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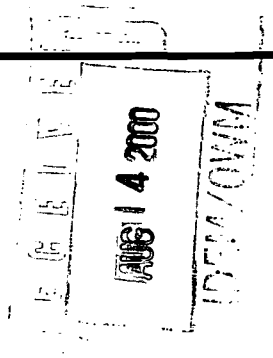

Gary - Can Phone
219-929-5225

August 11, 2000

Ms. Lynne Newlon, Coordinator
Water and Sewer Regional Districts
Indiana Department of Environmental Management
100 N. Senate Ave.
Indianapolis, IN 46204

RE: Arlington Regional Water and Sewer District
McM No. A505-59246

Dear Ms. Newlon:

Enclosed please find the following item:

One (1) copy of the Preliminary Engineering Report dated August 8, 2000 for the Proposed Arlington Regional Water and Sewer District.

We appreciate you assistance in this matter. Please do not hesitate to contact our office with any questions you may have.

Sincerely,

McMahon Associates, Inc.

Lee Nagai
Professional Engineer

LN/mn

encl.

cc: Al Brown, President, Arlington Heights Association
Nick Kile, Attorney, Barnes & Thornburg
Gary A. Radtke, P.E., V.P., McMahon Associates, Inc.

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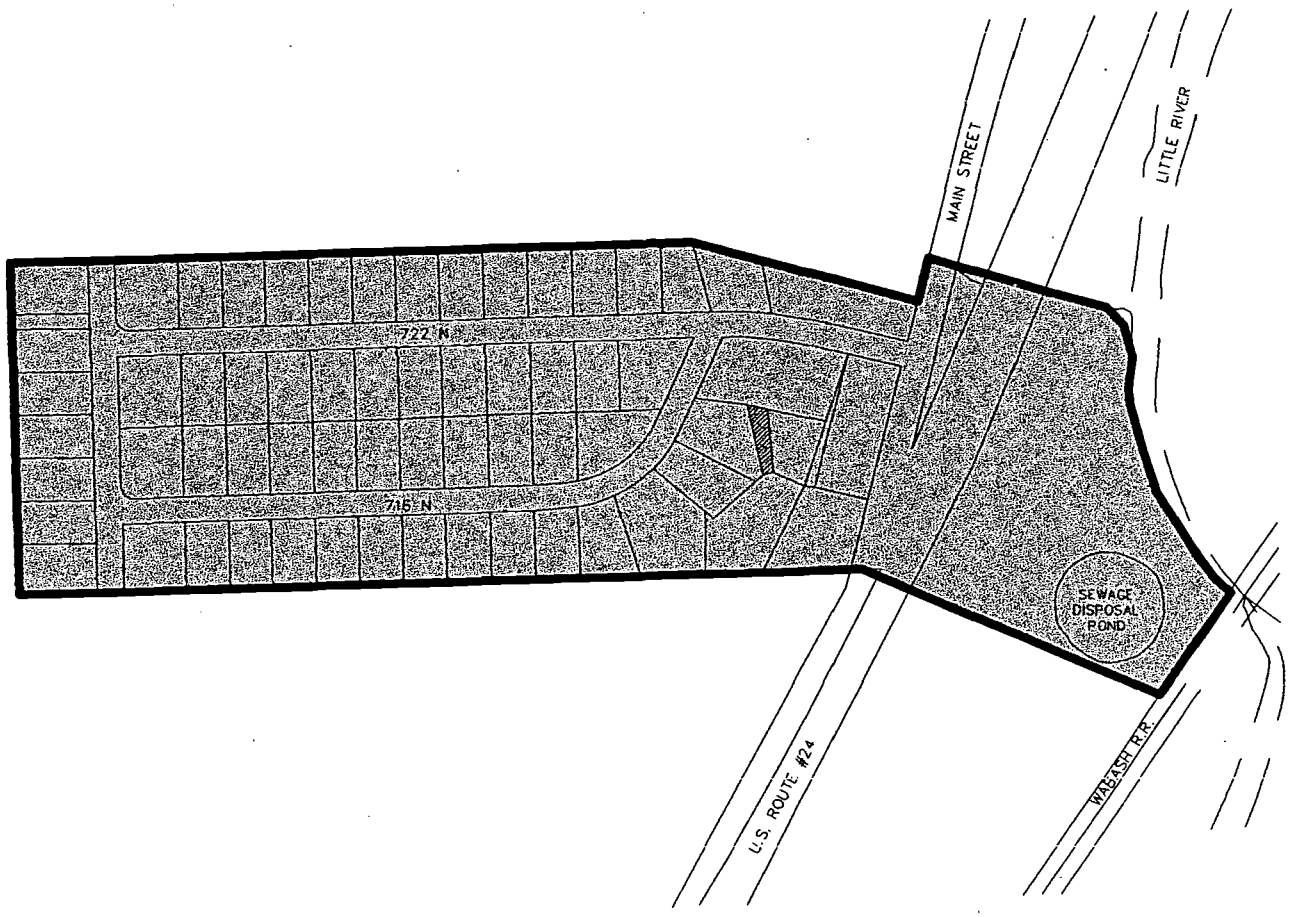
Preliminary Engineering Report

for

Arlington
Regional Water & Sewer District



prepared by:

McMahon Associates, Inc.

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Valparaiso, Indiana

NORTH

August 8, 2000

Preliminary Engineering Report for the Arlington Regional Water and Sewer District Huntington County, Indiana

Prepared By:

McMahon Associates, Inc.
August 8, 2000

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Chapter I

Project Summary

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I. General

This document has been prepared for the proposed Arlington Regional Water and Sewer District (RWSD) to serve as a preliminary engineering report, demonstrating the need for the organization of a Regional Water and Sewer District to serve the water and wastewater needs of the Arlington residents. This report presents historical and factual information on the existing conditions of the sewer and water utilities in the study area. Furthermore, this document outlines a proposed solution meeting the needs of the residents in the project area, and presents cost estimates for the proposed solution.

II. Purpose and Scope

The proposed Arlington RWSD will provide the residents of the service area with a means of properly disposing wastewater without environmental damage and/or public health risks. This plan shows that the proposed system should eliminate the degradation of surface and ground water, while abating continued pollution in the study area.

The proposed wastewater collection system will consist of the following:

1. Undertake the ownership, operation and maintenance of the existing wastewater collection system, which currently serves the Arlington Subdivision area.

2. Rehabilitation of the existing collection network to reduce the amount of clear water entering the system.

3. Abandonment and closure of the existing Arlington wastewater treatment facility, construction of a new centralized lift station and force main, and transport of Arlington's wastewater, via force main, to the Roanoke Wastewater Treatment Plant for proper treatment and disposal.

The proposed potable water system will provide a safe and reliabile supply of potable water and fire protection to the service area. This report demonstrates the need for a safe and reliable drinking water source in the study area.

The proposed water distribution system will consist of the following elements:

1. Undertake the ownership, operation and maintenance of the existing water distribution system which currently serves the Arlington Subdivision area.

2. Abandonment and closure of the existing wells.

3. Construction of a new water distribution system within the subdivision.

4. Construction of new water transmission main and appurtances from the Town of Roanoke to the service area.

These proposed water and wastewater systems will serve 66 residential units. The current estimated service area population is 200 persons.

III. Financial Analysis

The estimated project cost for the proposed wastewater collection system and for a regionalized wastewater connection to the Town of Roanoke is $595,000.00, and the estimated project cost for the proposed water distribution system and for a regionalized water connection to the Town of Roanoke is $801,000.00.

The following potential funding sources have been identified for this project:

1. The State Revolving Loan Program.

2. The Supplemental Drinking Water and Wastewater Assistance Fund.

Financial analyses outlined in this report assumes funding being provided by the State Revolving Loan Fund, a low interest loan program for wastewater and drinking water management projects and receipt of a grant through the Supplemental Drinking Water and Wastewater Assistance Fund. Final evaluation of the grant funding opportunities afforded the proposed Arlington RWSD will be developed as the project progresses.

Exact financial impacts will be determined once final project costs are known.

IV. Environmental Impacts

Minor negative environmental impacts are anticipated as a result of these proposed water and wastewater improvement projects. These negative impacts will be present during project construction and will include noise, dust, and sedimentation transport. Available control measures will be utilized to minimize the environmental impact on the area.

It is anticipated that environmental concerns associated with the existing systems will be eliminated when these proposed improvements are completed.

V. Public Participation

Public participation in the organization of the proposed Arlington RWSD has been positive. The existing Arlington Heights Homeowners Association is acting as a steering committee to provide direction for this project and distribute information to the residents. The Association meets regularly and provides updated project information to all interested residents regarding the status of this project. It is anticipated that this involvement will continue as this project further develops.

Chapter II
Documentation of Need

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I. General Background

The documentation presented in this report illustrates the various problems that exist with the current wastewater and water systems in the proposed Arlington Regional Water and Sewer District area. This documentation includes evidence that the existing wastewater collection and treatment system within the proposed Arlington Regional Water and Sewer District is not properly operating, and is currently unable to provide adequate treatment and disposal of wastewater in compliance with its NPDES permit limits. Furthermore, the existing water treatment and distribution system suffers from inadequate pressure and flow and poor quality well water. The existing water system does not provide fire protection.

The following review of existing conditions documents the need for wastewater and water system improvements in the proposed Arlington Regional Water and Sewer District.

A. Environmental Overview

The following is a brief synopsis on the environmental background of the study area:

1. Physiography, Relief, and Drainage

The proposed Arlington Regional Water and Sewer District is located in the northeast part of Huntington County, Indiana. It lies within the Little River drainage basin. The Arlington RWSD area drains to the Little River, and the topography is characterized as nearly level to gently sloping. Soils in the area range from somewhat poorly drained to well drained and formed on glacial till and moraines. The general soil series for the study area are further described below.

2. Soils

The soils found within the proposed Arlington RWSD area are categorized in the following three series – Blount, Glynwood and Morley. These are presented in the Soil Conservation Service's soil survey for Huntington County. These soil series are relatively similar in their characteristics. A further description of the soil series is documented below:

- **Blount Series:** Deep, somewhat poorly drained, slowly permeable soils on till plains. Slopes range from 1 to 4 percent.

- **Glynwood Series:** Deep, moderately well drained, slowly permeable soils on till plains and moraines. Slopes range from 3 to 7 percent.

- **Morley Series:** Deep, well-drained, slowly permeable soils on till plains and moraines. Slopes range from 6 to 30 percent.

A map depicting the above general soil associations is presented as Figure II-1.

3. Floodplain

The existing wastewater treatment facility is located within the Little River floodplain.

II. Existing Wastewater Collection and Treatment Facilities

The proposed Arlington Regional Water and Sewer District is currently served by a single-cell waste stabilization lagoon treatment system. The existing wastewater collection system serves 66 residential units in the Arlington Heights Subdivision.

A more detailed overview of the condition of the collection system and wastewater treatment facility for the proposed Arlington Regional Water and Sewer District is outlined below.

A. Existing Collection System

The existing collection system for the Arlington Heights Subdivision is comprised of 8-inch gravity sewers. The collection system was installed in the mid-1960's as part of the development of the subdivision. Based on the reports of local residents, and a preliminary site investigation, the existing collection system appears to exhibit excessive levels of inflow and infiltration.

