the City will need to supply 5,954,550 gpd or 4,135 gpm.

All the City's wells are older and in need of being upgraded. It is proposed to replace the existing well # 1 with a new well and pump station. The new well will target an increased capacity to utilize the water rights of both well sites. If the replacement well fails to utilize all of the City's water rights then an additional replacement well may be needed at the other well site in the future.

New Water Treatment Plant

Water is purchased from WBWCD to meet the water demands of the City. Weber Basin Water Conservancy District has contacted their clientele and has informed them that each City will have to find alternative sources of water as they will not be able to meet all the future demands. Weber Basin's water will continue to increase in cost to meet future needs incurred by their operation plants. Syracuse City has land drains located in various parts of the City, which provide a viable option to use as a source for the culinary water system. Shallow water right transfers will need to be obtained for the use of this water and a water treatment plant will need to be constructed to use this water. A present value cost analysis for 20 years shows that the cost of a treatment plant will be less than purchasing additional water from Weber Basin. In addition to the plant being able to provide an alternative source of water to the City, the treatment plant would be located on the West side of the City thus providing an alternative supply source and desired redundancy to the City.

Reservoir Storage Analysis

Utah State Drinking water rules require that the City supply enough water storage to provide for peak day demands for indoor and outdoor usage, fire suppression volume and for emergencies. The required storage has been sized with the capacity to provide one peak month average day indoor demand along with a fire flow storage of 2,000 gpm for two hours and a suggested 20 percent operating reserve for emergencies. The indoor storage is calculated by taking the average daily residential demand of 300 gallons per day times the number of connections times a peaking factor of 1.75 for summer peak day usage.

The City has two water storage reservoirs totaling 3 million gallons. A 1 million gallon reservoir is located directly to the east of the northern part of the City on a property to the West of the Freeport Center. The 1 million gallon reservoir is a stand pipe tank 105 feet high.

The City also owns a 2 million gallon reservoir constructed on a hill side to the east of the I-15 freeway in Clearfield. This reservoir is located on a property with several other reservoirs owned by Clearfield and connects to the Clearfield pipe network. Syracuse constructed this reservoir as part of a contractual, trade agreement with Clearfield where Clearfield is utilizing Syracuse's storage in trade for Clearfield transporting water through their pipe network to Syracuse. Table 7 shows reservoir projections for the City.

TABLE 7
Reservoir Storage Projections

Description	Present (2006)	Future (2030)
Average number of connections	6,110	11,342
Daily Maximum Month Demand (MG)	3.21	5.95
Fire Flow (MG)	0.60	0.60
20 percent Operation Reserve (MG)	0.76	1.31
Total (MG)	4.57	7.86
Existing Storage (MG)	3.00	3.00
Additional Storage Needed (MG)	1.57	4.86

The City's current 3 million gallon storage is not sufficient at present. By the year 2030 storage requirements will exceed existing storage by 5 MG. It is anticipated that the new well will be able to pump 1500 gpm. With a back-up generator to provide un-interrupted water supply, this supply can take the place of 2.16 million gallons of storage requirements. With the

relocation of the existing well and the new well building, the City will have existing capacity through 2014. It is anticipated that a water treatment plant will provide an additional 1000 gpm with a back-up generator to provide un-interrupted water supply in addition to a 1.25 MG storage tank. Together this will supply an additional 2.69 million gallons of storage requirement. This tank will be constructed at the water treatment plant site. A 1.25 MG reservoir will need to be constructed to supply additional storage.

Capital Improvement Priority

The capital improvements discussed above are listed according to priority in Table 8 below. The location of these improvements is shown in Figure 4.

TABLE 8
Prioritization of Capital Improvements

Priority	Improvement	Year
1	Impact Fee Study	2007, 2012, 2019
2	Drill Well	2007
3	1700 South from 2350 West to Bluff Road	2007
4	1700 South from 2500 West to 3000 West	2007
5	Well Building	2008
6	1700 South from 1250 West to 2000 West	2009
7	1000 West from 2700 South to 3700 South	2010
8	Water Treatment Plant Study	2010
9	PRV Vault 1000 West at 200 South	2010
10	Bluff Road from 3000 West to 1550 South	2011
11	Water Treatment Plant Land Purchase	2011
12	1000 West from 1700 South to 700 South	2012
13	1 MG Storage Tank	2013
14	700 South from 1000 West to 2000 West	2014
15	3700 South from 600 West to Bluff Road	2014
16	1000 West from 300 North to 200 South	2014
17	Water Treatment Plant (Loan)	2015

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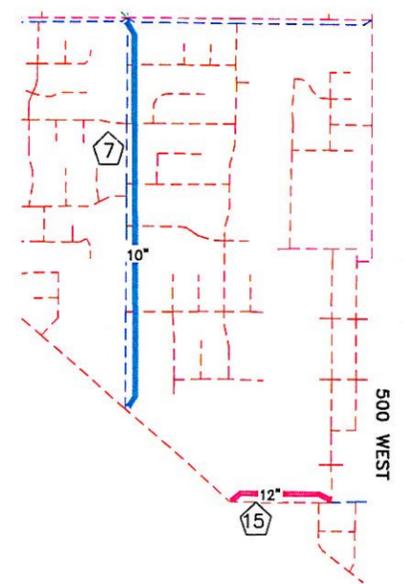
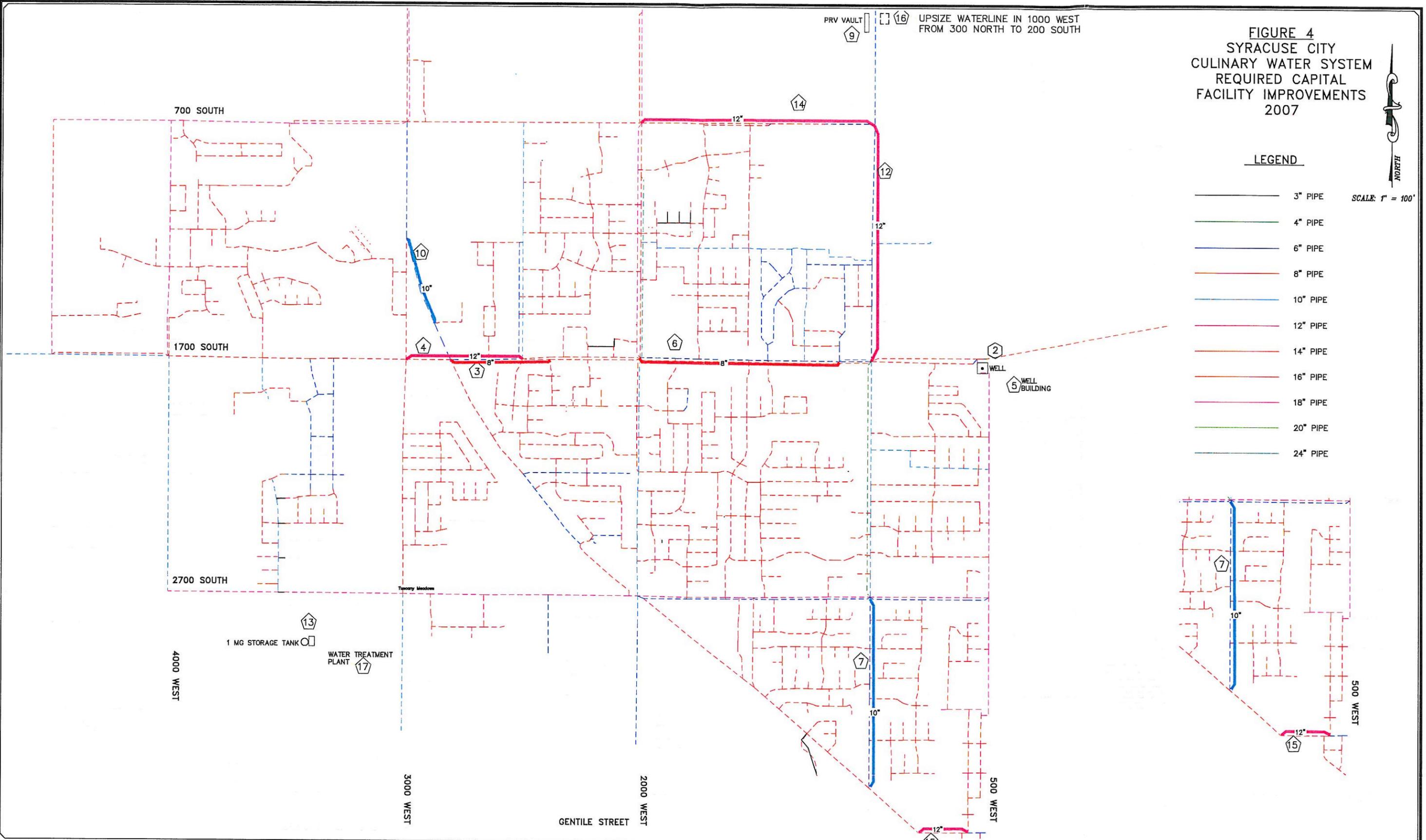
FIGURE 4
SYRACUSE CITY
CULINARY WATER SYSTEM
REQUIRED CAPITAL
FACILITY IMPROVEMENTS
2007



