
EXHIBIT F1

SEWAGE TRANSPORTATION AGREEMENT, DATED
NOVEMBER 20, 2015, BY AND AMONG THE MUNICIPAL
SEWER AUTHORITY OF THE TOWNSHIP OF LOWER
MAKEFIELD, LOWER MAKEFIELD TOWNSHIP, AND YARDLEY
BOROUGH SEWER AUTHORITY

SEWAGE TRANSPORTATION AGREEMENT
AMONG THE MUNICIPAL SEWER AUTHORITY OF THE TOWNSHIP
OF LOWER MAKEFIELD, LOWER MAKEFIELD TOWNSHIP AND
YARDLEY BOROUGH SEWER AUTHORITY

THIS AGREEMENT, made this 20th day of November, 2015,
by and among the **MUNICIPAL SEWER AUTHORITY OF THE TOWNSHIP OF LOWER
MAKEFIELD** and **LOWER MAKEFIELD TOWNSHIP** (hereinafter referred to
collectively as "LMT"), and the **YARDLEY BOROUGH SEWER AUTHORITY**
(hereinafter "YBSA"), all of Bucks County, Pennsylvania.

W I T N E S S E T H:

WHEREAS, LMT and YBSA are parties to an Agreement dated March
11, 1964, entitled "Lower Makefield-Yardley Sewage Transportation
Agreement" and Memorandum of Understanding Relative thereto dated
March 14, 1977 (hereinafter collectively the "1964 Agreement");
and

WHEREAS, LMT and YBSA and the Municipal Authority of the
Borough of Morrisville (hereinafter "MA") are parties to an
Agreement dated September 1, 1977 and a first and second Amendment
thereto dated October 8, 1991 and June 24, 1993 (hereinafter the
"Treatment Agreement") relative to the treatment of sanitary
sewage originating in Yardley Borough and Lower Makefield Township
and transported to the MA Treatment Plant for treatment and
processing; and

WHEREAS, LMT and YBSA have constructed and connected to certain jointly used sewage collection facilities as set forth in the 1964 Agreement and the Treatment Agreement; and

WHEREAS, certain controversies have arisen concerning the interpretation of the 1964 Agreement, as amended, and the parties have deemed it to be in their respective best interests to terminate that agreement and to enter into a new agreement relative to the parties' rights, responsibilities and obligations with respect to the use and maintenance of the jointly used sewage collection facilities situate in Yardley Borough and Lower Makefield Township as hereinafter defined.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the parties hereto, intending to be legally bound hereby, agree as follows:

Section I: Definitions

"Authority" or **"Authorities"** shall mean the Lower Makefield Sewer Authority and/or the Yardley Borough Sewer Authority.

"Average Capacity Allocation" shall mean the average daily flow capacity assigned to each party as set forth on Exhibit "B" attached hereto and incorporated herein by reference.

"Capacity Allocation" shall mean the flow capacity assigned to each party as set forth on Exhibit "B" attached hereto and incorporated herein by reference.

"Capital Expenses" shall mean the total of all expenditures incurred by LMT or YBSA to acquire, improve, or upgrade the Jointly Used Facilities situate within their respective municipal boundaries as is necessary to extend the useful life of the Jointly Used Facilities.

"Collection Facilities" shall mean existing wastewater collection and conveyance facilities, together with other appurtenances and any additions, modifications, and/or improvements thereto, which are owned and operated by LMT and/or YBSA and which are utilized for collection and conveyance of wastewater originating from Lower Makefield Township and/or Yardley Borough.

"Consulting Engineer" shall mean an engineer or engineering firm or professional engineer registered in Pennsylvania having a favorable repute for skill and experience in the construction and operation of sewage facilities and appointed by either party hereto.

"Costs of Construction" shall mean all expenses which are properly chargeable to capital under sound accounting practice or which are incidental to the financing and construction of additions and improvements to the Collection Facilities, including without limiting the generality of the foregoing:

- (a) Amounts payable to contractors and costs incident to the award of contracts.