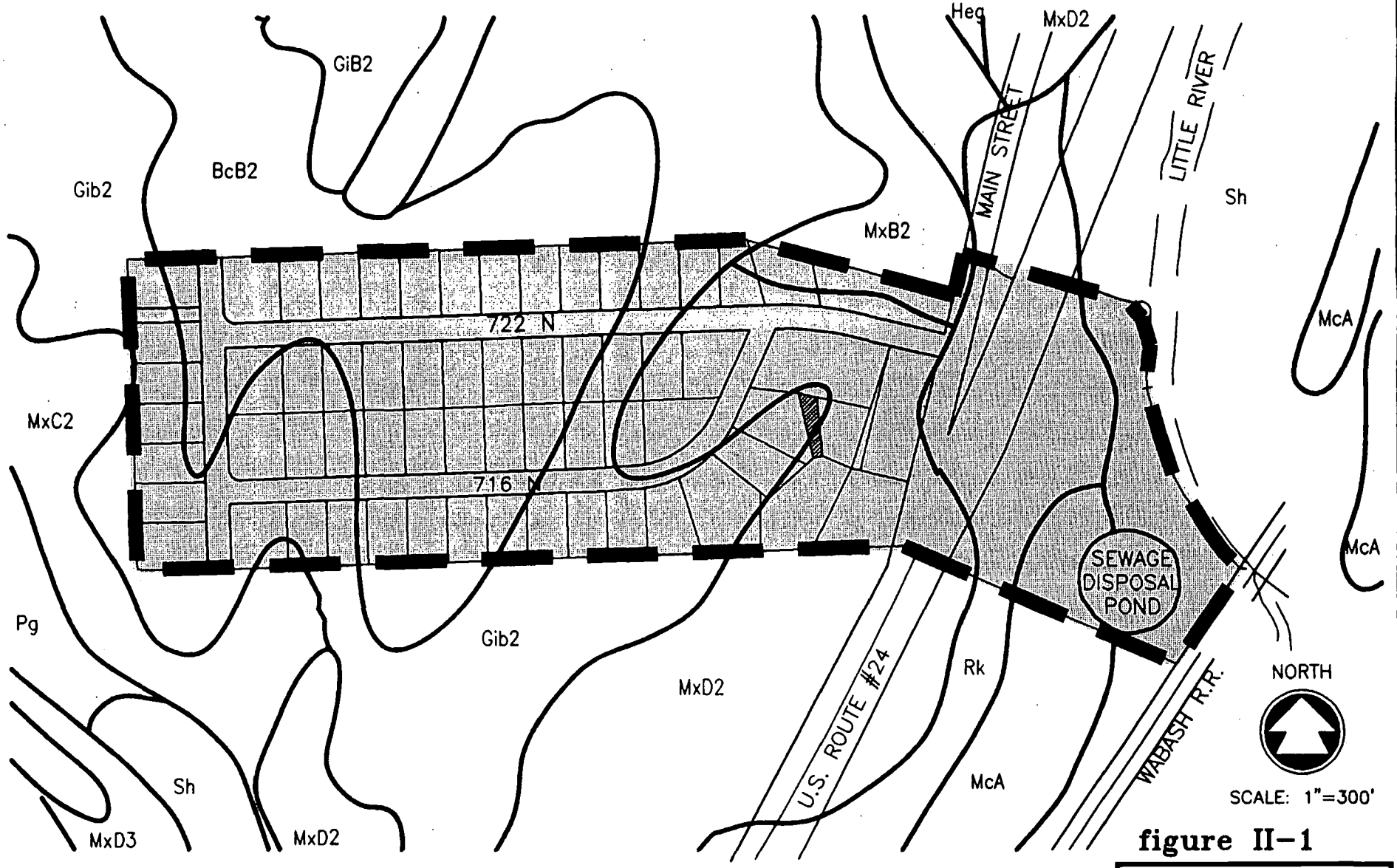

figure II-1

Arlington Regional Water & Sewer District

soils analysis

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B. Existing Treatment System

The existing treatment system for the Arlington Heights Subdivision is comprised of a metering vault, chlorination facility (tablets), dechlorination facility (not used) and a single cell waste stabilization lagoon. Plans and records for the treatment plant were unavailable for review. However, public records show the treatment plant operator has been assessed several fines for non-compliance. Also, the facility is located within the floodplain of the Little River. No information was available as to the basis of design loadings for flow, BOD or TSS.

1. Unauthorized Overflows and/or Bypasses

Based on conversations with local residents, and a review of public records, several unauthorized overflows or bypassing of sewage from the treatment plant have occurred.

2. Effluent Limits

The Indiana Department of Environmental Management (IDEM) regulated the discharge from the plant through the National Pollutant Discharge Elimination System (NPDES) permit system. The original NPDES permit for this plant is No. IN0043931 and was issued 6/23/82. Effluent limits were:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQ.	
Flow	**Weekly Average**	**Monthly Avg. Gallons**	**Measurement Frequency Daily**	**Sample Type**
BOD_5	– 45 mg/l	6.7 lbs/day 30 mg/l	Weekly Weekly	Composite Composite
Suspended Solids	– 45 mg/l	6.7 lbs/day 30 mg/l	Weekly Weekly	Composite Composite
Fecal Coliform	400/100 ml	200/100 ml	Weekly	Grab
Residual Chlorine	–	0.5-1.0 mg/l	Twice Weekly	Grab
pH	–	6.0-9.0	Twice Weekly	Grab

The current NPDES permit for this plant is No. IN0029599 and was issued 11/6/98. The revised effluent limits are:

	QUANTITY OR LOADING			QUALITY OR CONCENTRATION			MONITORING REQ.	
Parameter Flow(1)	Monthly Average Report	Weekly Average Report	Units MGD	Monthly Average	Weekly Average	Units	Measurement Frequency 5 x weekly	Sample Type 24-Hr. Total
$CBOD_5$	9.2	13.8	lbs/day	10	15	mg/l	2 x wkly	24-Hr. Composite
TSS	9.2	13.8	lbs/day	10	15	mg/l	2 x wkly	24-Hr. Composite
NH_3-N(2) Summer (3)	1.2	1.8	lbs/day	1.3	2.0	mg/l	2 x wkly	24-Hr. Composite
Winter (4)	1.7	2.7	lbs/day	1.9	2.9	mg/l	2 x wkly	24-Hr. Composite

	QUALITY OR CONCENTRATION				MONITORING REQ.	
Parameter	Daily Minimum	Daily Maximum	Monthly Average	Units	Measurement Frequency	Sample Type
D.O. (2)(5) Summer (3)	6.0	–	–	mg/l	5 x wkly	2 Grabs/Day
Winter (4)	5.0	–	–	mg/l	5 x wkly	2 Grabs/Day
pH	6.0	9.0	–	s.u.	5 x wkly	Grab
Residual Chlorine (6)(8) Contact Tank	0.5	1.0	–	mg/l	5 x wkly	Grab
Final(2)(7)	–	0.02	0.01	mg/l	5 x wkly	Grab

3. Flows and Loadings

There are no records kept at the Wastewater Treatment Plant. There is no influent flow meter. There is an effluent flow meter, however, the condition of this flow meter suggests this meter does not operate properly and the data is unreliable. There is no influent or effluent sampler. Flow to the plant was assumed to be equal to daily water pumpage from the wells.

Monthly Report of Operations were requested of IDEM. We received Monthly Report of Operations from January 1998 through October 1998 (10 months of data).

We also received a summary of effluent flows and characteristics for the Arlington Wastewater Treatment Plant for 1996 through May 1999 (see Table II-i).

TABLE II-i

Arlington Regional Sewer and Water District

Final Effluent 1996-1999

1996	pH Minimum 6.0	Maximum 9.0	BOD 30 Day AV 30.0	5 Day 7 Day AV 45.0	Suspended 30 Day AV 30.0	Solids 7 Day AV 45.0	Chlorine Daily Min. 0.5	Daily Max. 1.0
January	7.5	7.6	81.6	91.1	9.9	15.5		
February	7.4	7.6	87.6	94	26.4	40		
March	7.5	7.9	71.7	83.6	44	56		
April	7.8	8.9	44.4	67	92.8	122	0.5	0.6
May	7.8	8.9	28.3	71.3	19.4	32	0.5	1
June	7.7	8.2	12.3	16.4	10	17.5	0.5	0.7
July	7.7	8.1	14.3	17.8	23.4	33	0.5	0.7
August	7.2	7.4	38.6	53.7	26.3	42.7	0.5	0.7
September	7.4	8.1	42.8	58.9	19	25.5	0.5	0.6
October	7.4	7.8	37.3	48.2	27	41	0.5	0.6
November	7.6	7.9	39.1	48	44.4	52.5		
December	7.5	7.9	41.3	71.3	52.5	60		
1997								
January	7.5	7.9	44.4	71.2	50.5	64		
February	7.5	7.7	32	46.7	46	52		
March	7.6	7.9	34.6	43	35.3	38.3		
April	7.6	8.6	25	30	31	49	0.5	0.7
May	7.8	9.9	60	75	75	146	0.5	0.7
June	8	9	27	32	44	71	0.5	0.7
July	7.3	8.5	37	54	46	74	0.5	0.9
August	7.2	8.2	50	93	26	33	0.5	0.8
September	7.1	8	36	42	21.2	23.3	0.5	0.8
October	7.6	8.1	39.2	45.6	46.4	56	0.5	0.8
November	7.9	8.5	60.2	88	96	134		
December	7.7	8.2	26.6	28.2	71.1	80		
1998								
January	7.4	8.1	22.8	46.8	30.2	48.5		
February	7.7	8.8	63.6	106	33.1	55.5		
March	8.2	9	26	42	62	101		
April	7.4	9.2	28.9	44.6	62.9	86.7	0.02	1
May	7.4	8.8	40.9	52.5	58.4	94.5	0.5	1.86
June	7.9	8.9	42	73.5	65.4	127	0.03	1
July	7.8	8.9	41	69.6	39.4	95	0.5	0.86
August	7.9	10	124	231	91.1	196	0.53	0.88
September	7.2	9.4	41.6	82.8	48	85	0.5	0.99
October	7	8.7	112	160	17	25.3	0.52	0.89
November	7.1	7.4	130	148	19	25		
December	7.2	8	68	132	30	47		
1999								
January	7.1	7.5	20	20	24	24		
February	7.4	7.8	53	75	20	20		
March	7.7	9	104	131	78	124		
April	7.9	8.9	94	150	172	340	0.39	0.93
May	8.4	9.5	119	278	188	461	0.7	3.5
June								
July								
August								
September								
October								
November								
December								

4. Plant Performance

According to the data available for review, BOD, TSS and pH are tested. Chlorine residual is tested during disinfection season. Dechlorination is not practiced, although dechlorination equipment was installed by mistake. For data reviewed, effluent quality reported was not in compliance with permitted values on several occasions. According to IDEM's records, the plant has experienced at least 85 violations of its NPDES permit.