LEGEND

- 3" PIPE
- 4" PIPE
- 6" PIPE
- 8" PIPE
- 10" PIPE
- 12" PIPE
- 14" PIPE
- 16" PIPE
- 18" PIPE
- 20" PIPE
- 24" PIPE

SCALE: 1" = 100'



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 ACCORDINGLY FOR
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FIGURE 4

CULINARY WATER SYSTEMS

REQUIRED CAPITAL FACILITY IMPROVEMENTS 2007

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REVIEWED RAH	PROJECT NO 06-SY-220
SHEET 1 OF 1	

Capital Facility Improvement Costs

The proposed capital improvements discussed above are each listed in Table 9 below. The costs of these capital facility improvement projects are based on actual as-constructed costs of similar projects and engineering estimates. Improvement costs include actual or estimate contractor costs, plus design (6%) and construction management (4%) costs, legal costs (1%), contingency (10%), and debt service costs on any planned loan. Table 9 shows the present value total costs of each project and Table 10 shows the Improvement Costs.

TABLE 9
Capital Facility Costs

Priority	Capital Improvement	Impact Cost
1	Impact Fee Study	\$140,000
2	Drill Well	\$968,000
3	1700 South from 2350 West to Bluff Road	\$159,720
4	1700 South from 2500 West to 3000 West	\$310,365
5	Well Building	\$968,000
6	1700 South from 1250 West to 2000 West	\$333,960
7	1000 West from 2700 South to 3700 South Street	\$513,040
8	Water Treatment Plant Study	\$10,000
9	PRV Vault 1000 West at 200 South	\$48,400
10	Bluff Road from 3000 West to 700 South	\$203,280
11	Water Treatment Plant Land Purchase	\$100,000
12	1000 West from 1700 South to 700 South	\$609,235
13	1 MG Storage Tank	\$937,500
14	700 South from 1000 West to 2000 West	\$609,235
15	3700 South from 600 West to Bluff Road	\$68,970
16	1000 West from 300 North to 200 South	\$241,395
17	Water Treatment Plant (Loan)	\$4,976,000
Total Capital Facility Cost		\$11,197,100

TABLE 10
Total Improvement Costs

	Cost
Well and Well Building	\$1,936,000
Water Treatment Plant	
Feasibility Study	\$10,000
Land Purchase	\$100,000
Water Treatment Plant Construction	\$4,356,000
Loan Payback	\$620,000
Water Treatment Plant Total	\$5,086,000
Transmission Lines	\$3,097,600
Storage Reservoir	\$937,500
Impact Fee Planning	\$140,000
Total Improvement Costs	\$11,197,100

SYRACUSE CITY
CULINARY WATER SYSTEM - IMPACT FEE WRITTEN ANALYSIS
IMPACT FEE DETERMINATION

IMPACT FEE

Impact Fee Calculation

The impact Fee should be in a form that is flexible enough to be applied to several types of connections such as residential connections, apartments, parks or commercial property. The common quantity for all connections is the Residential Equivalent (RE). Accordingly, impact fees for the City's Culinary Water System are based on residential equivalents.

The impact fee is calculated as follows:

$$\text{Impact Fee per RE} = \frac{\text{Cost of new capital facility improvements} - \text{Collected Fees}}{\text{Number of future RE connections}}$$

The numerator in this formula is the cost of the Capital Improvements calculated in Table 10 above minus the amount of unassigned collected Impact Fees remaining in City accounts at the time of this analysis. The denominator is the number of future residential equivalents projected to connect to the Culinary Water System over the next twenty four years.

The impact fee for future improvements is calculated as follows.

$$\$11,197,100 - \$1,169,883.76 = \$10,027,216.24$$

$$\$10,027,216.24 / 5,523 \text{ connections} = \$1,815.54/\text{connection}$$

$$\text{Total Impact Fee} \quad \$1,815.54$$

These fees are applied to connections with 3/4-inch meters.

1-inch Meter Connection Fees

When designing impact fees for non-standard water connections, both expected annual water use and peak meter capacity are considered. It is assumed that the water use characteristics for a 3/4-inch connection and a 1-inch connection are similar, so the recommended fee for a 1-inch meter connection is based on the maximum meter capacity. The maximum safe capacity of a 3/4-inch meter is 30 gallons per minute, and the maximum safe capacity of a 1-inch meter is 50 gallons per minute. Therefore the connection fee for a 1-inch meter is calculated as follows:

$$1\text{-inch Capital Facilities Impact Fee} = \$1,815.00 * (50/30) = \$3,025.00$$

Therefore, the total connection fee for a 1-inch connection is **\$3,025.00**.

Non-Standard Size Meter Connection Fees

A non-standard connection is any connection that is not a 3/4-inch or 1-inch connection. Non-standard connections include 1 1/2-inch, 2-inch, 3-inch and larger metered connection. Most of the components of the connection fee are the same for non-standard meter sizes as they are for the standard connection.

Impact fees for water connections larger than 1-inch diameter should be set individually based on a formula that considers the expected average water use of the improvement and the peak capacity for the desired size of water meter. The expected average annual water use and the desired meter size must be known or estimated to calculate impact fees. The following formula is recommended to calculate the impact costs.

$$\text{Water Impact Fee} = \$1,815.00 * [(0.48 * \text{RE}) + (0.52 * \text{MC}/30 * (\text{PF}/59 - 1/59))]$$

Where: RE = Residential Equivalent (expected annual average demand in gal per day divided by the residential average usage of 300 gal/day)

MC = Maximum Safe Intermittent Meter Capacity (gpm)

PF = Peaking Factor (MC divided by average annual demand in gpm)

The factors 0.48 and 0.52 were assumed to allocate system depreciation costs to base capacity and to extra capacity. Base costs are costs of service that would result from delivery of water at a constant rate. Extra capacity costs are costs of service that result from delivery of water at peak hourly and peak daily rates. System depreciation costs were allocated using master planned peaking factors and the base-extra capacity methodology outlined by the AWWA. The factor of 0.48 represents the ratio of base depreciation costs to total depreciation costs, and the factor of 0.52 represents the ratio of extra-capacity depreciation costs to total capacity depreciation costs. The constant 30 is the maximum safe capacity in gpm of a 3/4-inch meter and the constant 59 is one less than the peaking factor for a typical single residential connection.

The meter capacity for different meter sizes and meter types is shown in Table 11 below.

TABLE 11
Meter Capacities

Meter Size	Meter Type	AWWA Safe Max. Operation Capacity (gpm)
3/4"	Positive Displacement	30
1"	Positive Displacement	50
1 1/2"	Positive Displacement	100
2"	Turbine	160
1 1/2"	Turbine	100
2"	Turbine	160
3"	Turbine	350
4"	Turbine	600
6"	Turbine	1,250
8"	Turbine	1,800
2"	Compound	160
3"	Compound	320
4"	Compound	500
6"	Compound	1,000
8"	Compound	1,600

The recommended Impact Fee for each meter size are summarized in Table 12 below. Because the impact fee for meters larger than 1-inch are based upon a formula that depends upon the actual annual water usage and meter capacity, the Impact fee for these meters shown in Table 12 is the minimum possible Fee based on compound meters. Actual Fees for these meter sizes may be larger than the shown minimum.

When the impact fee calculated by the formula is graphed against the water usage, the resulting line is a upward facing curve with the minimum fee at a certain usage value. At this water usage rate, and smaller, the minimum fee is applied. When water usage is greater than the

minimum, the fee is calculated by the formula is applied. The curves for each meter size are shown in the Appendix.

TABLE 12
Impact Fee Summary

	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"
IMPACT FEE	\$1,815	\$3,025	\$9,397	\$15,034	\$30,067	\$46,980	\$93,960	\$150,336

* These Impact Fee values for meters 1 ½-inch and larger are minimum fees per the formula

Application of Impact Fee Charges

Impact Fees are assessed to individual new residential Lots, commercial connections and institutional connections at the time such connections initiate an account with the City. Impact fees are not charged to any residential connection within the City that has an existing residential structure that has a operable culinary lateral at the time the Impact Fee is adopted.

Impact Fees shall be effective the date specified in the enacting Ordinance as passed by the City Council. The impact fee shall apply to all newly constructed homes and Subdivisions whose Impact Fees are not payed on the date the Impact Fees are ratified.