- (b) Costs of labor, facilities and services furnished to an Authority by others, materials and supplies purchased by an Authority or others, and permits and licenses obtained by or on behalf of an Authority.
- (c) Engineering, legal, accounting and other professional and advisory fees incurred in Capital Projects.
- (d) Premiums for contract bonds and insurance during construction and costs on account of personal injuries and property damage in the course of construction and insurance against the same.
- (e) Interest during construction.
- (f) Administrative expenses of an Authority directly attributable to construction.
- (g) Printing, engraving, and other expenses of financing.
- (h) Costs, fees and expenses in connection with the acquisition of real property or rights therein.
- (i) Cost of equipment necessary to the completion and proper operation of the Collection System.
- (j) Amounts required to repay temporary (bond anticipation) loans made to finance the costs of any improvements to the Collection System.

"Daily Flow" shall mean the sewage flowing through a metering location during a 24 hour period beginning at midnight. Monthly, quarterly and annual average daily flows shall be the sum of the Daily Flows during the respective period divided by the number of days in that period. Monthly, quarterly and annual flows shall be the sum of the Daily Flows during the respective period.

"Discharge Point" shall mean a location at which the sanitary sewer collection system of one Authority connects to the collection system of the other Authority or to the collection system of the Morrisville Authority.

"Jointly Used Facilities" shall mean those Collection Facilities located in Morrisville Borough, Yardley Borough and Lower Makefield Township jointly used to convey sewage from Yardley Borough and Lower Makefield Township through each municipality for treatment at the Morrisville Authority Treatment Plant as described on Exhibit "A" attached hereto and incorporated herein by reference.

"LMT" shall mean the Municipal Sewer Authority of the Township of Lower Makefield and Lower Makefield Township, collectively.

"Morrisville Authority" shall mean the Municipal Sewer Authority of the Borough of Morrisville.

"Municipality" shall mean Yardley Borough or Lower Makefield Township.

"Operation and Maintenance Expenses" shall mean the total of all of the following items, each such item being determined for the calendar year or portion thereof under consideration, of all the reasonable expenses and costs incurred by LMT or YBSA for the administration, operation, maintenance and routine repair of the Jointly Used Facilities situate within their respective municipal boundaries or under their control, as necessary for rendering sewage transmission services to both Authorities hereunder. Operating and maintenance expenses shall include, under sound engineering and accounting practices, the following:

- (a) actual or assigned salaries and wages of administrative, operation or maintenance personnel of the Authority engaged in operating and maintaining the Jointly Used Facilities together with the social security and unemployment taxes, workmen's compensation, insurance premiums, health and accident insurance premiums and pension benefits, or any other similar benefits or costs applicable thereto, and in the case of shared employees, prorating such items in accordance with such employee's time spent on matters pertaining to

the treatment or disposal of Sewage by the applicable Authority;

(b) power, chemicals, fuel, materials, supplies, equipment and tools used or employed for the operation and maintenance of the Jointly Used Facilities;

(c) costs of routine maintenance and repairs (including in kind replacements), costs of any minor work done under any contract with respect to the Jointly Used Facilities, costs of monitoring, inspection of Jointly Used Facilities and routine maintenance work not performed by Authority employees;

"Prohibited Wastes" shall mean any waste prohibited by the Morrisville Treatment Agreement, as amended or supplemented from time to time, or applicable law.

"Sewage," "Wastewater," "Sanitary Sewage," and **"Sanitary Waste"** shall mean the normal, water-carried household and toilet wastes from an improved residential property or the restroom facilities of any commercial or industrial property.

"YBSA" shall mean the Yardley Borough Sewer Authority.

Section II. Jointly Used Facilities.

