REGIONAL WATER STUDY
LUCAS COUNTY AND CITY OF TOLEDO

JUNE, 1999

UPDATED: JANUARY, 2000
January 20, 2000

Ms. Sandy Isenberg, President
Mr. Bill Copeland
Mr. Harry Barlos
Lucas County Board of Commissioners
One Government Center, Suite 800
Toledo, OH 43604

Mayor Carleton S. Finkbeiner and Council
One Government Center, Suite 2200
City of Toledo, OH 43604

Re: Lucas County, Ohio
Regional Water Study
LUC9803R

Dear Commissioners, Mayor and Council:

Finkbeiner, Pettis & Strout, Inc. is pleased to submit this Study which evaluates the concept of developing a Regional Water System to serve customers in Toledo and surrounding communities.

Included in the Study is a summary of the replacement cost, current value and future capital improvement needs of the communities located in the Regional Water Service area. Using various approaches, this information is used to illustrate the financial impact and cost of water to each community served by the Regional Water System. The findings of this Study are intended to promote future dialogue in the development of a Regional Water system by interested parties.

We would like to express our appreciation to the Lucas County Sanitary Engineer's Office, City of Toledo staff, and surrounding communities in their willing cooperation and assistance during the preparation of this study.

We realize our responsibility in this effort and offer our assistance in the further development of a Regional Water System.

Yours truly,

Phillip L. Covell, P.E.
Warren E. Henry, P.E.
Kurt A. Smith, P.E.

KAS/vjm

Enclosure
Regional Water Study

- Objectives
  - Determine the feasibility of forming a Regional Water System by combining the existing water systems in Fulton, Lucas, Monroe and Wood Counties into one common system.
  - Enable informed dialogue between communities subsequently desiring to form a Regional Water System.

- Focus
  - Identify the boundaries of a Regional Water System.
  - Determine present and estimate future water demands.
  - Inventory and value major assets of each community’s water system.
  - Compile future capital improvements in the regional water service area.
  - Summarize the present cost of water to existing customers located in each community.
  - Evaluate various approaches to the formation of a Regional Water System.
  - Project the cost of water to customers for each of the approaches evaluated.
EXISTING WATER CONTRACT SERVICE AREAS

REGIONAL WATER STUDY

FIGURE II-1
Regional Water Study
Water System Demands

<table>
<thead>
<tr>
<th></th>
<th>Toledo</th>
<th>Surrounding Communities</th>
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<tbody>
<tr>
<td>Existing</td>
<td>67%</td>
<td>33%</td>
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<tr>
<td>Year 2025</td>
<td>51%</td>
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Area and Year
Regional Water Study
Replacement Value

Surrounding Communities
32%

$398,000,000

Toledo
68%

$854,000,000

TOTAL REPLACEMENT VALUE $1,252,000,000
Regional Water Study
Current Value

Surrounding Communities
$335,000,000
36%

Toledo
$584,000,000
64%

Toledo
Major infrastructure
$395,000,000

Toledo
Local infrastructure
$189,000,000

TOTAL CURRENT VALUE $919,000,000
Regional Water Study

Approaches to a Regional Water System

Option A

- Form a regional water system with all communities including Toledo.

- All communities except Toledo, lease/sell their system to the regional water system for $1.00. Toledo lease/sells 50% of its major system assets for $197,500,000. (Based on projected 2025 water demand).

- Pool operation and maintenance, existing debt and projected capital improvements debt costs into a single rate/1000 cubic feet.

Option B

- Same as Option A except Toledo reduces rates to it's own customers with investment interest from $197,500,000 (50% of Toledo major system assets).

Option C

- A separate regional water system excluding Toledo is formed between Monroe County, Sylvania, Maumee, Lucas County, Fulton County, Waterville, and Whitehouse.

- A new 50 MGD water treatment plant in Monroe County with intake, pumping stations and trunk mains are constructed for $168,000,000. (Based on projected 2025 water demand).

- For the regional water communities, operation and maintenance and capital improvements are pooled into a base rate/1000 cubic feet. Existing debt is retained with respective community.
Option D

- A separate regional water system excluding Toledo is formed between Monroe County, Sylvania, Maumee, Lucas County, Fulton County, Waterville, Whitehouse, Wood County, Perrysburg, Rossford and Northwood.

- A new 70 MGD water treatment plant in Monroe County with intake, pumping stations and trunk mains are constructed for $214,000,000. (Based on projected 2025 water demand).

- For the regional water communities, operation and maintenance and capital improvements are pooled into a base rate/1000 cubic feet. Existing debt is retained with respective community.

Option E

- Form a regional water system with all communities including Toledo.

- A new 50 MGD water treatment plant in Monroe County with intake, pumping stations and trunk mains are constructed for $168,000,000.

- Pool operation and maintenance, existing debt and projected capital improvements debt costs into a single rate/1000 cubic feet.