Administration of Charges

The impact fees, when imposed, should be separately deposited and maintained from other City revenues and impact fees, and restricted to Culinary water capital improvement purposes. This should be performed in a manner which provides a clear audit trail, which can demonstrate that they were used only for capital purposes within the system for which they were collected.

Whenever a developer constructs system facilities which are included in the capital improvement project list, Syracuse should compensate that developer in one of two ways:

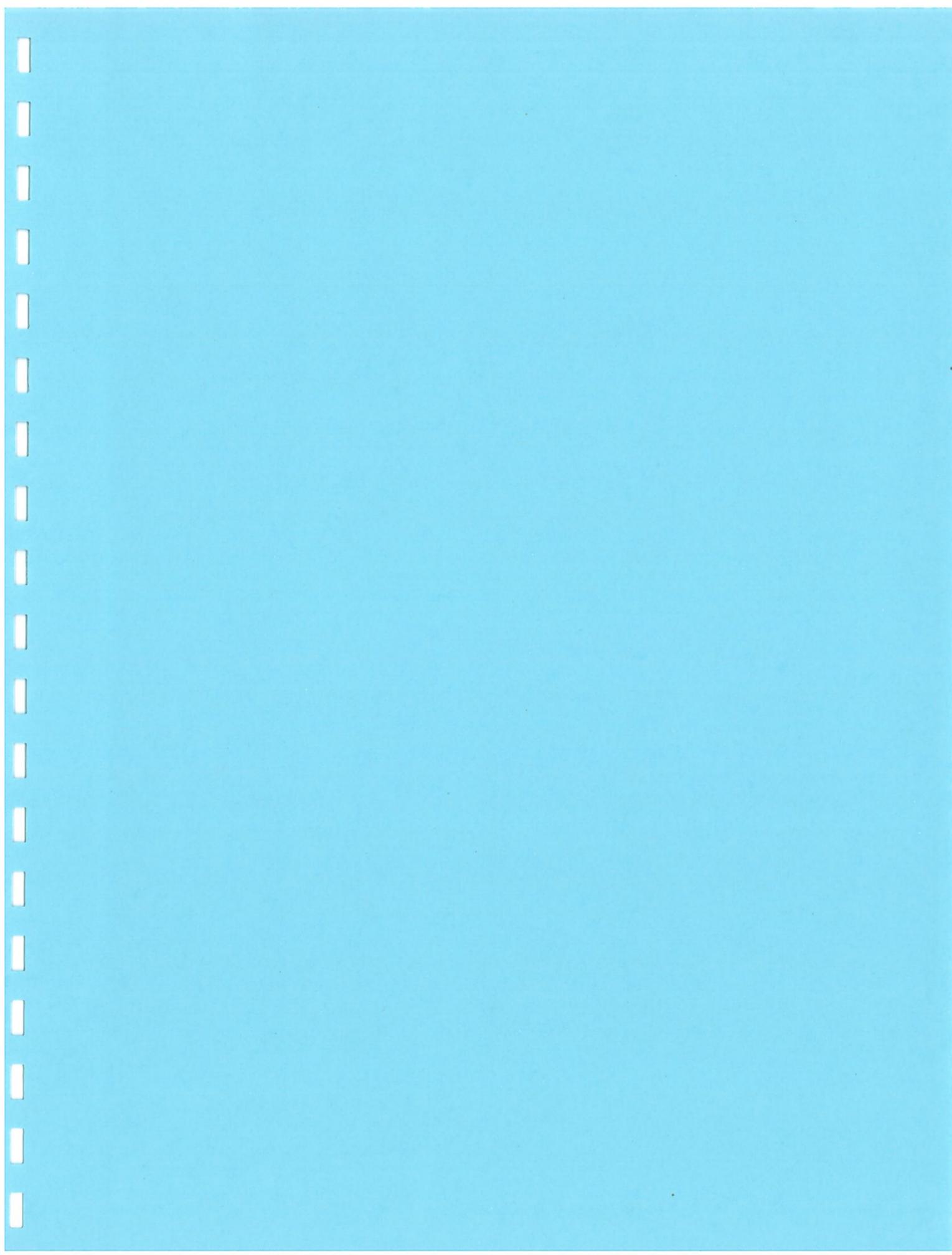
1. Through issuance of impact fee credits for those project costs, which the developer(s) may use toward their impact fees. Such credits should have a finite life (e.g. ten years), be non-transferable, and be limited to the specific system for which issued (e.g. Culinary water versus culinary water); or
2. Through payment toward the portions of the project (such as oversizing) which provides general City benefit and are included in the impact fee basis.

The City's compensation to the developer should be limited to the lesser of the developer's actual costs for the City share of the project, or the City Engineer's cost estimate.

REVIEW OF IMPACT FEE VERSES UTAH STATE CODE REQUIREMENTS

As part of the Impact Fee Written Analysis a comparison of the impact fee with the Utah Code was performed to show compliance with the Impact Fee Act. The attached tables summarize this comparison for the benefit of the reader.

APPENDIX



LARGE METER FEE FIGURES

METER CAPACITIES

METER CAPACITIES

Meter Size (in)	Meter Type	Meter Capacity (gpm)	Minimum Average Water Use (gpd)	Minimum Impact Fee (\$)
1 1/2"	Pos. Displ.	100	1,600	\$9,397
2"	Pos. Displ.	160	2,600	\$15,034
1 1/2"	Turbine	100	1,600	\$9,397
2"	Turbine	160	2,600	\$15,034
3"	Turbine	350	5,700	\$32,886
4"	Turbine	600	9,800	\$56,377
6"	Turbine	1,250	20,300	\$117,450
8"	Turbine	1,800	29,300	\$169,128
2"	Compound	160	2,600	\$15,034
3"	Compound	320	5,200	\$30,067
4"	Compound	500	8,100	\$46,980
6"	Compound	1,000	16,300	\$93,960
8"	Compound	1,600	26,000	\$150,336