It is acknowledged and confirmed that LMT and YBSA have constructed the Jointly Used Facilities, in accordance with the

1964 Agreement, and as described on Exhibit "A" attached hereto and incorporated herein by reference.

Section III. Limitations on Connection and Use of Jointly Used Facilities.

1. Subject to the limitations set forth herein, LMT hereby ratifies and confirms unto YBSA the perpetual right to connect to and continue the connection and use of the Jointly Used Facilities situate in Lower Makefield Township or extending to the Morrisville Authority Treatment Plant.

2. Subject to the limitations set forth herein, YBSA hereby ratifies and confirms unto LMT the perpetual right to connect to and continue the connection and use of the Jointly Used Facilities situate in Yardley Borough.

3. All points of connection made by YBSA to the Jointly Used Facilities shall be made and maintained at the sole cost and expense of YBSA. All points of connection made by LMT to the Jointly Used Facilities shall be made and maintained at the sole cost of LMT.

4. The parties' rights to permit connections to and use the Jointly Used Facilities shall be subject to the limitations on permitted Capacity Allocations set forth on Exhibit "B" attached hereto and incorporated herein by reference.

5. No payments made pursuant to any provision of this Agreement by YBSA to LMT shall entitle it to any ownership or

interest in collection facilities or jointly used facilities in Lower Makefield Township. No payments made pursuant to any provisions of this Agreement by LMT to YBSA shall entitle it to any ownership or interest in collection facilities and jointly used facilities located in YBSA's system.

Section IV. Measuring Flows/Excess Flows.

1. The parties acknowledge that there are or will be pursuant to this agreement, Discharge Points which are metered at the following locations:

- a. Main Street (metered) (Discharge Point Number 1)
- b. River Road (metered) (Discharge Point Number 2)
- c. Buck Creek (metered) (Discharge Point Number 3)
- d. Sandy Run Road (metered) (Discharge Point Number 4)
- e. Yardley Crossing (metered) (Discharge Point Number 5)
- f. Ferry Road (metered) (Discharge Point Number 6)

These Discharge Points are set forth and numbered on the plan attached hereto and incorporated herein as Exhibit "A"; five (5) of the meters are located at Discharge Points between the LMT and YBSA sanitary sewer collection systems, and one (1) is between the LMT and MA systems. In each case, the meters measure sewage flows from the former collection system to the latter. The meters, meter pits and meter chambers shall be maintained by LMT at its

cost, except that as a Jointly Used Facility the cost of maintenance of the Ferry Road Metering Chamber shall be shared by YBSA and LMT. YBSA shall have the right to inspect the meter pits and facilities at all reasonable times upon request. The parties agree that the meters will be maintained in a satisfactory state of repair at all times in order to insure that an accurate record of flow is maintained. The parties agree that the meters will be calibrated as reasonably necessary to maintain the accuracy of the meters, but no less than every six months, by a person or firm capable of certifying the meter calibration in question. A copy of the certified calibration report shall be provided to both parties. LMT shall provide meter flow reports to YBSA no less frequently than on a monthly basis. Such flow reports shall be provided in an electronic spreadsheet format such as Excel or equivalent electronic program, within one (1) year of the date of this Agreement.

2. Each party shall have the right, at any reasonable time, upon written request, to require the other party to have any meters or other measuring devices installed hereunder by such other party inspected for accuracy by the manufacturer thereof or other competent person and to report the findings of such inspection to the party requesting the same. If, upon such inspection, any such device is determined to be registering accurately, the cost of such inspection shall be borne by the party requesting the same,

but if such device is determined not to be registering accurately, the cost of such inspection and the cost of the repair or replacement of such device shall be borne by the other party.

3. Average daily flow at each of the Discharge Points shall be calculated based on meter data attributed to each discharge point.