5. Plant Condition Assessment

The Wastewater Treatment Plant was toured by representatives of Midwest Contract Operations, Inc. (MCO) and McMahon Associates, Inc. on November 17, 1999 to visually observe the condition of the plant and its operation while there. The following summarizes this visual assessment:

The lagoon was covered with algae and appeared to contain an excessive level of sludge.

The effluent/discharge piping appeared to be improperly located and would not allow the Operator to properly discharge lagoon water.

III. Existing Water Treatment and Distribution Systems

The proposed Arlington Regional Water and Sewer District is currently served by one water distribution system in operation. The Arlington Utilities water system currently operates a small water distribution system, consisting of a single well pump house and associated water main to provide potable water to 66 residential units in the Arlington Heights Subdivision.

A more detailed overview of the condition of the water treatment and distribution system for the proposed Arlington Regional Water and Sewer District is outlined below.

A. Existing Water Supply

Groundwater from two wells is the only source of water for the proposed Arlington RWSD study area. These two wells provide an adequate supply of water for drinking and household use. However, these two wells can no provide enough water to provide fire protection and the quality of this well water is poor with excessive levels of iron and hardness. One of the wells appears to be located on private property without an easement.

There is also a concern about possible contamination of the well water because the two wells are located down gradient from a former industrial site known to have discharged hazardous materials into the ground.

B. Existing Water Treatment System

Little is known about the design of the existing water treatment process, condition of equipment, and operation because of unavailability of records from Arlington Utilities. We did observe two water wells and there are pumps and a hydropneumatic tank. No water treatment is provided. No back-up power generator was observed.

C. Existing Water Distribution System

The existing water distribution system serving the Arlington Heights Subdivision is currently owned and operated by Arlington Utilities, a private utility corporation in Huntington County. The existing system was constructed in the mid-1960's, with the development of the Arlington Heights Subdivision, and currently serves 66 existing homes in the subdivision. The distribution system has experienced main breaks, loss of service, low flow and pressure, and poor water quality.

Due to lack of treatment of the water system has suffered from a lack of iron removal.

Pressure in the system is poor due to inadequate pumps in the system. This is evidenced by the low water pressures experienced by many of the homes in the area. Fire protection is not available to the homes in the area.

Chapter III
Current Situation

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I. Description of Study Area

The proposed Arlington Regional Water and Sewer District area encompasses a 33.3 acre area in Huntington County in the northeastern area of Indiana. The existing wastewater treatment facility is located in the Little River floodplain. A map delineating the proposed Arlington Regional Water and Sewer District is included as Figure III-1.

The following is a brief overview of the study area.

A. Population

The current population within the Arlington Regional Water and Sewer District service area is approximately 200 people. The service area is comprised of 56 single family homes, 2 duplexes and 1 four-plex. (See Table III-i.)

II. Determination of Water Usage and Wastewater Flows

The determination of current wastewater flows within the proposed Arlington Regional Water and Sewer District service area is estimated based upon the 10 states.

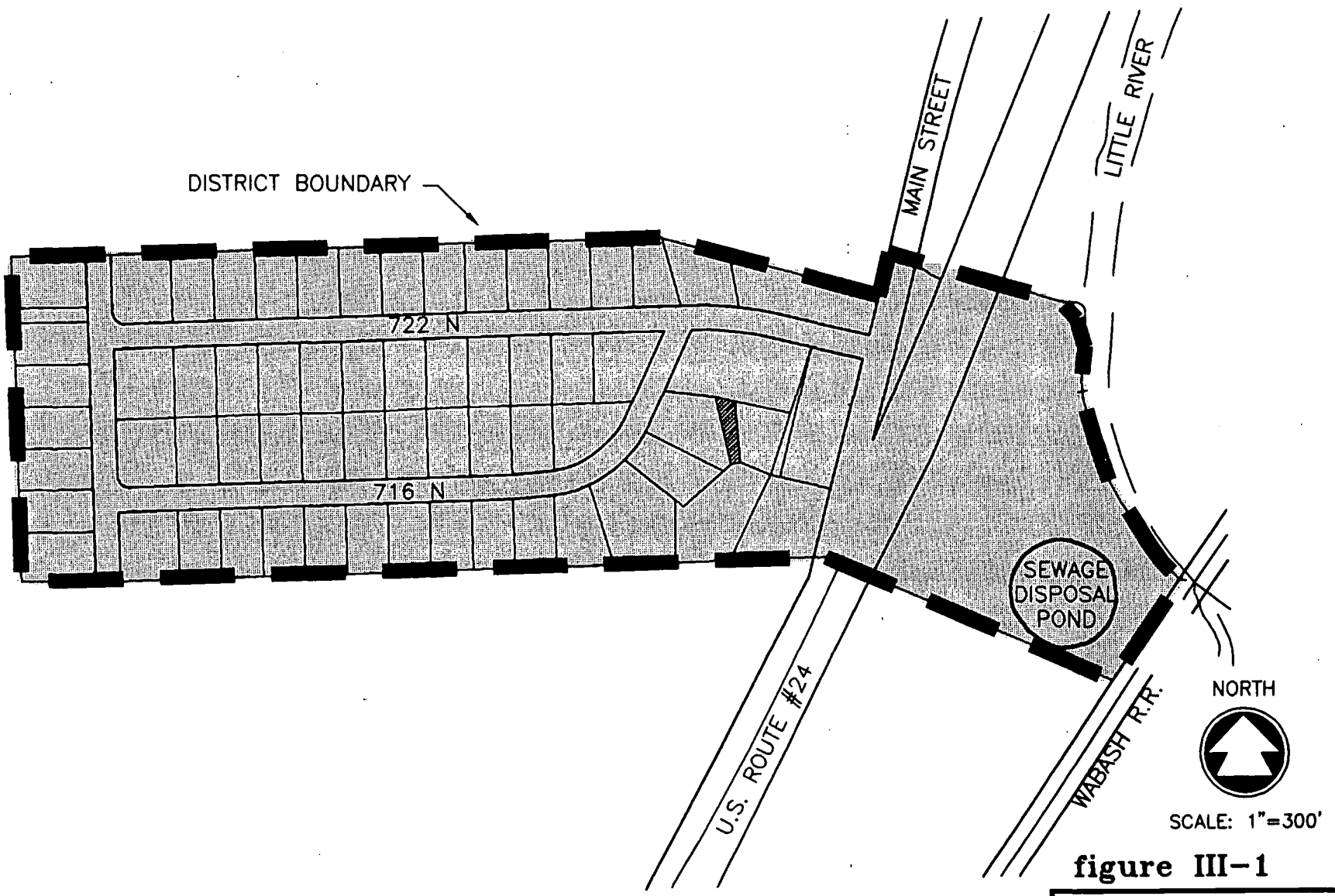

figure III-1

Arlington Regional Water & Sewer District

district map

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X:\Projects\A505 - Arlington Utilities\Drawings\PER 8-10-00\3-1 District.dwg Fri Aug 11 15:22:47 2000

TABLE III-i
Arlington Regional Sewer and Water District
Estimated Current Population Calculations
Prepared: 11 August 2000

Estimation of Arlington RSWD Initial Service Area Population, 2000

1. Existing Single Family Residential Units in Arlington Heights Subdivision:	56 homes
2. Existing Duplex Residential Units:	2 units
3. Existing Four-Plex Residential Units:	1 unit
4. Total Units in Current Service Area:	66 units
5. Estimated Persons per Single Family Unit:	3.1 persons/home
6. Estimated Persons per Multi-Family Unit:	2.75 persons/unit
7. Estimated Current Service Area Population:	200 persons

A. Determination of Wastewater Flow

The proposed Arlington Regional Water and Sewer District currently has one existing wastewater collection system in operation, serving 66 homes in the Arlington Heights Subdivision. Available information indicates this existing system experiences some levels of inflow and infiltration, which due to inadequate flow metering equipment at the wastewater treatment facility, are difficult to quantify. As a part of the recommendations from this study, it is anticipated this existing collection system will be utilized by the proposed Arlington Regional Water and Sewer District. Furthermore, it is expected that the collection network will require rehabilitation, and more stringent requirements will be enacted by the proposed District to enforce abatement of clear water sources from the system.

For purposed of this report, it was assumed that the existing collection system will be rehabilitated to a level which will meet current Indiana Department of Environmental Management requirements. Using the 10 States Standards, wastewater flow was estimated based on 100 gallons per day per capita. Estimated wastewater flow calculations are presented in Table III-ii.

B. Determination of Water Demand

Existing water demand for drinking water and household use was estimated using the 10 States Standards of 100 gallons per day per capita. Fire flow demand was assumed to be 500 gpm for a minimum 2 hour period.

TABLE III-ii
Arlington Regional Water & Sewer District
Estimation of Current Water Demand

Prepared: 11 August 2000

I. Estimation of Wastewater Flow from Currnetly Sewered Areas	
1. Arlington Heights Subdivision Current Population (2000)	200 people
2. Per Capita Flow per day	100 gpcpd
3. Estimated Wastewater Flow:	**20,000 gpd**

II. Wastewater Peaking Factor	
1. Arlington RWSD Current Population	200 people
3 Assumed Peaking Factor:	**4.0**

III. Peak Existing Wastewater Flow Estimation	
1. Total Wastewater Flow	20,000 gpd
2. Assumed Peaking Factor	4.0
3. Estimated Peak Wastewater Flow	**80,000 gpd**

III. Determination of Wasteload

Wastewater loadings for the proposed Arlington Regional Water and Sewer District were calculated using the following parameters provided by the Indiana Department of Environmental Management:

Conventional Sanitary Sewer System

BOD_5	0.17 lb./capita/day
TSS	0.20 lb./capita/day
NH_3N	18 mg/l
P	8 mg/l

For the purposes of this report, it was assumed that loadings attributed by the proposed service area will be domestic in nature. Any excessive loadings anticipated in the development of this plan will require an acceptable pre-treatment program prior to release into the municipal collection network, unless these higher strength loadings can be adequately treated by the proposed District's own treatment facility or a regionalized treatment facility. Estimated wasteloadings are presented in Table III-iii.

TABLE III-iii

ESTIMATION OF CURRENT WASTEWATER INFLUENT STRENGTHS & LOADINGS

ARLINGTON REGIONAL WATER AND SEWER DISTRICT

Prepared: 11 August 2000

I. Wasteload Concentration Estimation Criteria

Description	Residential
1. Five-Day Biochemical Oxygen Demand	0.17 lbs/day/captia X (D/DCI)
2. Total Suspend Solids	0.20 lbs/capita/day X(D/DCI)
3. NH3-N	18 mg/l
4. Phosphorus	8 mg/l

II. Estimation of Wasteload Concentrations

Description	Domestic
1. Current Daily Wastewater Flow (gpd):	20,000
2. Five-Day Biochemical Oxygen Demand (lbs/day):*	34.0
3. Total Suspended Solids (lbs/day):*	40.0
4. Ammonia-Nitrogen (lbs/day):**	3.0
5. Phosphorus (lbs/day):**	1.3

Chapter IV

Future Situation

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I. General

This chapter of the report will develop an estimate for wastewater flows and loadings projected over a twenty-year planning period for the proposed Arlington Regional Water and Sewer District service area. Because relatively little data is available for current flows and loadings, this data will be based on the expected population and economic growth within the proposed Regional Water and Sewer District boundary, adjacent lands, and anticipated future service area in conjunction with the expected per capita flows and estimated loadings provided by the Indiana Department of Environmental Management.