FIGURE B-1
1 1/2" Pos. Disp. Meter

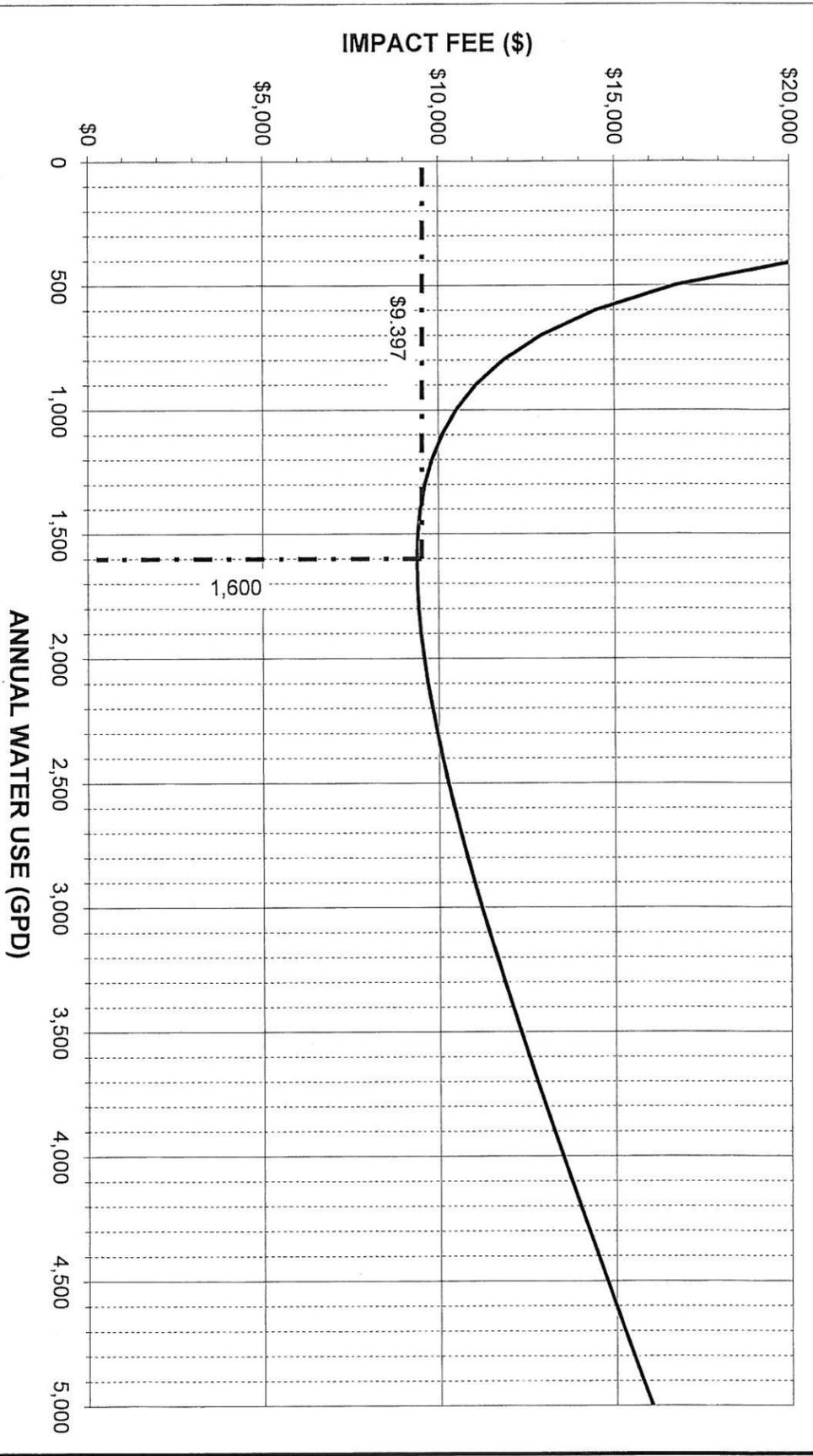


FIGURE B-2
1 1/2" Turbine Meter

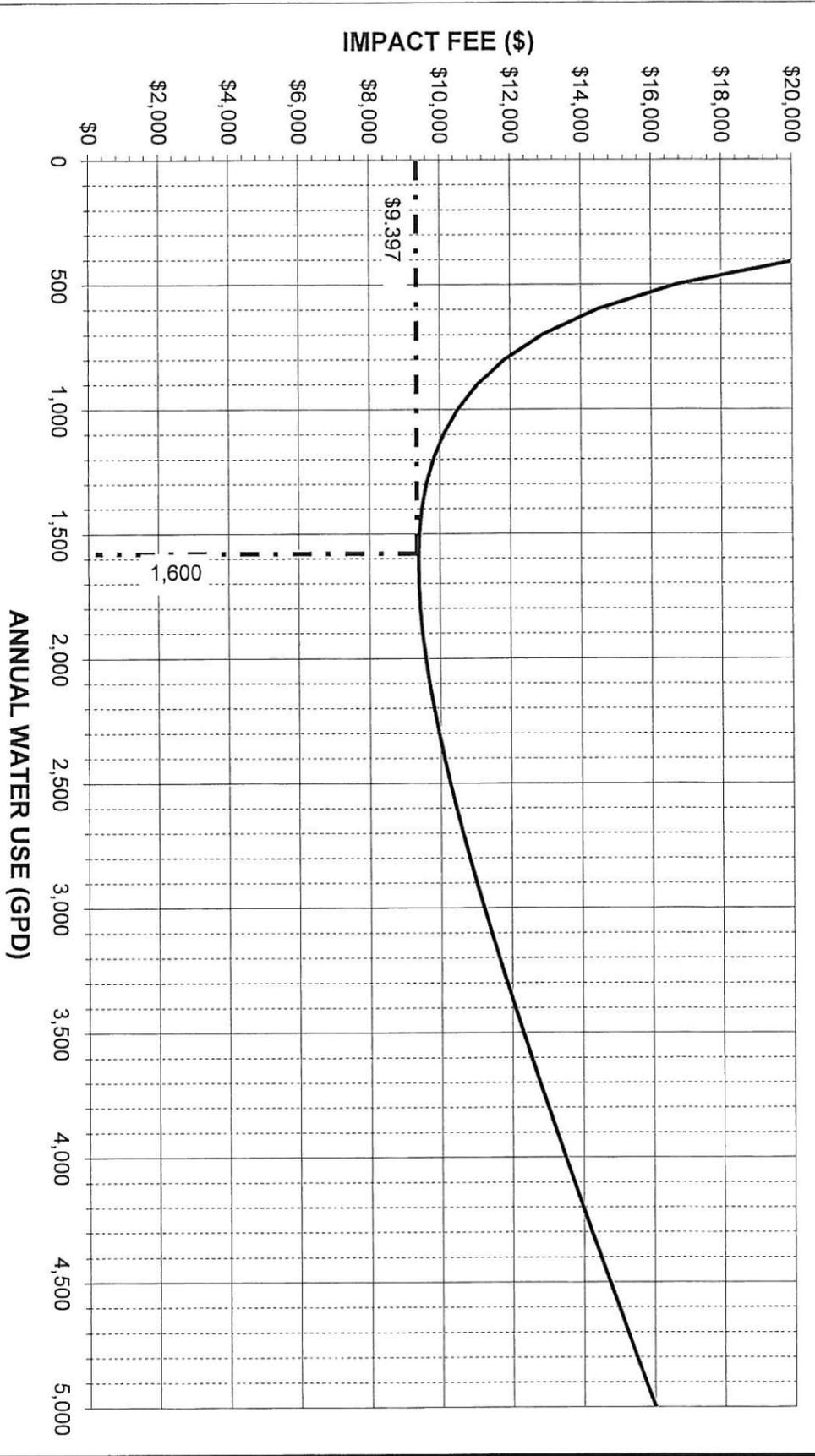


FIGURE B-3
2" Compound Meter