4. The parties acknowledge that a flow meter is located at the Yardley Pump Station, the purpose of which is to measure the flow discharged by that pump station to the Canal Interceptor. This meter shall be maintained by YBSA, although as a part of a Jointly Used Facility the cost of maintenance shall be shared by YBSA and LMT. LMT shall have the right to inspect the Yardley Pump Station meter at all reasonable times upon request. The parties agree that the meter will be maintained in a satisfactory state of repair at all times in order to insure that an accurate record of flow is maintained. The parties agree that the meter will be calibrated as reasonably necessary to maintain the accuracy of the meter, but no less than every six months, by a qualified third party. A copy of the certified calibration report shall be provided to both parties. YBSA shall provide meter flow reports to LMT no less frequently than on a monthly basis.

5. If any meter shall be out of service for any reason whatsoever for one week or less, those days without service shall be excluded from all Average Daily Flow calculations associated

with that location. If any meter is out of service for greater than one week, the affected month(s) shall not be considered in any Average Daily Flow calculations and instead the Average Monthly Flow for identical month(s) in the preceding three (3) years shall be used.

6. For the purpose of determining excess flow, the parties' Capacity Allocations are as set forth on Exhibit "B" attached hereto and incorporated herein by reference.

7. In the event that either party shall exceed its annual maximum Capacity Allocation in a single calendar year, the responsible party shall be obligated to provide to the other party an engineering study/corrective plan. Should either party exceed its annual maximum Capacity Allocation for three consecutive calendar years, a moratorium on new connections shall be imposed pending correction.

In the event either party shall exceed its 3-month maximum Capacity Allocation within a single calendar year, the responsible party shall provide to the other party an engineering study/corrective plan. Should either party exceed its 3-month maximum Capacity Allocation in three consecutive calendar years, a moratorium on all new connections shall be imposed pending corrective action.

Should either party exceed its daily maximum Capacity Allocation on six occasions in any calendar year, the responsible

party shall provide the other party an engineering study/corrective plan. After three consecutive years in which six or more such events occur, the responsible party shall provide the other party with a revised engineering study/corrective plan.

The above requirements shall not apply to excessive flows resulting from a federally named storm for up to four days maximum in any calendar year.

Section V. Penalties, Charges and Damages.

1. The parties agree that regardless of any remedies available hereunder or actions taken in accordance with Section IV, in the event that either party exceeds its Capacity Allocation, that party will:

- A. Pay the other party for any related maintenance and/or capital costs caused to the Jointly Used Facilities as a result of the offending party's exceeding its Capacity Allocation;
- B. Indemnify and hold harmless the other party from any fines, charges, costs or penalties imposed on that party as a result of the offending party exceeding its Capacity Allocation, including any engineering or counsel fees incurred by the party in defending actions brought against that party resulting from the offending party's exceeding its Capacity Allocation

Section VI. Characteristics of Sewage.

The parties agree that all sewage delivered to the Jointly Used Facilities shall contain no Prohibited Waste. LMT shall be responsible for, and shall pay the full cost of, any damage to the YBSA facilities resulting from the discharge of Prohibited Waste therein which originates in Lower Makefield Township. YBSA shall be responsible for, and shall pay the full cost of, any damage to the LMT facilities resulting from the discharge of Prohibited Waste therein which originates in Yardley Borough.

Section VII. Capital Improvements.

1. **General.** On or before August 1 of each year, each party shall supply to the other a capital improvement report specifying capital improvements to the Jointly Used Facilities within its system that it recommends installing or completing for the following year. Such report shall include a detailed engineering report setting forth the reasons for the capital improvement. Each party, within forty five (45) days from receipt of the capital improvement report, shall approve or reject all or a portion of the capital improvement report by written notice to the other party. The parties, however, shall not unreasonably withhold their approval of the report. Each party shall be responsible for the payment of its share of the actual costs of construction incurred in completing the capital improvements in proportion to each

party's Average Capacity Allocation for the affected Jointly Used Facility as defined in Exhibit "B." In the event either party shall fail to provide written notice of its approval or rejection of the other's capital improvement report within the aforesaid 45 day time period, such party shall be deemed to have accepted the capital improvement report and shall be responsible for the payment of its proportionate share as defined herein. Capital plans shall be developed and shared on an annual basis as to items not included in five year plans. Five year plans shall also be shared on an annual basis.