II. Population Projection

We anticipate the availability of improved water and wastewater utility services could make this area attractive for new development. Due to the location of the study area, with its proximity to Huntington and Fort Wayne, Indiana, some increase in the area's population can be expected over the 20-year study period. The proposed Arlington Regional Water and Sewer District is surrounded by undeveloped lands on all sides. These undeveloped lands are currently zoned for agricultural use, but could provide the opportunity for future growth.

Available acreage was calculated for the undeveloped parcels surrounding the proposed Arlington Regional Water and Sewer District. Future development is assumed to be residential, with a gross density of 3.0 units per acre.

Based on the current population estimates included in Chapter III, and the expected growth factors presented above, it is anticipated that the population of the proposed Arlington Regional Water and Sewer District service area could grow to approximately 300 people. Table IV-i provides the estimated future population calculations.

TABLE IV-i
Arlington Regional Water and Sewer District
Estimated Future Population Calculations
Prepared: 11 August 2000

Current and Future District Residential Unit Tabulation

1. Existing Residential Units Surrounding Current Service Area (2000)	66 units
2. People per Household Single-Family (10 States Standards)	3.10 units
3. People per Household Multi-Family (10 States Standards)	2.75 units
Current Population for Service Area (2000):	**200 people**

Anticipated New Residential Development Tabulation

1. Available Acreage Surrounding Current Service Area:	50 acres
2. Anticipated Gross Density for Residential Development:	3 units/acre
3. Total Anticipated Future Subdivision Lots:	150 lots
4. Anticipated Build Out in Year 2020:	30%
Future Anticipated Residential Units on Current Undeveloped Ground (2020):	**30 units**

Tabulation of Anticipated Future Population (2020)

1. Existing Population (2000)	200 people
2. Anticipated Residential Units on Existing Lots (2020):	66 units
3. Anticipated Residential Units on Current Undeveloped Ground (2020):	30 units
4. People per Household (10 States Standards):	3.1 people/home
Anticipated Future Arlington RWSD Population (2020):	**300 people**

III. Economic Projections

It is anticipated that economic growth within the proposed Arlington Regional Water and Sewer District limits, as well as the future service area, will stay relatively unchanged. Based on the history of development in this area, it is expected that the proposed Arlington Regional Water and Sewer District will have little impact on the commercial and economic growth of the area, outside of additional tax base through the development of residential areas.

IV. Water Usage and Wastewater Flow Projection

Future wastewater flow projections for the twenty-year study period were developed based on a parallel relationship between future flows and anticipated population growth. The adjacent areas that we anticipate could utilize the Arlington collection network in the future are anticipated to contribute approximately 100 gallons per day per capita.

The flow calculations for the future service area of the proposed Arlington Regional Water and Sewer District, using the above criteria, are presented in Table IV-ii.

Future water usage projections were developed based on the 10 States Standards of 100 gallons per day per capita. Future fire flow demand was assumed to be 500 gpm for a minimum 2 hour period.

V. Wasteload Projection

Anticipated wasteload determination is normally developed to provide design criteria for the development and/or upgrades of the wastewater treatment facility for a wastewater management system. However, since this study recommends connecting to the Roanoke Utility System, these wasteload calculations will be incorporated into an interlocal agreement between the proposed Arlington Regional Water and Sewer District and the Town of Roanoke. Wasteload contributions for the proposed Arlington Regional Water and Sewer District anticipated service area were calculated using the above anticipated flows, and concentrations developed by the Indiana Department of Environmental Management. These anticipated wasteloads are presented in Table IV-iii.

TABLE IV-ii
Arlington Regional Water and Sewer District
Estimation of Future Wastewater Flows

Prepared: 11 August 2000

I. Estimation of Flow from Existing Areas	
1. Arlington Heights Subdivision Current Population (2000)	200 people
2. Flow Component per person per day	100 gpcpd
3. Estimated Existing Flow	**20,000 gpd**
II. Calculation of Wastewater Peaking Factor	
1. Arlington RWSD Anticipated Population (2000)	300 people
2. Assumed Peaking Factor	**4**
III. Peak Assumed Wastewater Flow Estimation	
1. Total Wastewater Flow	30,000 gpd
2. Assumed Peaking Factor	4.0
3. Estimated Future Peak Wastewater Flow	**120,000 gpd**

TABLE IV-iii

ESTIMATION OF FUTURE WASTEWATER INFLUENT STRENGTHS & LOADINGS

ARLINGTON REGIONAL WATER AND SEWER DISTRICT

Prepared: 11 August 2000

I. Wasteload Concentration Estimation Criteria

Description	Residential
1. Five-Day Biochemical Oxygen Demand	0.17 lbs/day/captia X (D/DCI)
2. Total Suspend Solids	0.20 lbs/capita/day X(D/DCI)
3. NH3-N	18 mg/l
4. Phosphorus	8 mg/l

II. Estimation of Wasteload Concentrations

Description	Domestic
1. Current Daily Wastewater Flow (gpd):	30,000
2. Five-Day Biochemical Oxygen Demand (lbs/day):*	51.0
3. Total Suspended Solids (lbs/day):*	60.0
4. Ammonia-Nitrogen (lbs/day):**	4.5
5. Phosphorus (lbs/day):**	2.0

Chapter V

Recommendations & Cost Analysis

McMAHON
ASSOCIATES, INC.
ENGINEERS ■ ARCHITECTS
SCIENTISTS ■ SURVEYORS

I. Methodology

This report considered various options for the proposed Arlington Water and Sewer District. Each option was evaluated based on: (1) ability to meet the needs of the Arlington residents; (2) cost effectiveness; (3) compliance with IDEM requirements; and (4) ability to meet the future needs of the area. Based on this evaluation, one option for the Arlington Water Utility and one option for the proposed Arlington Water and Sewer District was selected and recommended for implementation by the proposed Arlington Regional Water and Sewer District.

II. Wastewater Collection System

The existing collection system consists of 8-inch diameter gravity sanitary sewers. The existing collection system currently experiences significant amounts of infiltration and inflow (I/I). The following options were evaluated:

- Option 1 - Do nothing. This option would not meet the needs of the Arlington residents and does not provide for compliance with IDEM requirements. This option is not recommended.

- Option 2 - Perform investigative testing to identify I/I and follow-up with appropriate repairs. This option will meet the needs of the Arlington residents and provide for compliance with IDEM requirements in a cost-effective manner. This option is recommended.

- Option 3 - Replace all existing sanitary sewers. This option would meet the needs of the Arlington residents and provide for compliance with IDEM requirements, but would not be cost effective. This option is not recommended.

The existing wastewater collection system should have adequate capacity to serve the existing Arlington Subdivision. Future demands are not expected to affect the existing wastewater collection system, but will affect the wastewater treatment system and will be addressed in the wastewater treatment system section of this report.

III. Wastewater Treatment System

The existing wastewater treatment system consists of an existing, single cell, waste stabilization pond. The current facility is undersized and has been cited by IDEM for at least 85 violations since 1998. Inspections by other State agencies have described the condition of the facility as "under treated sewage", "totally neglected", "black septic discharge to receiving stream", "plant solids in effluent", "gross violations of permit limits, treatment facility poorly cared for, facility appears overloaded", "poor quality effluent", and "facility continues to be undersized". The following options were evaluated:

- Option 1 - Do nothing. This option would not meet the needs of the Arlington residents, would not provide for compliance with IDEM requirements and would not meet the future needs of the area. This option is not recommended.

- Option 2 - Rehabilitate the existing facility. This option would meet the needs of the Arlington residents and provide for compliance with IDEM requirements, but would not be cost effective. This option would not meet the future needs of the area and could cause other environmental concerns because the existing facility is located in the flood plain of the Little River. This option is not recommended.

- Option 3 - Abandon and close the existing facility and enter into an agreement with the Town of Roanoke for wastewater treatment. This option will meet the needs of the Arlington residents, provide for compliance with IDEM requirements and meet the future needs of the area in a cost-effective manner. This option is recommended.

IV. Water Distribution System

The existing water distribution system consists of a municipal type of water main through the Arlington Subdivision. The existing water distribution system experiences low flow and pressure and occasional breakage. Little else is known about the existing system, such as water main size and material, because of the unavailability of records from the existing Arlington Utility. Also, there are no existing fire hydrants. The following options were evaluated:

- Option 1 - Do nothing. This option does not meet the needs of the Arlington residents. This option is not recommended.

- Option 2 - Replace the existing water distribution system with new, 6-inch diameter water mains and fire hydrants. This option will meet the needs of the Arlington residents and provide for compliance with IDEM in a cost-effective manner. This option is recommended.

The interior water distribution system for the Arlington Subdivision is not expected to affect the future needs of the area. The future needs of the area will be addressed in the water treatment system section of this report.

V. Water Treatment System

The existing water treatment system consists of two wells and pumps and presumably a hydropneumatic tank. No water treatment is provided. The existing water source provides poor quality water that has excessive levels of iron and hardness. Little else is known about the existing water treatment system because of the unavailability of records from the existing Arlington Utility. The following options were evaluated:

- Option 1 - Do nothing. This option would not meet the needs of the Arlington residents. This option is not recommended.

- Option 2 - Rehabilitate the existing facility. This option would not meet the needs of the Arlington residents or meet the future needs of the area. This option is not recommended.

- Option 3 - Enter into an agreement to purchase water from the Town of Roanoke. This option would meet the needs of the Arlington residents, provide for compliance with IDEM requirements, and meet the future needs of the area in a cost-effective manner. This option is recommended.

VI. Cost Analysis

The following tables (Tables V-i and V-ii) present engineering cost estimates for the recommended improvements to the Arlington water and wastewater utilities.