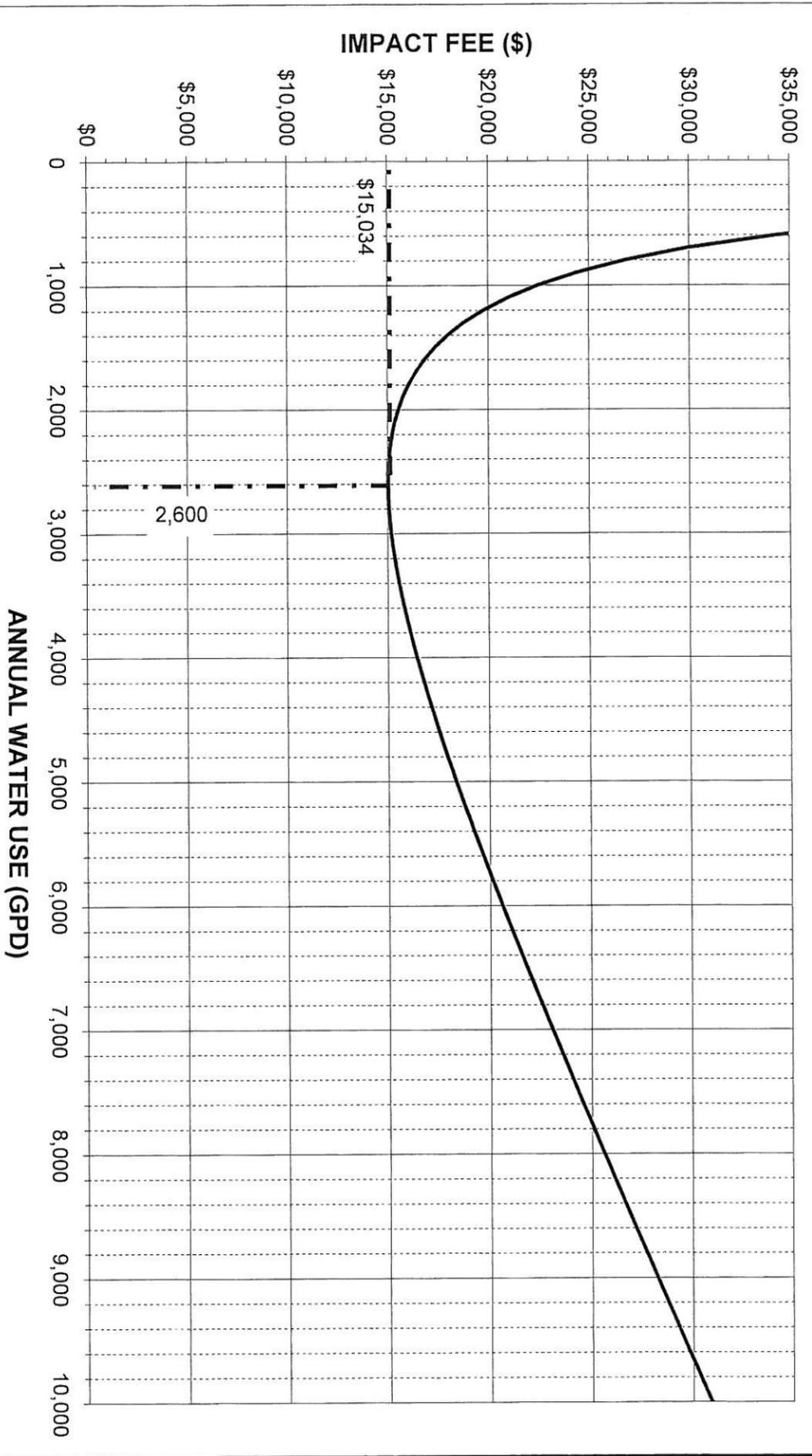


FIGURE B-4
2" Turbine Meter

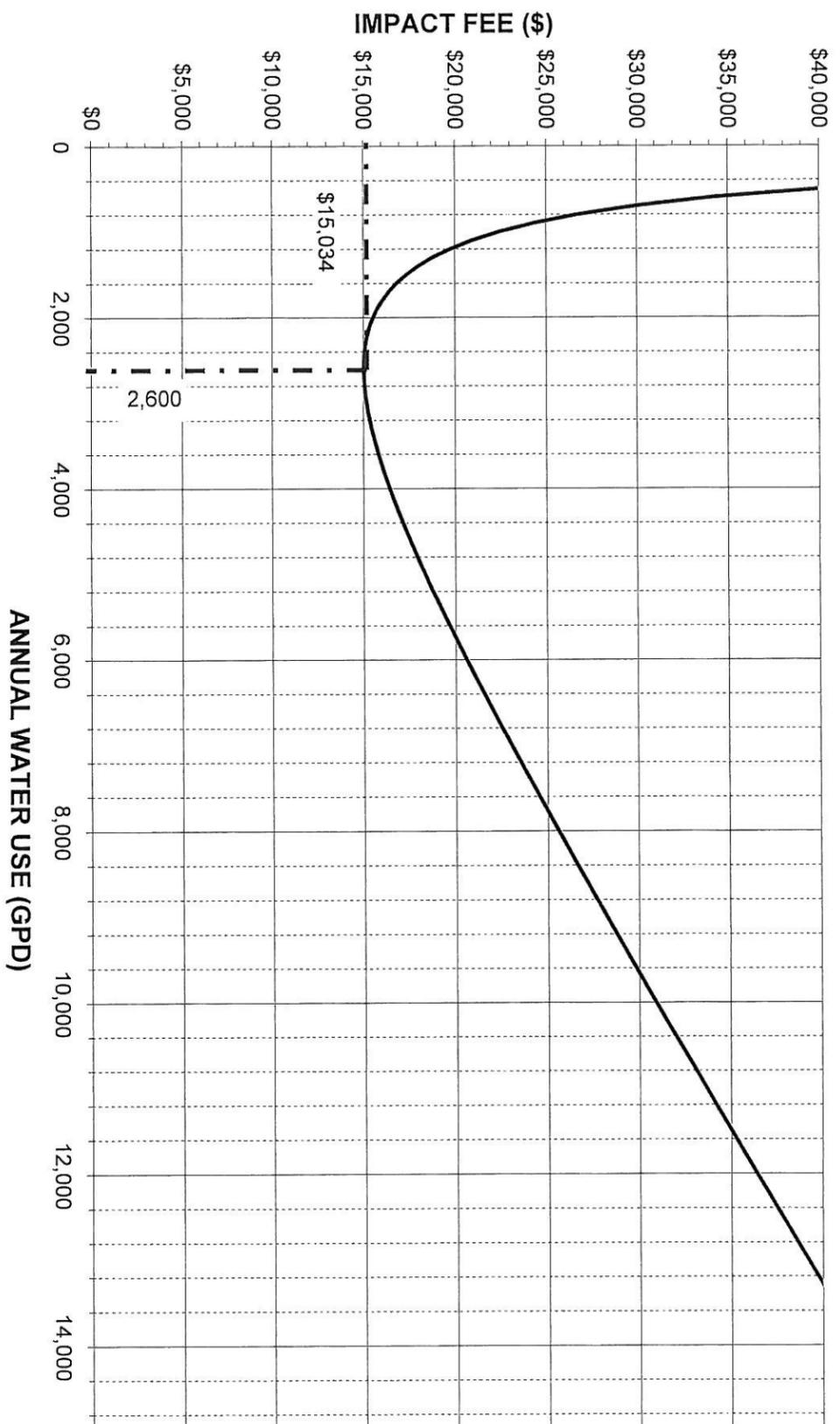


FIGURE B-5
2" Compound Meter

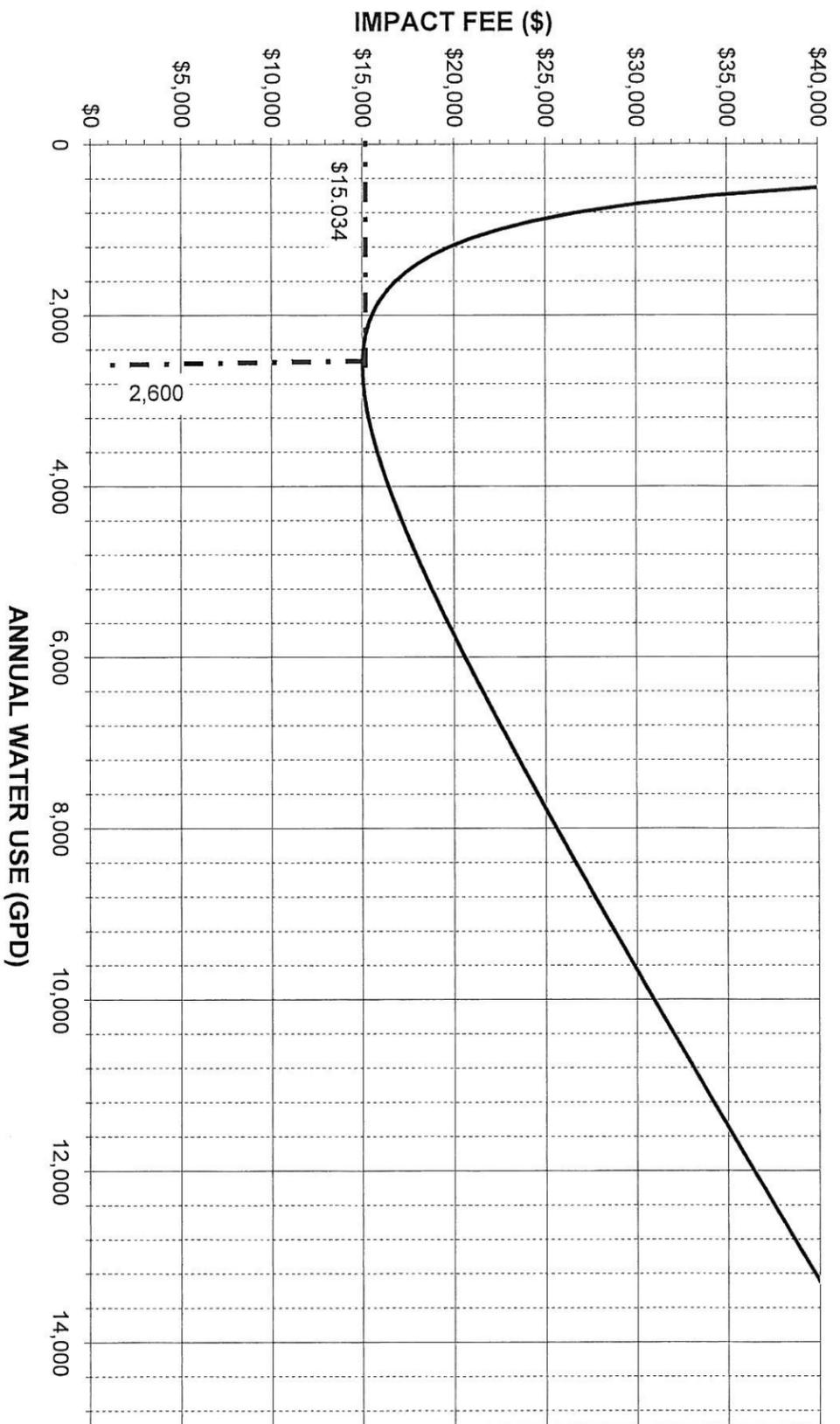