2. **Proposed Capital Improvements.** As a result of a self-imposed moratorium on future capacity and to address future capacity requirements, the parties have agreed that upon execution of this Agreement they will proceed with certain specific proposed capital improvements to joint facilities, identified as follows:

A. Yardley Borough Sewer Authority will provide plans and specifications for, and cause to be constructed, a replacement for the Brock Creek Line ("Brock Creek Replacement") in accordance with the cost estimate and description of project attached as Exhibit "C".

B. Yardley Borough Sewer Authority will provide plans and specifications for, and cause to be constructed, the Buck Creek Bypass Sewer ("Buck Creek

Bypass") in accordance with cost estimate and description of project attached as Exhibit "D".

C. Yardley Borough Sewer Authority will provide plans and specifications for, and cause to be constructed, the Longshore Bypass Sewer ("Longshore Bypass") in accordance with cost estimate and description of project attached as Exhibit "E".

Each party shall be responsible for the payment of its share of the actual costs of construction incurred in completing the above specific capital improvements in proportion to each party's average capacity allocation for the affected Jointly Used Facility as defined in Exhibit "B".

Any costs proposed in excess of the attached estimates must be approved by each party and shall be subject to the same apportionment as defined in Exhibit "B".

3. In the event the party undertaking a capital project involving a Jointly Used Facility, resulting from an emergency or based on the receipt of grant funding, directly or indirectly obtains financing for the entire project, then the other party will have the option of paying its proportionate share of the project costs periodically pursuant to the debt service schedule required for such financing, in direct proportion to such party's proportionate share of the project costs as determined herein. Each payment shall be due no later than 30 days prior to each

payment date for debt service on the financing. In addition, to the extent the direct costs of obtaining such financing are not included in the principal amount of the financing obtained, then the contributing party shall also be responsible for a proportionate share of such costs when due. Each party agrees to give the other party written notice that it has obtained or will be obtaining financing for a project and the terms of such financing. Within 60 days of receipt of such notice, the contributing party agrees to give the party undertaking the project written notice whether or not it intends to pay its share of the project costs pursuant to such financing terms. In the event no response is received within such 60 day period, the party will be deemed to have decided not to pay its share of costs based on such financing terms.

4. Any federal or state grants received by another party on account of a project involving a Jointly Used Facility shall be credited to the parties hereto on the basis of their shares in the costs of such project.

5. During the course of any capital construction project, reconciliations will be provided on a monthly basis, and payments by either party to the other shall be due within sixty (60) days of invoice.

6. For any capital improvement projects, a party's obligation to proceed with the project will be contingent upon confirmation of financing for the project by both parties.

Section VIII. Operation and Maintenance Expenses.

Each party shall be responsible for a share of the annual operation and maintenance (O&M) expenses of the Jointly Used Facilities in proportion to its respective Annual Flow through those facilities. For O&M cost sharing purposes, all Jointly Used Facilities for which YBSA is responsible shall be considered together and all Jointly Used Facilities for which LMT is responsible shall be considered together. The respective parties' shares of O&M costs for any Jointly Used Facilities will be calculated by taking that party's Annual Flow through those Facilities for the calendar year in which the costs were incurred, and dividing by the total Annual Flow through those same Facilities. All Annual Flows shall be as metered at the Yardley Pump Station and metered Discharge Points. Upon completing the preceding calculations, each party shall submit to the other an annual invoice for O&M costs incurred for the Jointly Used Facilities for which the invoicing party is responsible. Such invoices shall be submitted by each party to the other within 30 days of the end of the calendar year and payment shall be due within sixty (60) days of invoice.

Section IX. Emergency Repairs.