PROJECTED CONSTRUCTION AND OPERATIONS COST ANALYSIS — Table V-i
FOR WATER SYSTEM IMPROVEMENTS
ARLINGTON REGIONAL WATER AND SEWER DISTRICT
Revised: 8/4/00

PUBLICLY FUNDED CONSTRUCTION COSTS

Description	Installed Quantity	Installed Unit Cost	Installed Cost
Transmission to Roanoke			
1. Furnish and install 10" Main	8,500 l.f.	$35.00	$297,500
2. Furnish and install road repair	1 ea.	$20,000.00	$20,000
3. Furnish and install 10" valves	10 ea.	$1,000.00	$10,000
4. Furnish and install meter	1 ea..	$15,000.00	$15,000
Subtotal			$342,500
Distribution			
1. Furnish and install 6-inch distribution main	3,300 l.f.	$25.00	$82,500
2. Furnish and install fire hydrant	6 ea.	$2,000.00	$12,000
3. Furnish and install 6-inch valves	10 ea..	$500.00	$5,000
4. Furnish and install new water service to property line	66 ea.	$500.00	$33,000
5. Furnish and install water meters	66 ea.	$200.00	$13,200
6. Furnish and install road repair	1 l.s.	$20,000.00	$20,000
Subtotal			$165,700.00
Demolition			
1. Add wells	2 ea.	$4,000.00	$8,000
2. Demo building	1 ea.	$20,000.00	$20,000
Subtotal			$28,000
Construction Cost			$536,200
Contingencies @ 10%			$53,800
SUBTOTAL PUBLIC COSTS:			$590,000

PRIVATELY FUNDED CONSTRUCTION COSTS

Description	Installed Quantity	Installed Unit Cost	Installed Cost
SUBTOTAL PRIVATE COSTS:			$0

NON-CONSTRUCTION COSTS

1. District Formation and Planning Services	$30,000
2. Design and Construction Services	
A. Local Counsel	$10,000
B. Bond Counsel	$10,000
C. Financial Advisor/Rate Consultant	$15,000
D. Design	$60,000
E. Bidding	$5,000
F. Construction Basic Services	$25,000
G. Construction On-Site Services	$35,000
H. Post Construction Services	$5,000
I. Aerial Mapping	$4,000
J. Geotechnical Services	$2,000
K. Land and Easements	$5,000
L. Miscellaneous	$5,000
SUBTOTAL NON-CONSTRUCTION COSTS:	$211,000

TOTAL PUBLIC, PRIVATE AND NON-CONST. COSTS:	$801,000

PROJECTED OPER., MAINTENANCE & REPLACEMENT COSTS

1. Operating Labor	$6,000
2. Purchase Power	$1,500
3. Materials and Supplies	$1,000
4. Repairs	$1,000
5. Outside Services	$2,000
6. Administrative	$3,000
7. Contracted Roanoke Charge	$12,000
8. Miscellaneous	$1,000
9. REMC Billing	$1,000
ANNUAL O, M, & R COSTS:	$28,500

SUMMARY OF PROJECTED INITIAL CAPITAL EXPENDITURES

Total Project Costs:	$801,000
Grant Proceeds:	$725,000
SRF Loan Amount:	$76,000
*Annual Debt Service:	$5,600
Annual O, M & R:	$28,500
Est. Monthly User Rate:	$44.90

*20 yrs @ 3.9% w/25% Coverage

PROJECTED CONSTRUCTION AND OPERATIONS COST ANALYSIS **Table V-ii**

FOR WASTEWATER SYSTEM IMPROVEMENTS

ARLINGTON REGIONAL WATER AND SEWER DISTRICT

Revised: 8/4/00

PUBLICLY FUNDED CONSTRUCTION COSTS

Description	Installed Quantity	Installed Unit Cost	Installed Cost
A. Transportation			
1. Furnish and install lift station	1 ea..	$65,000.00	$65,000
2. Furnish and install 4" forcemain	8,500 l.f.	$20.00	$170,000
3. Furnish and install air release manhole	2 ea..	$5,000.00	$10,000
4. Furnish and install flow meter	1 ea.	$10,000.00	$10,000
5 Furnish and install road repair	1 ea.	$20,000.00	$20,000
Subtotal			**$275,000**
B. Collection			
1. Furnish and install I&I reduction and sewer main repair	1 ea.	$50,000.00	$50,000
2. Furnish and install road repair	1 ea.	$10,000.00	$10,000
Subtotal			**$60,000**
C. Demolition			
1. Furnish and install lagoon abandonment (liquid disposal)	300,000 gal	$0.10	$30,000
2. Furnish and install lagoon abandonment (solid disposal)	500 cy	$31.00	$15,500
3. Furnish and install grading	1 ea.	$5,000.00	$5,000
Subtotal			**$50,500**
Construction Cost			**$385,500**
Contingencies @ 10%			**$38,500**
	SUBTOTAL PUBLIC COSTS:		**$424,000**

PRIVATELY FUNDED CONSTRUCTION COSTS

Description	Installed Quantity	Installed Unit Cost	Installed Cost
	SUBTOTAL PRIVATE COSTS:		**$0**

NON-CONSTRUCTION COSTS

1. District Formation and Planning Services	$30,000
2. Design and Construction Services	
A. Local Counsel	$10,000
B. Bond Counsel	$10,000
C. Financial Advisor / Rate Consultant	$15,000
D. Design	$40,000
E. Bidding	$5,000
F. Construction Basic Services	$15,000
G. Construction On-Site Services	$25,000
H. Post Construction Services	$5,000
I. Aerial Mapping	$4,000
J. Geotechnical Services	$2,000
K. Lands and Easements	$5,000
L. Miscellaneous	$5,000
SUBTOTAL NON-CONSTRUCTION COSTS:	**$171,000**

PUBLIC, PRIVATE AND NON-CONSTRUCTION COSTS:	**$595,000**

PROJECTED OPER., MAINTENANCE & REPLACEMENT COSTS

1. Operating Labor	$6,000
2. Purchase Power	$1,500
3. Materials and Supplies	$1,000
4. Repairs	$1,000
5. Outside Services	$2,000
6. Administrative	$3,000
7. Contract treatment charge from Roanoke	$12,000
8. Miscellaneous	$1,000
9. REMC Billing	$1,000
ANNUAL O, M, and R COSTS:	**$28,500**

SUMMARY OF PROJECTED INITIAL CAPITAL EXPENDITURES

Total Project Costs:	**$595,000**
Grant Proceeds:	**$519,000**
SRF Loan Amount:	**$76,000**
***Annual Debt Service:**	**$5,600**
Annual O, M & R:	**$28,500**
Est. Monthly User Rate:	**$44.90**

***20 yrs. @ 3.9% w/25% Coverage**

INDIANA STATE BUDGET AGENCY
GRANT/LOAN INFORMATION PACKET

PROPOSED
ARLINGTON REGIONAL
SEWER & WATER DISTRICT
Huntington, Indiana

Prepared by:

McMahon Associates, Inc.

ENGINEERS ● ARCHITECTS ● SCIENTISTS ● SURVEYORS

Valparaiso, Indiana

May 8, 2000

McMAHON
ASSOCIATES, INC.

ENGINEERS ■ ARCHITECTS
SCIENTISTS ■ SURVEYORS

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Valparaiso, Indiana 46383
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e-mail: mcmin@netnitco.net

May 8, 2000

Mr. Richard Emery
Indiana State Budget Agency
1 North Capitol #320
Indianapolis, IN 46204

Dear Mr. Emery:

Attached is our financial report for the Arlington Sewer and Water Utility. We have revised it due to last weeks meeting with the Town of Roanoke. Prior to that time, we did not know for sure if they were interested or what conditions would they impose. All reports prior to this time assumed we would regionalize the wastewater portion of this project with Roanoke.

At the May 2, 2000 meeting, the Town discussed conditions and costs, which we have incorporated in the attached report. This attached report also includes the construction of a package type wastewater treatment plant in case regionalization did not occur. As you can see this method is extremely cost prohibitive. As you well know presently 60 lot subdivisions cannot support their own wastewater and water system. This community proved that.

The above information refers to wastewater, not water, being regionalized with the Town of Roanoke. We expect that the capital cost to obtain water from the Town is approximately the same as the upgrade. In the future we will analyze this in more detail.

Hopefully this information will help you in determining the amount of grant money that will be available for Arlington. Thank you.

Sincerely,
McMahon Associates, Inc.

Gary A. Radtke, P.E.
Vice President

GAR/sas

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ARLINGTON REGIONAL SEWER AND WATER DISTRICT

I. SUPPLEMENTAL SUBMITTAL-FEBRUARY 5, 2000 (without regionalization)

1.	Wastewater		
		Grant	$888,000
		Annual cost	$43,000
2.	Water		
		Grant	$350,000
		Annual cost	$25,000
3.	Total Grant needed		$1,238,000
	Total Annual Cost		$68,000
	User Rate/5,000 gpd		$90.00

II. REGIONALIZATION OF WASTEWATER SYSTEM

1.	Wastewater		
		Grant	$427,000
		Annual Cost	$38,300
2.	Water		
		Grant	$350,000
		Annual Cost	$25,000
3.	Total Grant needed		$777,000
	Total Annual cost		$63,300
	User Rate/5,000 gpd		$89.80

III. NEED CHANGE TO REGIONALIZE

Grant reduced by	$461,000
*Annual cost increase	$4,700

*Note: City of Arlington charge to be negotiated to reduce annual cost.

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Arlington Regional Water and Sewer District
Huntington County, Indiana
Wastewater System Improvements Project Cost Analysis

I. Estimated Construction Costs

Description	Installed Quantity	Installed Unit Price	Total Cost
A. Collection System Improvements			
1. Furnish and install I&I reduction	1 l.s.	$ 50,000.00	$ 50,000
2. Furnish lagoon abandonment	1 l.s.	$ 15,000.00	$ 15,000
3. Furnish and install new lift station	1 l.s.	$ 60,000.00	$ 60,000
4. Furnish and install 4-inch force main	7000 l.f.	$ 20.00	$ 140,000
5. Furnish and install air release manholes	1 l.s.	$ 10,000.00	$ 10,000
6. Furnish and install flow metering manhole	1 l.s.	$ 10,000.00	$ 10,000
		Subtotal:	**$ 285,000**
		Construction Contingencies (10%+/-):	**$ 29,000**
		TOTAL ESTIMATED CONSTRUCTION COSTS:	**$ 314,000**

II. Non-Construction Costs

Description	Estimated Cost
1. District Formation and Planning Services	$ 30,000
2. Design and Construction Services	
A. Local Counsel	$ 10,000
B. Bond Counsel	$ 10,000
C. Financial Advisor/ Rate Consultant	$ 15,000
D. Engineering	$ 63,000
E. Land and Easements	$ 5,000
F. Miscellaneous	$ 5,000
TOTAL NON-CONSTRUCTION COSTS:	**$ 138,000**

III. Estimated Annual Operations Maintenance and Replacement

Description		Estimated Cost
1. Operating Labor	$	6,000
2. Purchased Power	$	1,500
3. Materials and Supplies	$	1,000
4. Repairs	$	1,000
5. Outside Services	$	3,000
6. Administrative	$	5,000
7. Contracted treatment charge from Roanoke	$	19,800
8. Miscellaneous	$	1,000
TOTAL WASTEWATER SYSTEM O,M, AND R:	**$**	**38,300**

IV. Monthly User Rate

ESTIMATED WASTEWATER SYSTEM PROJECT COSTS:	**$**	**452,000**
Grant Proceeds:	$	427,000
SRF Loan Amount:	$	25,000
Annual Debt Service (20 yrs. @ 3.9% w/ 25% coverage):	$	1,600
Annual O,M, and R:	$	38,300
Total Wastewater System Monthly User Rate:	**$**	**52.80**

Arlington Regional Water and Sewer District
Huntington County, Indiana
Water System Improvements Project Cost Analysis