FIGURE B-6
3" Turbine Meter

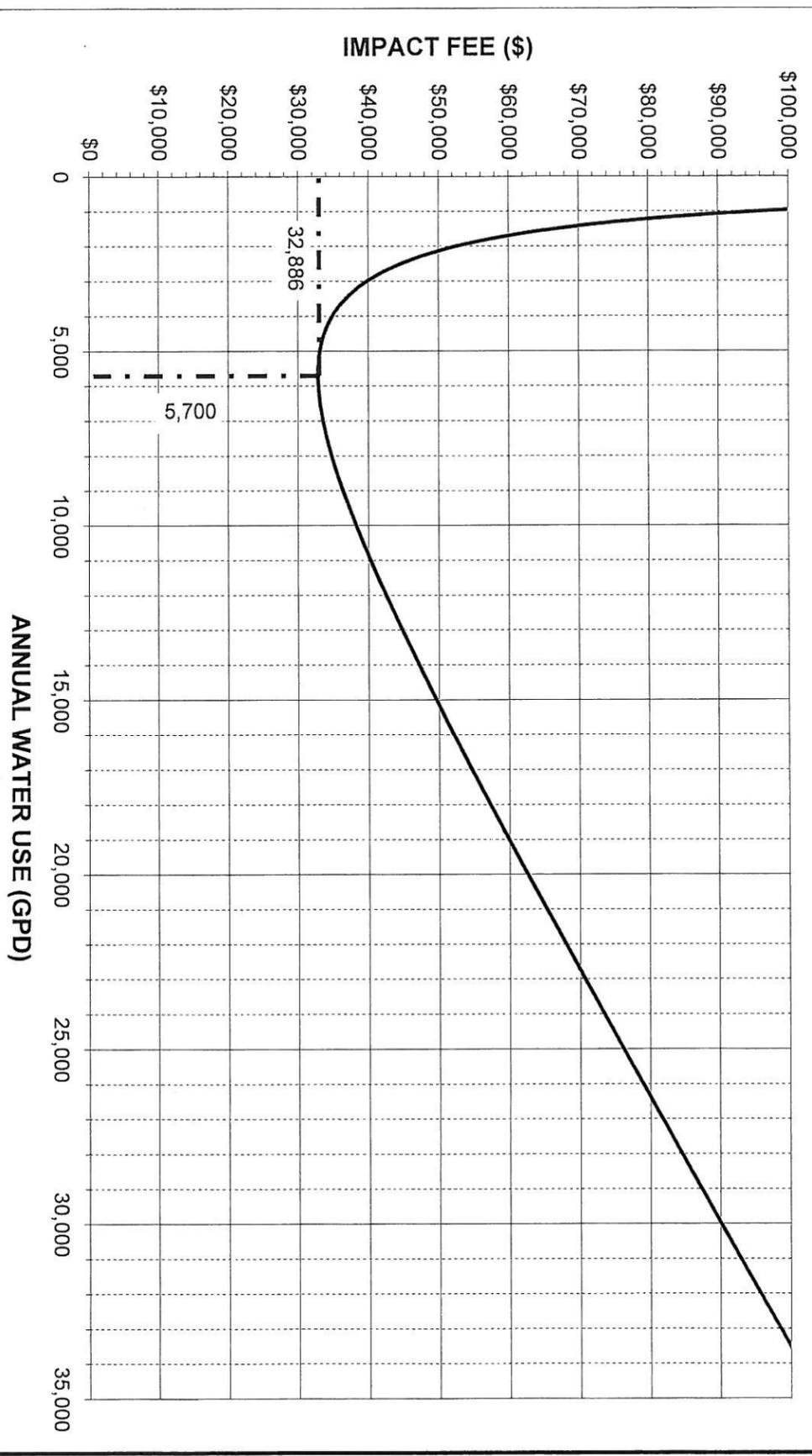


FIGURE B-7
3" Compound Meter

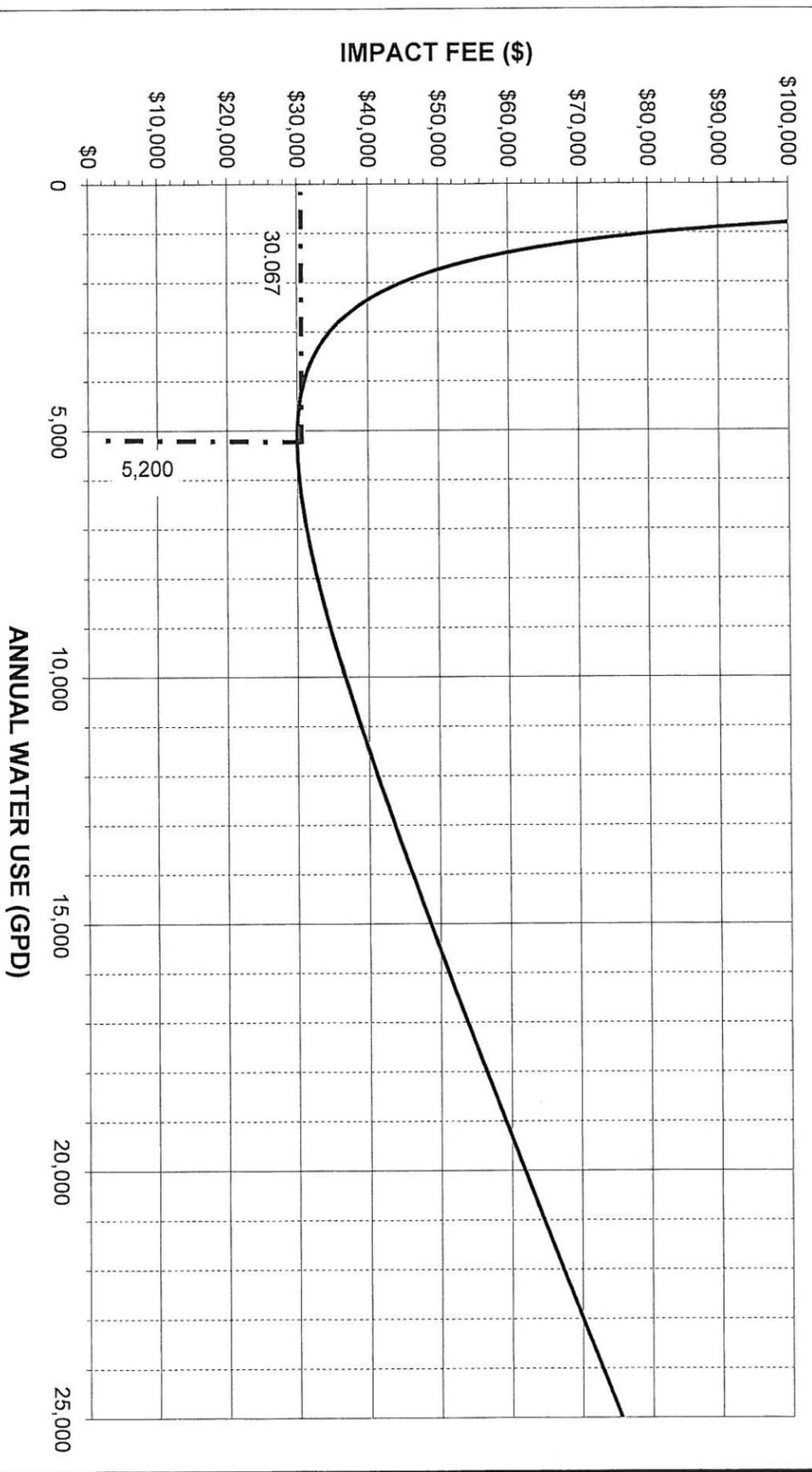


FIGURE B-8
4" Turbine Meter