Each party shall have the right and obligation to respond to emergencies in the Jointly Used Facilities and make emergency repairs as needed. The party making said repairs shall notify the other party of the nature of the emergency, repairs planned or underway and the projected cost as soon as possible after learning of the emergency, preferably within the first 24 hours, but in no case later than 72 hours. A written report detailing the aforesaid matters shall accompany the invoicing. The cost for emergency repairs to the Jointly Used Facilities shall be shared by YBSA and LMT as capital improvement expenses in accordance with Section VII. Payment shall not be unreasonably withheld, and in no event shall be made in excess of one hundred eighty (180) days following invoice.

Section X. Collection Facilities.

The design, location, and area of service of each party's Collection Facilities shall remain and be wholly within its own discretion and control. Each party agrees that it will operate its Collection Facilities continuously in compliance with all present or future laws and governmental regulations, will maintain the same in a good state of repair, and will make all renewals, replacements and ordinary improvements necessary to maintain adequate service.

Section XI. Periodic Review of Capacity Allocations.

1. The parties shall conduct a review of the Capacity Allocations every five years from the date of execution of this Agreement, or earlier, if the parties shall mutually agree or if either party exceeds its Capacity Allocation set forth in Exhibit B. The Capacity Allocation review shall include a joint review conducted by the parties' Consulting Engineers. In the event that it is determined that an upgrade to any portion of the Jointly Used Facilities is required to provide either party with additional capacity in excess of the party's capacity allocation provided herein, the following shall apply: if both parties benefit from the proposed upgrade, the cost thereof shall be shared on a proportionate basis. If the proposed upgrade is desired or required by one party and the project does not reasonably benefit the other party, the party desiring or requiring such upgrade shall be solely responsible for all costs and construction associated with the upgrade to Jointly Used Facilities.

2. If either party desires to acquire additional capacity in a Jointly Used Facility with no need for additional improvements, the requesting party shall reimburse the other party for the proportional costs incurred by that party, in accordance with this Agreement.

3. In the event that additional capacity is purchased by either party resulting in a capacity reallocation between the parties, Exhibit "B" hereto shall be adjusted accordingly.

Section XII. Access to Jointly Used Facilities and Records.

Each party agrees that representatives of the other party shall have access to the Jointly Used Facilities and records and accounts relative thereto at reasonable times.

Section XIII. Enforcement.

The parties hereto recognize that the provisions of this Agreement could lead to disputes or controversies ("Dispute") which would require expedited resolution. Therefore, the parties have agreed that any Dispute which arises out of, or relating to this Agreement, or the breach thereof, may be resolved in either the court of Common Pleas of Bucks County, Pennsylvania ("**Court**") or by arbitration ("**Arbitration**") administered by the American Arbitration Association ("**AAA**"). The party who institutes the action to resolve the Dispute ("**Action**") shall have the right to determine the forum in which the Dispute is to be adjudicated. If the party who institutes the Action elects to institute the Action in the Court, such party may seek relief in equity, in addition to costs, legal and engineering fees.

If the party who institutes the Action elects to have the Dispute resolved by Arbitration, the Arbitration shall be

administered by the AAA under its Commercial Arbitration Rules and judgment on the award rendered by the arbitrator may be entered in any court having jurisdiction thereof. If the party who institutes the Action elects Arbitration, the following shall apply:

(a) There shall be one arbitrator.

(b) The Arbitration shall take place at a location in Bucks County, Pennsylvania to be designated by the arbitrator.

(c) Time is of the essence in resolving the Dispute. Therefore, Arbitration hearings shall take place within thirty (30) days of the filing of the demand for Arbitration and the award of the arbitrator shall be issued within one hundred twenty (120) days of the filing of the demand for Arbitration. The arbitrator shall agree to these time limits prior to accepting appointment.