I. Estimated Construction Costs

1. Water System Improvements

Description	Installed Quantity	Installed Unit Price	Total Cost
1. Furnish service to existing wells	1 l.s.	$ 18,000.00	$ 18,000
2. Furnish and install pressure tank	1 l.s.	$ 15,000.00	$ 15,000
3. Furnish and install well pumps	1 l.s.	$ 20,000.00	$ 20,000
4. Furnish and install distribution mains	1 l.s.	$ 80,000.00	$ 80,000
5. Furnish and install hydrants and valves	1 l.s.	$ 10,000.00	$ 10,000
6. Furnish and install pressure filter iron removal	1 l.s.	$ 45,000.00	$ 45,000
7. Furnish and install standby generator	1 l.s.	$ 25,000.00	$ 25,000
8. Furnish and install new water services	1 l.s.	$ 15,000.00	$ 15,000
9. Furnish and install new domestic meters	1 l.s.	$ 7,500.00	$ 7,500
10. Furnish and install controls upgrade	1 l.s.	$ 8,000.00	$ 8,000
		Subtotal:	**$ 243,500**
		Construction Contingencies (10%+/-):	**$ 24,500**
		TOTAL ESTIMATED CONSTRUCTION COSTS:	**$ 268,000**

II. Non-Construction Costs

1. Water System Improvements

Description	Estimated Cost
1. District Formation and Planning Services	$ 30,000
2. Design and Construction Services	
A. Local Counsel	$ 10,000
B. Bond Counsel	$ 10,000
C. Financial Advisor/ Rate Consultant	$ 13,000
D. Engineering	$ 54,000
E. Land and Easements	$ 5,000
F. Miscellaneous	$ 5,000
TOTAL NON-CONSTRUCTION COSTS:	**$ 127,000**

III. Estimated Annual Operations Maintenance and Replacement

Description		Estimated Cost
1. Operating Labor	$	12,000
2. Purchased Power	$	1,500
3. Materials and Supplies	$	1,000
4. Repairs	$	1,000
5. Outside Services	$	3,000
6. Administrative	$	5,000
7. Miscellaneous	$	1,500
TOTAL WATER SYSTEM O,M, AND R:	**$**	**25,000**

IV. Monthly User Rate

ESTIMATED WATER SYSTEM PROJECT COSTS:	**$**	**395,000**
Grant Proceeds:	$	350,000
SRF Loan Amount:	$	45,000
Annual Debt Service (20 yrs. @ 3.9% w/ 25% coverage):	$	2,900
Annual O,M, and R:	$	25,000
Total Water System Monthly User Rate:	**$**	**37.00**

V. Totals- Sewer and Water Improvements

ESTIMATED TOTAL PROJECT COSTS:	**$**	**847,000**
TOTAL GRANT PROCEEDS:	$	777,000
TOTAL SRF LOAN AMOUNT:	$	70,000
TOTAL ANNUAL DEBT SERVICE:	$	4,500
TOTAL ANNUAL O,M, AND R:	$	63,300
TOTAL MONTHLY SEWER AND WATER RATE:	**$**	**89.80**

Arlington Regional Water and Sewer District
Huntington County, Indiana
Wastewater System Improvements Project Cost Analysis- No Regionalization

I. Estimated Construction Costs

Description	Installed Quantity	Installed Unit Price	Total Cost
A. Collection System Improvements			
1. Furnish and install I&I reduction	1 l.s.	$ 50,000.00	$ 50,000
2. Furnish lagoon abandonment	1 l.s.	$ 15,000.00	$ 15,000
3. Furnish and install new lift station	1 l.s.	$ 60,000.00	$ 60,000
4. Furnish and install force main sewer	1 l.s.	$ 20,000.00	$ 20,000
5. Furnish and install package type WWTF	1 l.s.	$ 400,000.00	$ 400,000
6. Furnish effluent outfall	1 l.s.	$ 20,000.00	$ 20,000
		Subtotal:	**$ 565,000**
		Construction Contingencies (10%+/-):	**$ 57,000**
		TOTAL ESTIMATED CONSTRUCTION COSTS:	**$ 622,000**

II. Non-Construction Costs

Description	Estimated Cost
1. District Formation and Planning Services	$ 30,000
2. Design and Construction Services	
A. Local Counsel	$ 10,000
B. Bond Counsel	$ 10,000
C. Financial Advisor/ Rate Consultant	$ 15,000
D. Engineering	$ 124,000
E. Land and Easements	$ 20,000
F. Miscellaneous	$ 10,000
TOTAL NON-CONSTRUCTION COSTS:	**$ 219,000**

III. Estimated Annual Operations Maintenance and Replacement

Description		Estimated Cost
1. Operating Labor	$	15,000
2. Purchased Power	$	5,000
3. Materials and Supplies	$	2,500
4. Repairs	$	2,500
5. Outside Services	$	5,000
6. Administrative	$	7,000
7. Sludge Removal	$	4,000
8. Miscellaneous	$	2,000
TOTAL WASTEWATER SYSTEM O,M, AND R:	**$**	**43,000**

IV. Monthly User Rate

ESTIMATED WASTEWATER SYSTEM PROJECT COSTS:	**$**	**841,000**
Grant Proceeds:	$	888,000
SRF Loan Amount:	$	(47,000)
Annual Debt Service (20 yrs. @ 3.9% w/ 25% coverage):	$	(3,000)
Annual O,M, and R:	$	43,000
Total Wastewater System Monthly User Rate:	**$**	**53.00**

Arlington Regional Water and Sewer District
Huntington County, Indiana
Water System Improvements Project Cost Analysis

I. Estimated Construction Costs

1. Water System Improvements

Description	Installed Quantity	Installed Unit Price	Total Cost
1. Furnish service to existing wells	1 l.s.	$ 18,000.00	$ 18,000
2. Furnish and install pressure tank	1 l.s.	$ 15,000.00	$ 15,000
3. Furnish and install well pumps	1 l.s.	$ 20,000.00	$ 20,000
4. Furnish and install distribution mains	1 l.s.	$ 80,000.00	$ 80,000
5. Furnish and install hydrants and valves	1 l.s.	$ 10,000.00	$ 10,000
6. Furnish and install pressure filter iron removal	1 l.s.	$ 45,000.00	$ 45,000
7. Furnish and install standby generator	1 l.s.	$ 25,000.00	$ 25,000
8. Furnish and install new water services	1 l.s.	$ 15,000.00	$ 15,000
9. Furnish and install new domestic meters	1 l.s.	$ 7,500.00	$ 7,500
10. Furnish and install controls upgrade	1 l.s.	$ 8,000.00	$ 8,000
		Subtotal:	**$ 243,500**
		Construction Contingencies (10%+/-):	**$ 24,500**
		TOTAL ESTIMATED CONSTRUCTION COSTS:	**$ 268,000**

II. Non-Construction Costs

1. Water System Improvements

Description	Estimated Cost
1. District Formation and Planning Services	$ 30,000
2. Design and Construction Services	
A. Local Counsel	$ 10,000
B. Bond Counsel	$ 10,000
C. Financial Advisor/ Rate Consultant	$ 13,000
D. Engineering	$ 54,000
E. Land and Easements	$ 5,000
F. Miscellaneous	$ 5,000
TOTAL NON-CONSTRUCTION COSTS:	**$ 127,000**

III. Estimated Annual Operations Maintenance and Replacement

Description		Estimated Cost
1. Operating Labor	$	12,000
2. Purchased Power	$	1,500
3. Materials and Supplies	$	1,000
4. Repairs	$	1,000
5. Outside Services	$	3,000
6. Administrative	$	5,000
7. Miscellaneous	$	1,500
TOTAL WATER SYSTEM O,M, AND R:	**$**	**25,000**

IV. Monthly User Rate

ESTIMATED WATER SYSTEM PROJECT COSTS:	**$**	**395,000**
Grant Proceeds:	$	350,000
SRF Loan Amount:	$	45,000
Annual Debt Service (20 yrs. @ 3.9% w/ 25% coverage):	$	2,900
Annual O,M, and R:	$	25,000
Total Water System Monthly User Rate:	**$**	**37.00**

V. Totals- Sewer and Water Improvements

ESTIMATED TOTAL PROJECT COSTS:	**$**	**1,236,000**
TOTAL GRANT PROCEEDS:	$	1,238,000
TOTAL SRF LOAN AMOUNT:	$	(2,000)
TOTAL ANNUAL DEBT SERVICE:	$	(100)
TOTAL ANNUAL O,M, AND R:	$	68,000
TOTAL MONTHLY SEWER AND WATER RATE:	**$**	**90.00**

McMAHON
ASSOCIATES, INC.
ENGINEERS ■ ARCHITECTS
SCIENTISTS ■ SURVEYORS

952 S. State Road 2
Valparaiso, Indiana 46383
Tel: (219) 462-7743 Fax: (219) 464-8248
e-mail: mcmin@netnitco.net

ARLINGTON REGIONAL SEWER AND WATER DISTRICT

I. NON-REGIONALIZATION OF WASTEWATER SYSTEM

1.	Wastewater		
		Grant	$888,000
		Annual cost	$43,000
2.	Water		
		Grant	$350,000
		Annual cost	$25,000
3.	Total Grant needed		$1,238,000
	Total Annual Cost		$68,000
	User Rate/5,000 gpd		$90.00

II. REGIONALIZATION OF WASTEWATER SYSTEM

1.	Wastewater		
		Grant	$427,000
		Annual Cost	$38,300
2.	Water		
		Grant	$350,000
		Annual Cost	$25,000
3.	Total Grant needed		$777,000
	Total Annual cost		$63,300
	User Rate/5,000 gpd		$89.80

III. NEED CHANGE TO REGIONALIZE

Grant reduced by	$461,000
*Annual cost decrease	$4,700

*Note: City of Arlington charge to be negotiated to reduce annual cost.

OFFICE OF WATER MANAGEMENT IDEM
MAR 8 3 09 PM '00

STATE OF INDIANA

OFFICE OF THE ATTORNEY GENERAL

INDIANA GOVERNMENT CENTER SOUTH, FIFTH FLOOR
402 WEST WASHINGTON STREET • INDIANAPOLIS, IN 46204-2770

KAREN M. FREEMAN-WILSON
ATTORNEY GENERAL

TELEPHONE (317) 232-6201

March 6, 2000

Lynn Newlon
Ind. Dept. of Env. Mgmt
Ind. Gov. Center North – 12th Floor
106 N. Senate St
Indianapolis, IN 46204

Re: Litigation involving Estates and Arlington

Dear Ms. Newlon:

You asked for a summary of the utility litigation involving Estates, Arlington, and their owner, Donald G. Rice, Jr. There are a number of cases involving Don Rice and his utilities.

1. IDEM v. Donald G. Rice, Jr., Estates, Arlington, and Havenwood, in the Allen County Sup. Court Cause No. . 02D01-9312-CP-1878. This action was filed in 1993, and has resulted in two judgments against Donald G. Rice. As of May 1, 2000, (assuming no further payments), the utilities and Donald G. Rice owe the following:

	Arlington Utilities	Estates Utilities	Havenwood Utilities	Don Rice (jt. & sev. w/ Utilities)
Contempt Order 1/19/99	5,000	93,836		98,836
Contempt Order 11/17/99	5,000	10,000	7,500	22,500
Summary Judgement, 11/17/99			30,625	
Prejudgment Interest at 8%			21,233	
Post Judgment Interest at 8% (as of May 1, 2000)	700	9783	1525	10,783
Totals	10,700	113,619	60,883	132,119

Note: Don Rice's liability is derivative of each utilities' liability. Some of the rows and columns do not balance because (1) Don Rice is not jointly and severally liable on the summary judgment, and (2) prejudgment interest applies only to the summary judgment award. To the extent payments are applied towards the utilities' contempt judgments, or interest thereon, Don Rice's personal liability should be reduced by a dollar-for-dollar amount.