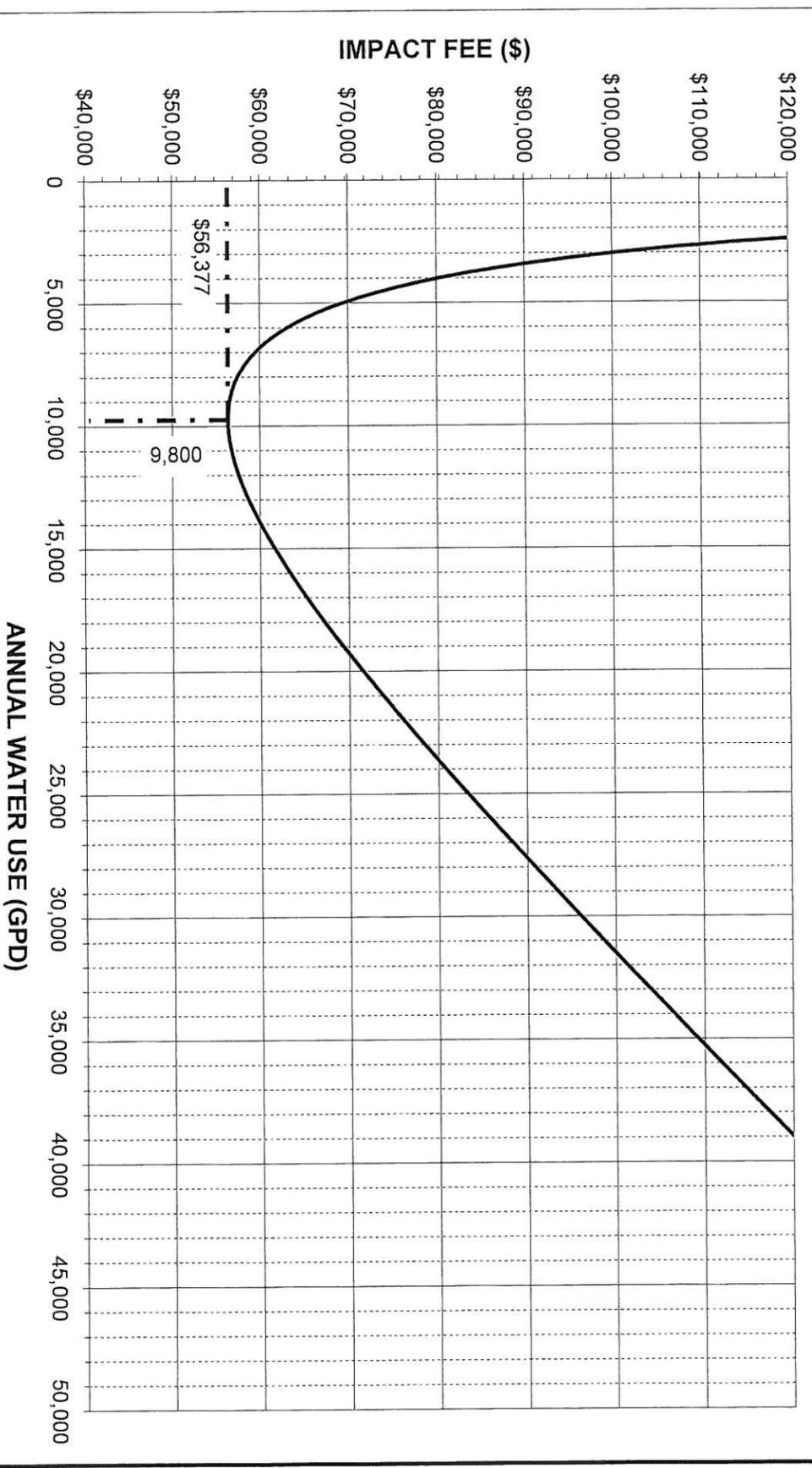


FIGURE B-9
4" Compound Meter

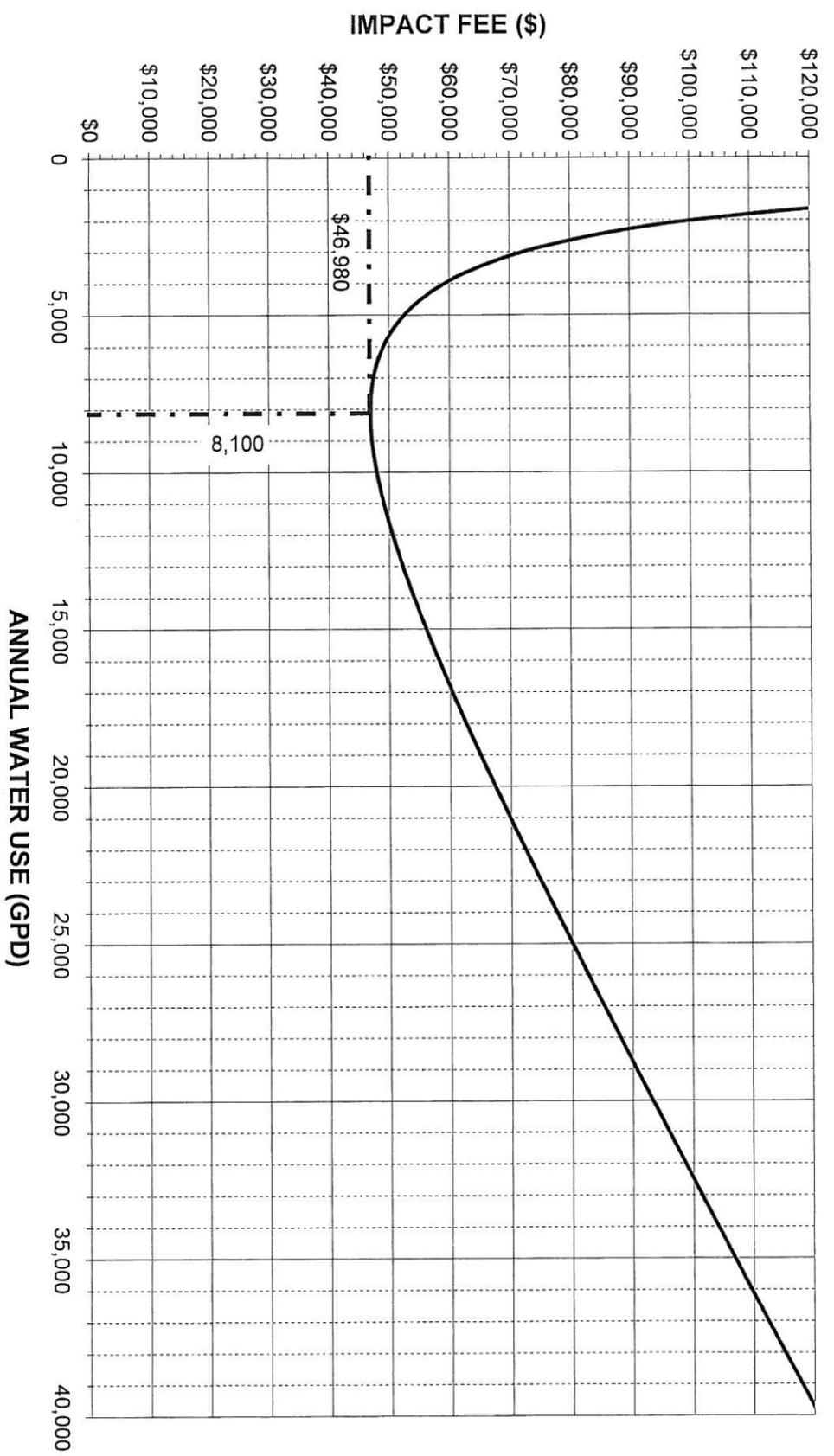


FIGURE B-10
6" Turbine Meter

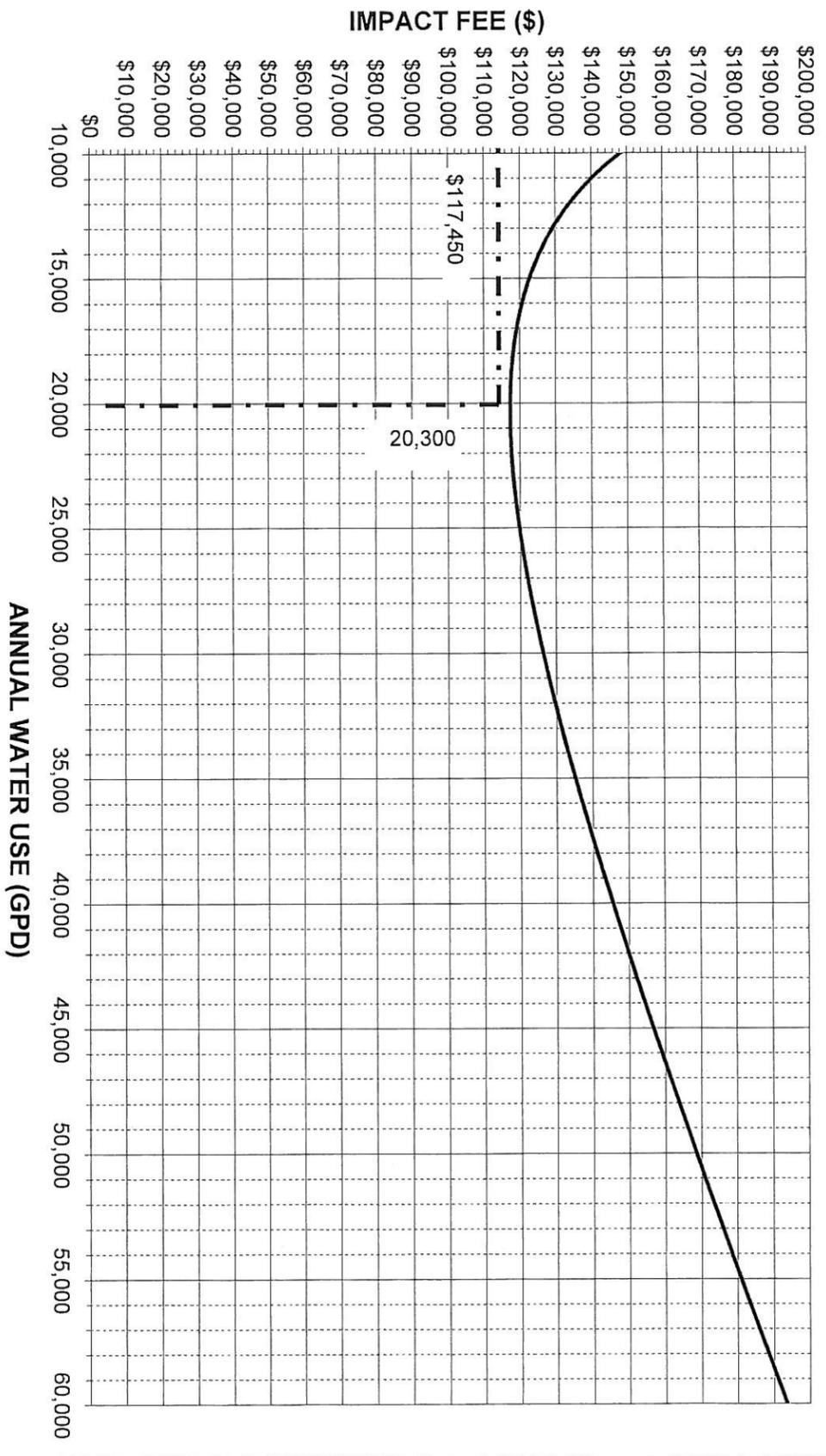