(d) The arbitrator shall award to the prevailing party, if any, as determined by the arbitrator, all of its costs and fees. "Costs and fees" mean all reasonable pre-award expenses of the Arbitration, including the arbitrators' fees, administrative fees, travel expenses, out of pocket expenses such as copying and telephone, court costs, witness fees and reasonable attorneys' fees.

(e) The award of the arbitrator shall including findings of fact and conclusions of law.

(f) Either party to the Arbitration may appeal the award of the arbitrator by filing the appropriate appeal in the Court or

such other appropriate court. In such appeal, the appellant shall have the right to have the court review the record, other appropriate documents, the procedures employed by the arbitrator during the Arbitration, evidentiary, substantive and legal rulings made by the arbitrator during and after the conclusion of the Arbitration. If the Court determines that the arbitrator abused his discretion and/or committed an error of law the Court shall have the power to vacate the award, modify the award, or remand the proceeding to the arbitrator for further action as directed by the Court.

Section XIV. Waiver of Rights.

The failure of any party hereto to insist upon strict performance of this Agreement or any of the terms or conditions hereof shall not be construed as a waiver of any of its rights hereunder.

Section XV. Integration.

This Agreement contains and constitutes the entire agreement between the parties; there are no agreements, representations, warranties, oral or written, in existence which are separate apart from this Agreement. In the event that any term of this Agreement conflicts with any other Agreement to which YBSA and LMT are parties, the terms of this Agreement shall control. This Agreement

may be modified, supplemented, or amended only by a written agreement signed by all parties hereto.

Section XVI. Severability.

Should any one or more of the provisions of this Agreement for any reason be held invalid or illegal, such invalidity or illegality shall not affect any other provision of this Agreement; and this Agreement shall in all circumstances be construed and enforced as if such invalid or illegal provision had not been contained herein.

Section XVII. Term of Agreement.

The term of this Agreement shall be perpetual.

Section XVIII. Counterparts to be Effective.

This Agreement may be executed in counterparts, each of which shall be deemed an original, and be effective as an original, but all of which together shall constitute but one in the same instrument.

Section XIX. Applicable Law and Binding Effect.

This Agreement shall be construed and enforced in accordance with the laws of the Commonwealth of Pennsylvania, and it shall be binding upon the successors and assigns of the parties hereto.

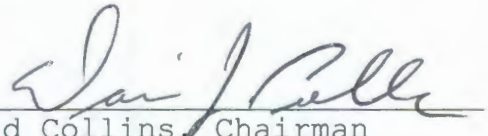
IN WITNESS WHEREOF, the parties hereto have caused the due execution and attestation hereof by their respective duly authorized officers the day and year first above written.

**YARDLEY BOROUGH SEWER
AUTHORITY**

Attest:



BY:



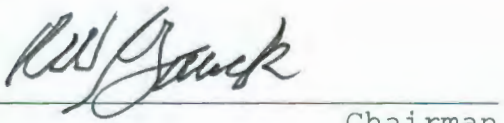
David Collins, Chairman
of the Board of Directors

**MUNICIPAL SEWER AUTHORITY
OF THE TOWNSHIP OF LOWER
MAKEFIELD**

Attest:



BY:



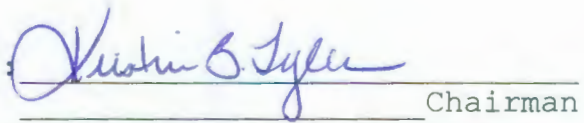
Chairman
of the Board of Directors

LOWER MAKEFIELD TOWNSHIP

Attest:



BY:



Chairman
of the Board of Supervisors



**EXHIBIT A (SHEET 1 OF 2)
JOINTLY USED FACILITIES**
SEWAGE TRANSPORTATION AGREEMENT
AMONG LMSA, LMT, YBSA

 **GILMORE & ASSOCIATES, INC.**
ENGINEERING & CONSULTING SERVICES
63 E. BUTLER AVE. SUITE 100, NEW BRITAIN, PA 18901-5106 - (215) 345-4330
www.gilmore-assoc.com