At the conclusion of the August 20, 1999, hearing, Judge Mathias ordered Donald G. Rice to surrender the stock in the utilities, and authorized the Department to solicit bids for the utilities. The Department received three bids, and is scheduled to present the bids to the Court for a valuation hearing on May 8, 2000. If the Court makes an appropriate valuation, the utilities will be conveyed and Don Rice will be given a credit towards the above amounts owed to the Department.

2. IDEM v. Don Rice, Cal.-Ind. Properties, Inc., in the Huntington Sup. Court Cause No. 35D01-9910-CP-00183. This is a fraudulent conveyance complaint in which the Department alleges that Don Rice conveyed away property to avoid paying the judgments owed to the Department. Summary Judgment hearing is scheduled for March 17, 2000. If successful, the Department will have a judgment against 40 residential building lots in Huntington County.

3. IURC v. Don Rice, Estates, in the Huntington Cir. Court Cause No. 35D01-9912-CP-00526. The IURC brought suit on December 20, 1999, asking the Huntington Circuit Court to appoint a receiver for Estates. McMahon Associates Inc. was appointed the receiver for Estates.

4. The administrative matters pending before the IURC, including:

IN THE MATTER OF A COMPLAINT AGAINST ESTATES UTILITIES, INC., AND ARLINGTON UTILITIES, INC.	)))	CAUSE NO. 41349

This matter was begun by the IURC as an investigation into these utilities. The investigation lead to an August 18, 1999, order compelling Don Rice to propose a plan of rehabilitation for the utilities.

IN RE THE MATTER OF AN INVESTIGATION INTO THE OPERATION OF ARLINGTON UTILITIES, INC. PURSUANT TO I.C. 8-1-30 ET SEQ.	)))	CAUSE NO. 41540

This matter was put on hold pending the sale of the utilities.

IN RE THE MATTER OF AN INVESTIGATION INTO THE OPERATION OF ESTATES UTILITIES, INC. PURSUANT TO I.C. 8-1-30 ET SEQ.	)))	CAUSE NO. 41541

This matter was put on hold pending the sale of the utilities. However, after December 14, 1999, when an explosion occurred in the Estates' water plant, the IURC appointed McMahon as the interim operator and receiver for Estates Utilities. This was the administrative action upon which the state court receivership is based. See item 3 above, IURC v. Don Rice, Estates, in the Huntington Cir. Court Cause No. 35D01-9912-CP-00526.

IN RE THE MATTER OF AN INVESTIGATION)
INTO THE OPERATION OF HAVENWOOD)
UTILITIES, INC. PURSUANT TO I.C. 8-1-30 ET SEQ.) CAUSE NO. 41542

This matter was put on hold pending the sale of the utilities.

I hope this is responsive to your inquiry as to the status of the various administrative and court actions which might concern the request for a regional water and sewer district. I will be happy to give you access to any publicly available documents or answer any further questions you might have.

Very truly yours,

Timothy J. Junk

cc Mark Stanifer
David Knox

McM
McMAHON
ASSOCIATES, INC.
ENGINEERS-ARCHITECTS
SCIENTISTS-SURVEYORS

FAX TRANSMITTAL

FAX MACHINE NUMBER (219) 464-8248

FAX: 317-232-8406 Date: November 13, 2000

TO: Indiana Dept. of Environmental Mgmt. McM No.

ATTN: Lynne Newlon

FROM: Melissa

RE: Arlington RWSD and Norwood RWSD

PAGE 1 OF 8 (INCLUDING TRANSMITTAL SHEET)

MESSAGE:

Lynne,

Attached are the cost estimates that are in the Preliminary Engineering Reports for the above noted projects. I believe they the same as what was sent in September, but this way there is no question that everyone has the same information.

cc: Gary
Todd
Lee

CONFIDENTIALITY NOTICE: This message and any accompanying documents are intended for the use of the individual(s) or entity to which they are addressed and may contain information that is confidential and legally privileged. If you are not the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone to arrange the return of the original documents to us via the U.S. Postal Service without making a copy. Thank you for your cooperation.

---

952 S. State Road 2 Valparaiso, IN 46383 (219) 462-7743

IF YOU DO NOT RECEIVE ALL PAGES, PLEASE CALL BACK IMMEDIATELY

TABLE V I
PROJECTED CONSTRUCTION AND OPERATIONS COST ANALYSIS FOR WATER SYSTEM
NORWOOD REGIONAL WATER AND SEWER DISTRICT
Revised: 8/4/00

PUBLICLY FUNDED CONSTRUCTION COSTS

Description	Installed Quantity	Installed Unit Cost	Installed Cost
Supply			
1. Furnish and install new wells - structure	2 ea.	$35,000.00	$70,000
2. Furnish and install new wells - electrical controls	2 ea.	$35,000.00	$70,000
3. Furnish and install 8" transmission main	1,000 l.f.	$30.00	$30,000
4. Furnish and install new elevated tank	1 ea.	$250,000.00	$250,000
Subtotal			$420,000
Distribution			
1. Furnish and install 8-inch distribution main	5,725 l.f.	$30.00	$171,750
2. Furnish and install 6-inch distribution main	15,900 l.f.	$25.00	$397,500
3. Furnish and install 8-inch main valves	10 ea.	$750.00	$7,500
4. Furnish and install 6-inch main valves	30 ea.	$500.00	$15,000
5. Furnish and install 6-inch hydrant w/valve	35 ea.	$1,500.00	$52,500
6. Furnish and install pressure reducing station	1 l.s.	$8,000.00	$8,000
7. Furnish and install street repairs	1 l.s.	$95,000.00	$95,000
8. Furnish and install lateral reconstruction	175 ea.	$500.00	$87,500
Subtotal			$834,750.00
Treatment			
1. Furnish and install new treatment building	1 l.s.	$215,000.00	$215,000
2. Furnish and install new high service pumps	2 ea.	$15,000.00	$30,000
3. Furnish and install new pump controls	1 ea.	$10,000.00	$10,000
4. Furnish and install new disinfection system	1 ea.	$20,000.00	$20,000
5. Furnish and install new standby generator	1 ea.	$30,000.00	$30,000
6. Furnish drive, landscape and fence	1 l.s.	$20,000.00	$20,000
Subtotal			$325,000
Demolition			
1. Abandon existing wells	2 ea.	$9,000.00	$18,000
Subtotal			$18,000
Construction Cost			$1,597,750
Contingencies @ 10%			$158,250
Construction Overage			$30,000
SUBTOTAL PUBLIC COSTS:			$1,786,000

PRIVATELY FUNDED CONSTRUCTION COSTS

Description	Installed Quantity	Installed Unit Cost	Installed Cost
SUBTOTAL PRIVATE COSTS:			$0

NON-CONSTRUCTION COSTS

1. District Formation and Planning Services	$35,000
2. Design and Construction Services	
A. Local Counsel	$10,000
B. Bond Counsel	$20,000
C. Financial Advisor	$25,000
D. Design	$160,000
E. Bidding	$10,000
F. Construction Basic Services	$65,000
G. Construction On-site Services	$95,000
H. Post Construction Services	$10,000
I. Aerial Mapping	$9,000
J. Geotechnical Services	$3,000
K. Grant Administration	$7,000
L. Land and Easements	$30,000
M. Miscellaneous	$10,000
SUBTOTAL NON-CONSTRUCTION COSTS	$489,000

PROJECTED OPERATIONS, MAINTENANCE & REPLACEMENT COSTS

1. Operating Power	$40,000
2. Purchase Power	$10,000
3. Materials & Supplies	$15,000
4. Repairs	$5,000
5. Outside Services	$10,000
6. Administrative	$10,000
7. Miscellaneous	$5,000
8. REMC	$3,000
9. Replacement	$3,000
Annual OM&R Costs:	$101,000

TAL PUBLIC, PRIVATE AND NON-CONSTRUCTION COSTS:	$2,275,000

PROJECTED CONSTRUCTION AN ERATIONS COST ANALYSIS
FOR WASTEWATER SYSTEM IMPROVEMENTS
NORWOOD REGIONAL WATER AND SEWER DISTRICT
Revised: 8/30/00

TABLE V-1

PUBLICLY FUNDED CONSTRUCTION COSTS

Description	Installed Quantity	Installed Unit Cost	Installed Cost	Life (Years)	Salvage Value	Replacement Cost
A. Collection System Improvements						
1. Furnish and install I & I reaction (sewer rehabilitation)	1 ea.	$145,000.00	$145,000	50	$0	$0
2. Furnish and install lift station rehabilitation	2 ea.	$20,000.00	$40,000	50	$0	$0
3. Furnish trailer mounted standby generator	1 ea.	$35,000.00	$35,000	50	$0	$0
4. Road Repairs	1 ea.	$30,000.00	$30,000	50	$0	$0
Subtotal			**$250,000**			
B. Transport to Huntington						
1. Furnish and install lift station	1 ea.	$95,000.00	$95,000	50	$0	$0
2. Furnish and install 6-inch PVC force main sewer (length)	7,000 l.f.	$28.00	$196,000	50	$0	$0
3. Furnish and install stream crossing	1 ea.	$10,000.00	$10,000	50	$0	$0
4. Furnish and install naw Hwy. 24 crossing	1 ea.	$25,000.00	$25,000	50	$0	$0
5. Furnish and install sampling manhole	1 ea.	$5,000.00	$5,000	50	$0	$0
6. Furnish and install flow metering manhole	1 ea.	$16,000.00	$16,000	20	$0	$0
7. Furnish WWTF demolition	1 ea.	$40,000.00	$40,000	20	$0	$0
8. Furnish and install telemetry system for lift station	1 ea.	$10,000.00	$10,000	20	$0	$0
Subtotal			**$397,000**			
Construction Cost			**$647,000**			
Contingencies @ 10%			**$65,000**			
SUBTOTAL PUBLIC COSTS:			**$712,000**		**$0**	**$0**

PRIVATELY FUNDED CONSTRUCTION COSTS

Description	Installed Quantity	Installed Unit Cost	Installed Cost	Life (Years)	Salvage Value	Replacement Cost
SUBTOTAL PRIVATE COSTS:			**$0**		**$0**	**$0**

PROJECTED CONSTRUCTION AND OPERATIONS COST ANALYSIS
FOR WASTEWATER SYSTEM IMPROVEMENTS
NORWOOD REGIONAL WATER AND SEWER DISTRICT cont.
Revised: 8/30/00

NON-CONSTRUCTION COSTS

1. District Formation and Planning Services (Legal/Eng'n))	$35,000
2. Design and Construction Services	
A. Local Counsel	$10,000
B. Bond Counsel	$20,000
C. Financial Advisor	$25,000
D. Design	$60,000
E. Bidding	$5,000
F. Construction Basic Services	$25,000
G. Construction On-Site Services	$40,000
H. Post Construction Services	$10,000
I. Aerial Mapping	$9,000
J. Geotechnical Services	$3,000
K. Grant Administration	$7,000
L. Land and Easements	$10,000
M. Connection Fee to the City of Huntington	$57,000
N. Miscellaneous	$10,000
SUBTOTAL NON-CONSTRUCTION COSTS:	**$326,000**

TOTAL PUBLIC, PRIVATE AND NON-CONSTRUCTION COSTS:	**$1,038,000**

PROJECTED OPERATIONS, MAINTENANCE & REPLACEMENT COSTS

1. Operating Labor	$28,250
2. Purchase Power	$10,000
3. Materials and Supplies	$5,000
4. Repairs	$5,000
5. Outside Services	$5,000
6. Administrative	$5,000
7. Contract Services Huntington	$85,000
8. REMC	$3,000
9. Miscellaneous	$5,000
10. Replacement	$3,000
ANNUAL O, M, and R COSTS:	**$154,250**

SALVAGE VALUE AND REPLACEMENT COSTS SUMMARY

Salvage Value	Replacement Cost
$0	$0

PRESENT WORTH ANALYSIS SUMMARY

Description	Present Worth
Total Projected Capital Costs:	
Present Worth of O, M, and R:	
Present Worth of Salvage Value:	$0

TOTAL ALTERNATIVE PRESENT WORTH:	**$0**

Present worth analysis is based on 8.00% annual discount rate averaged over the twenty-year planning period.