FIGURE B-11
6" Compound Meter

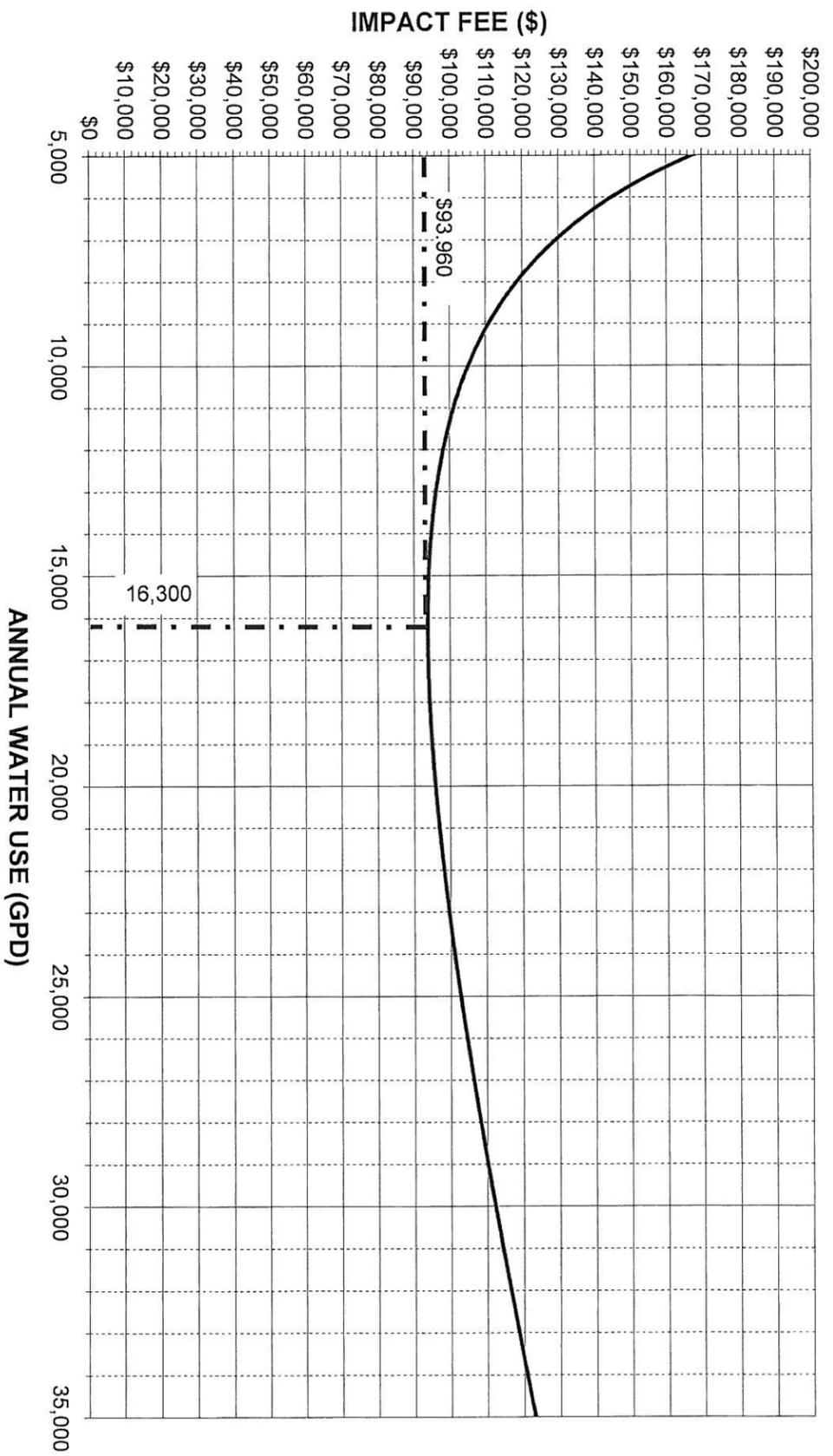


FIGURE B-12
8" Turbine Meter

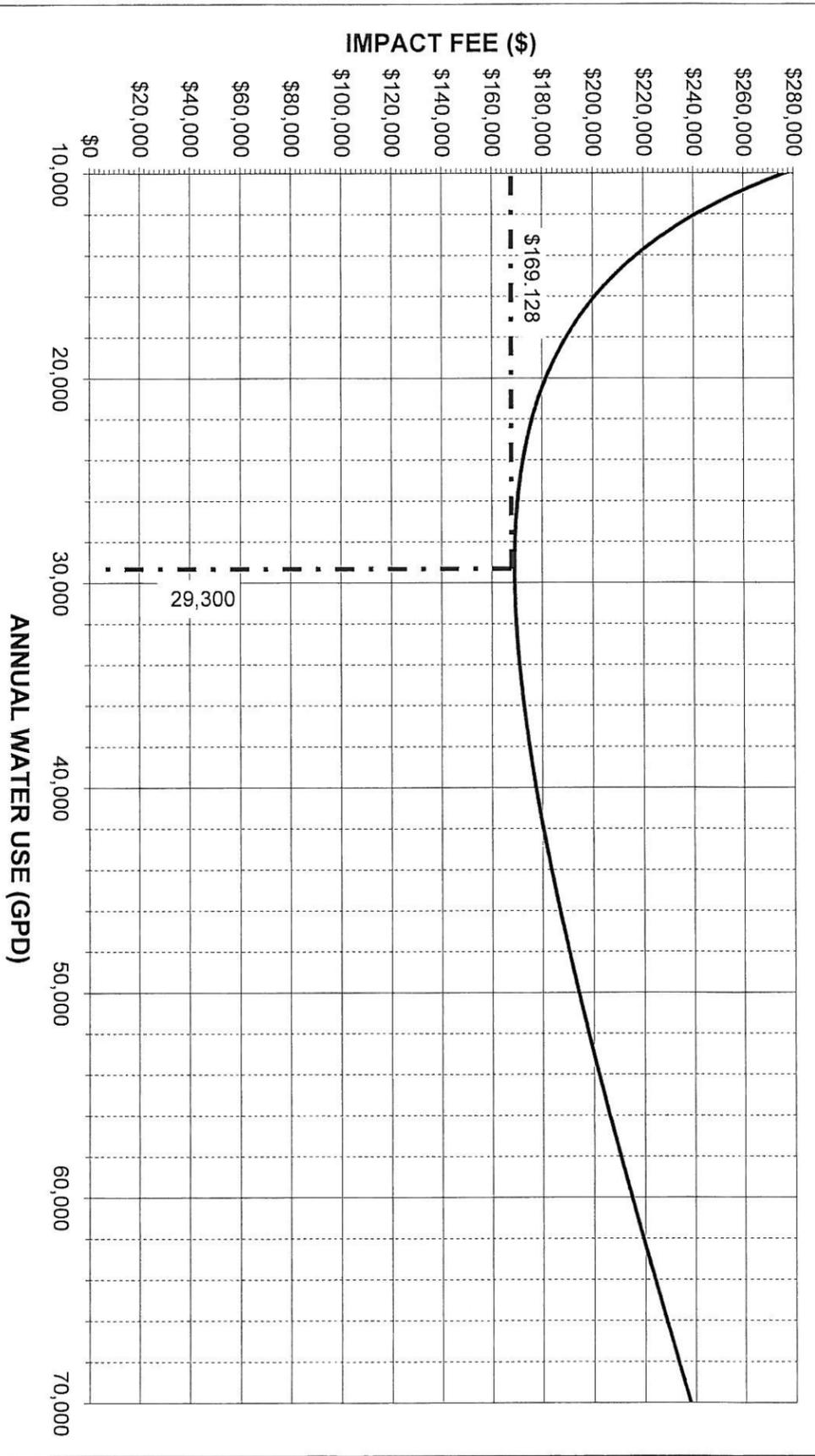


FIGURE B-13
8" Compound Meter