Option F

- Same as Option E except a new 70 MGD water treatment plant in Monroe County with intake, pumping stations and trunk mains are constructed for $214,000,000.
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* Renewal rate based on current City of Toledo policy for renewal of water agreement contracts that are to expire. Renewed contracts will be charged First Block + 75% inside Lucas County and First Block + 115% outside Lucas County.

** Oregon already has its own water treatment plant and complete water system and does not share in major infrastructure capital costs for Options A & B.

Note - Option B is based on City of Toledo reducing inside customer rate with annual investment interest rate of 5% on the lease/sell value of $197,500,000 (50% Toledo system).
- Options C, D, E & F - For regional water system communities Option C, D, E & F only includes major infrastructure as listed in NEW WTP IN MICHIGAN summary.
Other major infrastructure needs beyond 1999 are not included. For example to include the Toledo East Side 72" Trunk Water Main add $1.00/1000 cubic feet to other options.
Regional Water Study

- Where to from here?
  - Schedule presentation to communities' public officials.
  - Allow review and integrate comments of local communities through Technical Committee.
  - Identify major issues that would be resolved in a subsequent study phase:
    - Debt transfer
    - Future capital improvement financing
    - Formation of a Water Authority across state lines
    - Replacement reserve
    - Lease versus purchase
    - Water Authority Board members
  - Establish structure for promoting dialogue between interested communities.
  - Develop step by step action plan.
    - Financial
    - Legal
    - Political
    - Technical
EXECUTIVE SUMMARY

A. GENERAL

This Executive Summary has been updated with additional options to reflect input from several meetings held with the Technical Advisory Committee since the release of the Preliminary Regional Water Study, June 1999. The Preliminary June 1999 Study with supporting documentation is available for technical reference.

B. OBJECTIVE

The objective of this study is to determine the feasibility of forming a regional water system by combining existing water systems located in Fulton, Lucas, Monroe and Wood Counties into a common water system. To accomplish this objective, the following scope of work has been performed:

- Identified potential service area boundaries (Scope of District) and water demands.
- Performed inventory and asset valuations of existing community's water systems.
- Summarized existing community's water rates and agreements.
- Summarized existing communities cost of water.
- Generated lease/purchase values of the existing water systems.
- Projected the cost of water based on regional water system concepts.

C. SCOPE OF DISTRICT

The existing systems that are included in this study provide water service to customers located in Fulton County, Lucas County, and Wood County in Ohio, Monroe County in Michigan and the communities of Maumee, Northwood, Oregon, Perrysburg, Rossford, Sylvania, Toledo, Waterville, and Whitehouse all in Ohio. Maps showing the proposed existing and future water contract service areas are included in the presentation figures at the front of this document.

At the present time, three water treatment plants (Toledo 150 MGD, Oregon 8 MGD and Whitehouse 1.1 MGD) serve the study area. These plants delivered a combined total of 23.4 billion gallons (3,126,310 MCF) to 161,000 residential and commercial customers.

The existing Toledo raw water intake supply and water treatment plant has adequate capacity to service the year 2025 projected water demand. To meet future demands in service areas presently supplied from Oregon's water system, an expansion to the Oregon water treatment plant will be required and has been programmed for implementation. These required improvements have been included in the capital improvements plan section of this study.
D. INVENTORY AND ASSETS

An inventory was developed for each water system comprised of trunk water mains 16-inch and larger, pumping stations, storage tanks, water treatment plants and local water mains based on the number of existing customers. With the inventory, a replacement cost and current value based on age and condition of the asset was developed.

The replacement cost of all water systems combined is estimated to be approximately $1,251,800,000. The current value factoring in the age and condition of the assets is estimated to be approximately $919,300,000. A detailed breakdown by water system of the replacement cost and current value is shown in Appendix A, pages 7 and 8 of the Preliminary June 1999 Study.

Capital improvement plans from the existing water systems for 1999 through 2002 were compiled and total approximately $102,000,000. The major capital improvements include approximately $51,800,000 for Toledo, $22,900,000 for Oregon and $11,900,000 for Lucas County. A detailed breakdown by water system of the capital improvements is shown in Appendix A, pages 25 through 36 of the Preliminary June 1999 Study.

E. EXISTING WATER RATES AND AGREEMENTS

The average water rate based on 1000 cubic feet per month (typical avg. household usage of 3-4 persons) for the State of Ohio in 1998 was $24.51. A summary showing existing January 2000 water rates for all the water systems is shown on Figure I-1 at the end of this Executive Summary. This summary also shows the breakdown of individual water costs by each water system. Water rates range from a low of $7.24 per 1000 cubic feet for water customers located inside the City of Toledo to a high of $28.99 for customers located outside the City of Perrysburg in Wood County.