SUMMARY OF PROJECTED INITIAL CAPITAL EXPENDITURES

Subtotal Publicly Costs:	$1,038,000
Subtotal Private Costs:	$0
Total Costs:	$1,038,000
Grant Proceeds:	$934,200
SRF Loan Amount:	$103,800
*Annual Debt Service:	$6,700
Annual O, M & R:	$154,250
Estimated Monthly User Rate:	$53.70

*20 yrs. @ 3.9% w/25% Coverage

TABLE V-II PROJECTED CONSTRUC AND OPERATIONS COST ANALYSIS
FOR WATER SYSTEM
ARLINGTON REGIONAL WATER AND SEWER DISTRICT
Revised: 8/4/00

PUBLICLY FUNDED CONSTRUCTION COSTS

Description	Installed Quantity	Installed Unit Cost	Installed Cost	Life (Years)	Salvage Value	Replacement Cost
Transmission to Roanoke						
1. Furnish and install 10" Main	8,500 l.f.	$35.00	$297,500	50	$0	$0
2. Furnish and install road repair	1 ea.	$20,000.00	$20,000	50	$0	$0
3. Furnish and install 10" valves	10 ea.	$1,000.00	$10,000	50	$0	$0
4. Furnish and install meter	1 ea.	$15,000.00	$15,000	50	$0	$0
Subtotal			**$342,500**			
Distribution						
1. Furnish and install 6-inch distribution main	3,300 l.f.	$25.00	$82,500	50	$0	$0
2. Furnish and install fire hydrant	6 ea.	$2,000.00	$12,000	50	$0	$0
3. Furnish and install 6-inch valves	10 ea.	$500.00	$5,000	50	$0	$0
4. Furnish and install new water service to property line	66 ea.	$500.00	$33,000	50	$0	$0
5. Furnish and install water meters	66 ea.	$200.00	$13,200	50	$0	$0
6. Furnish and install road repair	1 l.s.	$20,000.00	$20,000	50	$0	$0
Subtotal			**$165,700.00**			
Demolition						
1. Add wells	2 ea.	$4,000.00	$8,000	50	$0	$0
2. Demo building	1 ea.	$20,000.00	$20,000	50	$0	$0
Subtotal			**$28,000**			
Construction Cost			**$536,200**			
Contingencies @ 10%			**$53,800**			
	SUBTOTAL PUBLIC COSTS:		**$590,000**		**$0**	**$0**

PRIVATELY FUNDED CONSTRUCTION COSTS

Description	Installed Quantity	Installed Unit Cost	Installed Cost	Life (Years)	Salvage Value	Replacement Cost
	SUBTOTAL PRIVATE COSTS:		**$0**		**$0**	**$0**

11/14/00 TUE 09:03 FAX 2194648248 MCMAHON ASSOCIATES 005

TABLE V-I PROJECTED CONSTRUCT AND OPERATIONS COST ANALYSIS
FOR WATER SYSTEM
ARLINGTON REGIONAL WATER AND SEWER DISTRICT cont.
Revised: 8/4/00

11/14/00 TUE 09:04 FAX 2194648248 MCMAHON ASSOCIATES 006

NON-CONSTRUCTION COSTS

1. District Formation and Planning Services	$30,000
2. Design and Construction Services	
A. Local Counsel	$10,000
B. Bond Counsel	$10,000
C. Financial Advisor/Rate Consultant	$15,000
D. Design	$60,000
E. Bidding	$5,000
F. Construction Basic Services	$25,000
G. Construction On-Site Services	$35,000
H. Post Construction Services	$5,000
I. Aerial Mapping	$4,000
J. Geotechnical Services	$2,000
K. Land and Easements	$5,000
L. Connection Charge to Roanoke (66 homes @ $845.00)	$55,700
M. Miscellaneous	$5,000
SUBTOTAL NON-CONSTRUCTION COSTS:	**$266,700**

TOTAL PUBLIC, PRIVATE AND NON-CONSTRUCTION COSTS:	**$856,700**

PROJECTED OPERATIONS, MAINTENANCE & REPLACEMENT COSTS

1. Operating Labor	$6,000
2. Purchase Power	$1,500
3. Materials and Supplies	$1,000
4. Repairs	$1,000
5. Outside Services	$2,000
6. Administrative	$3,000
7. Contracted Roanoke Charge	$12,000
8. Miscellaneous	$1,000
9. REMC Billing	$1,000
ANNUAL O, M, and R COSTS:	**$28,500**

SALVAGE VALUE AND REPLACEMENT COSTS SUMMARY

Salvage Value	Replacement Cost
$0	$0

PRESENT WORTH ANALYSIS SUMMARY

Description	Present Worth
Total Projected Capital Costs:	
Present Worth of O, M, and R:	
Present Worth of Salvage Value:	
TOTAL ALTERNATIVE PRESENT WORTH:	

Present worth analysis is based on 8.00% annual discount rate averaged over the twenty-year planning period.

SUMMARY OF PROJECTED INITIAL CAPITAL EXPENDITURES

Subtotal Public Costs:	$856,770
Subtotal Privately Costs:	$0
Total Costs:	$856,770
Grant Proceeds:	$780,770
SRF Loan Amount:	$76,000
*Annual Debt Service:	$5,600
Annual O, M & R:	$28,500
Estimated Monthly User Rate:	$44.90

*20 yrs @ 3.9% w/25% Coverage

TABLE V-II PROJECTED CONSTRUCTION AND OPERATIONS COST ANALYSIS
FOR WASTEWATER SYSTEM IMPROVEMENTS
ARLINGTON REGIONAL WATER AND SEWER DISTRICT
Revised: 8/4/00

PUBLICLY FUNDED CONSTRUCTION COSTS

Description	Installed Quantity	Installed Unit Cost	Installed Cost	Life (Years)	Salvage Value	Replacement Cost
A. Transportation						
1. Furnish and install lift station	1 ea.	$65,000.00	$65,000	50	$0	$0
2. Furnish and install 4" forcemain	8,500 l.f.	$20.00	$170,000	50	$0	$0
3. Furnish and install air release manhole	2 ea.	$5,000.00	$10,000	50	$0	$0
4. Furnish and install flow meter	1 ea.	$10,000.00	$10,000	50	$0	$0
5 Furnish and install road repair	1 ea.	$20,000.00	$20,000	50	$0	$0
Subtotal			**$275,000**			
B. Collection						
1. Furnish and install I&I reduction and sewer main repair	1 ea.	$50,000.00	$50,000	50	$0	$0
2. Furnish and install road repair	1 ea.	$10,000.00	$10,000	50	$0	$0
Subtotal			**$60,000**			
C. Demolition						
1. Furnish and install lagoon abandonment (liquid disposal)	300,000 gal	$0.10	$30,000	50	$0	$0
2. Furnish and install lagoon abandonment (solid disposal)	500 cy	$31.00	$15,500	50	$0	$0
3. Furnish and install grading	1 ea.	$5,000.00	$5,000	50	$0	$0
Subtotal			**$50,500**			
Construction Cost			**$385,500**			
Contingencies @ 10%			**$38,500**			
SUBTOTAL PUBLIC COSTS:			**$424,000**		**$0**	**$0**

PRIVATELY FUNDED CONSTRUCTION COSTS

Description	Installed Quantity	Installed Unit Cost	Installed Cost	Life (Years)	Salvage Value	Replacement Cost
SUBTOTAL PRIVATE COSTS:			**$0**		**$0**	**$0**

11/14/00 TUE 09:05 FAX 2194648248 MCMAHON ASSOCIATES 007

TABLE V-1 PROPOSED CONSTRUCTION AND OPERATIONS COST ANALYSIS
FOR WASTEWATER SYSTEM IMPROVEMENTS
ARLINGTON REGIONAL WATER AND SEWER DISTRICT cont.
Revised: 8/4/00

NON-CONSTRUCTION COSTS

1. District Formation and Planning Services	$30,000
2. Design and Construction Services	
A. Local Counsel	$10,000
B. Bond Counsel	$10,000
C. Financial Advisor / Rate Consultant	$15,000
D. Design	$40,000
E. Bidding	$5,000
F. Construction Basic Services	$15,000
G. Construction On-Site Services	$25,000
H. Post Construction Services	$5,000
I. Aerial Mapping	$4,000
J. Geotechnical Services	$2,000
K. Lands and Easements	$5,000
L. Connection Charge to Roanoke (66 @ $1500.00)	$99,000
M. Miscellaneous	$5,000
SUBTOTAL NON-CONSTRUCTION COSTS:	**$270,000**

TOTAL PUBLIC, PRIVATE AND NON-CONSTRUCTION COSTS:	**$694,000**

PROJECTED OPERATIONS, MAINTENANCE & REPLACEMENT COSTS

1. Operating Labor	$6,000
2. Purchase Power	$1,500
3. Materials and Supplies	$1,000
4. Repairs	$1,000
5. Outside Services	$2,000
6. Administrative	$3,000
7. Contracted treatment charge from Roanoke	$12,000
8. Miscellaneous	$1,000
9. REMC Billing	$1,000
ANNUAL O, M, and R COSTS:	**$28,500**

SALVAGE VALUE AND REPLACEMENT COSTS SUMMARY

Salvage Value	Replacement Cost
$0	$0

PRESENT WORTH ANALYSIS SUMMARY

Description	Present Worth
Total Projected Capital Costs:	
Present Worth of O, M, and R:	
Present Worth of Salvage Value:	
TOTAL ALTERNATIVE PRESENT WORTH:	

Present worth analysis is based on 8.00% annual discount rate averaged over the twenty-year planning period.

SUMMARY OF PROJECTED INITIAL CAPITAL EXPENDITURES

Subtotal Publicly Costs:	$694,000
Subtotal Private Costs:	$0
Total Costs:	$694,000
Grant Proceeds:	$618,000
SRF Loan Amount:	$76,000
*Annual Debt Service:	$5,600
Annual O, M & R:	$28,500
Estimated Monthly User Rate:	$44.90

*20 yrs. @ 3.9% w/25% Coverage