Water agreements for water systems purchasing water from the City of Toledo vary from two communities, which presently do not have a current agreement to having an agreement expire in the year 2027. A summary showing water agreement expiration dates may be seen on Figure I-2 at the end of this Executive Summary.

Presently, Toledo agreement surcharges exist that range from 40% to 115% of the base charge of water. The formation of a regional water system could eliminate the use of water surcharges. However, in exchange for the elimination of the surcharge the oldest and largest water system
(i.e. – Toledo) may be justified in recovering from the newer customers (i.e. – outlying communities) a portion of its capital investment (i.e. – major infrastructure) that has been paid for by City customers long ago prior to connection of the newer outside customer.

**F. COST OF WATER & APPROACHES TO A REGIONAL WATER SYSTEM**

A combined total of approximately $34,900,000 of water revenue was generated in 1997 from the 13 water systems included in this study. Existing annual debt service for this same period totals $4,600,000. With the recent issue of bonds for the City of Toledo in 1999, the existing annual debt service for all the water systems is approximately $8,000,000/year.

With the projected $102,000,000 of proposed capital improvement projects over the next four years, additional annual debt service is estimated to be $1,240,000/year in 1999 and increase to $8,560,000/year in 2002. It should be noted that no allowance for bond reserves has been included.

Initial operation and maintenance costs have been estimated to be approximately $33,000,000/year. Note that the benefits of economies of scale (i.e. – consolidation of water systems personnel & operations) of a regional water system have not been considered in projecting these operation and maintenance costs. A subsequent evaluation to explore possible savings will be necessary.

With the creation of a regional water system, surcharges as they exist today could be eliminated. However, as mentioned earlier the largest and oldest water system (i.e. – Toledo) may be justified in recovering from the outside (newer) customers a portion of its capital investment (i.e. – major infrastructure) that has been paid for by City customers long ago prior to connection of the newer outside customer. This recovery of capital investment could be structured in a form of a long term lease or purchase to the regional water system. Water demand projections indicate that by year 2025, roughly 50% of the water used will be from outside City of Toledo customers. (Current outside usage is 33%) Based on this future projected usage, 50% of the City of Toledo’s major infrastructure that provides service to Toledo and the surrounding communities is valued at approximately $197,500,000. If a regional conglomerate were to lease or purchase this value from Toledo, the annual debt service to retire this expense is estimated to be approximately $16,500,000/year. Leasing or purchasing a part of the Toledo Water System is a possible means to reduce or eliminate rate surcharges in the future.
Several approaches as to the structure of a regional water system were considered and are listed as follows:

Option A
- Form a regional water system with all communities including Toledo.
- All communities except Toledo, lease/sell their system to the regional water system for $1.00. Toledo lease/sells 50% of its major system assets for $197,500,000. (Based on projected 2025 water demand).
- Pool operation and maintenance, existing debt and projected capital improvements debt costs into a single rate/1000 cubic feet.

Option B
- Same as Option A except Toledo reduces rates to its own customers with investment interest from $197,500,000 (50% of Toledo major system assets).

Option C
- A separate regional water system excluding Toledo is formed between Monroe County, Sylvania, Maumee, Lucas County, Fulton County, Waterville, and Whitehouse.
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These options and their associated projected water rates are reviewed in detail in Figure I-2 at the end of this Executive Summary. It should be noted that subsequent rate increases will be required for 2000 thru 2002 to cover additional capital improvement projects and general projected inflationary increases.
The communities will need to carefully consider the positives and negatives of the regional options presented. We suggest that a period of 6 to 12 months be granted to the communities involved in this study for them to review and offer their comments and concerns regarding this study.

This Phase 1 study provides information that will hopefully permit all entities to determine whether a regional water system concept is truly desirable. Social and economic factors need to be seriously factored into the decision. Provided this study results in a continuation of dialog between communities regarding a regional system, the next step would involve completion of Phase 2 of the study which will address issues regarding existing debt service payments; legal issues regarding formation of a regional authority crossing a state line (Monroe County); details regarding lease versus purchase; how to handle existing replacement reserve funds; retaining of legal counsel and financial consultants to assist with formation of a regional water authority and development of a step-by-step action plan to coordinate formation of O&M and billing departments.
Regional Water Study
Consumer Water Cost Summary 2000

Cost/1000 cubic feet/month

- State Average 1998: $34.51
- Fulton County: $24.51
- Lucas Co. (Tol): $17.29
- Lucas Co. (Oreg): $19.49
- Maumee: $25.00
- Monroe County, MI: $21.62
- Northwood: $20.16
- Oregon: $25.25
- Perrysburg: $23.96
- Perrysburg (outside): $28.99
- Rossford: $21.00
- Sylvania: $14.86
- Toledo: $26.18
- Waterville: $26.56
- Whitehouse: $29.43
- Wood Co. (Tol): $26.67
- Wood Co. (Oreg): $18.19

Figure I - 1
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