JOB NO: 1001149 DATE: AUGUST 12, 2015 0 250 500 1,000 FT

Legend

- ⊙ Meter Chamber
- ⊠ Discharge Point
- Manhole
- ☐ Pump Station
- Gravity Sewer
- - - Force Main
- ⋯ Existing Jointly Used Facility (JUF)
- Sewer By/Pass (JUF to be Constructed)
- Sewer Replacement (JUF to be Constructed)
- ▭ Municipal Boundary
- ▭ Parcel
- Hydrology
- ▭ Yardley Boro Residents To Be Served By LMTSA Sewer





**EXHIBIT A (SHEET 2 OF 2)
JOINTLY USED FACILITIES**
SEWAGE TRANSPORTATION AGREEMENT
AMONG LMSA, LMT, YBSA



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DATE: AUGUST 12, 2015



- Legend**
- ⊙ Meter Chamber
 - ⊠ Discharge Point
 - Manhole
 - ⊞ Pump Station
 - Gravy Sewer
 - - - Force Main
 - ▭ Parcels
 - Hydrology
 - Existing Jointly Used Facility (JUF)
 - ▭ Municipal Boundary



END OF
YARDLEY PS
FORCE MAIN

LOWER MAKEFIELD
TOWNSHIP

CANAL
INTERCEPTOR

DPM
FERRY ROAD
METERING CHAMBER

CANAL
INTERCEPTOR

FALLS
TOWNSHIP

MORRISVILLE
BOROUGH

DELMORR
INTERCEPTOR

METER CHAMBER
D-1

TO MORRISVILLE WWTP

FALLS
TOWNSHIP



EXHIBIT B

SEWER CAPACITY ALLOCATIONS and CAPITAL COST SHARES

Lower Makefield Township (LMT) and Yardley Borough

Last Revised: August 12, 2015

SEWER CAPACITY ALLOCATIONS

AT CONNECTION/METERING POINTS

Item	Description	Existing and Projected Flows				Capacity Allocations			Reference Meter(s)
		2010-14 Avg Daily Flows (mgd) ³	20 Yr. Projected Connxns (EDU) ⁴	20 Yr Projected Connxns (gpd) ⁵	20 Year Flow Projection (mgd)	Annual Max. Capacity (mgd) ⁶	3-Month Max. Capacity (mgd) ⁷	Daily Max. Capacity (mgd) ⁸	
DP #1	North Main Street Collector	0.049	240	76,800	0.126	0.132	0.264	0.479	DP #1
DP #2 ¹	River Road Collector	0.007	8	2,560	0.010	0.010	0.020	0.036	DP #2
DP #3 ²	Buck Creek Interceptor	0.548	130	41,600	0.590	0.619	1.238	2.247	DP #3
DP #4	Sandy Run/Brock Creek Interceptor	0.210	130	41,600	0.252	0.265	0.529	0.960	DP #4
DP #5	Yardley Crossing Apartments Collector	0.046	0	0	0.046	0.049	0.097	0.177	DP #5
North End	LMT Flows Connected to DP #1-5	0.861	508	162,560	1.023	1.075	2.149	3.901	DP #1-5
Yardley	Yardley Net Flows Metered at Pump Station	0.364	314	100,480	0.465	0.488	0.976	1.771	PS - North End
PS & FM	Yardley Pump Station & Force Main Total	1.225	822	263,040	1.488	1.562	3.125	5.672	Yardley PS
South End ⁹	LMT Flows Connected Directly to Canal Int.	1.764	19	6,080	1.770	1.858	3.716	6.745	Ferry Rd - PS
Canal Int.	Canal Interceptor Total Metered Flows (DP #6)	2.989	841	269,120	3.258	3.421	6.841	12.416	Ferry Road
Morrisville Int. Canal & Delmorr Int. - Ferry Rd to MMA Plant		2.989	841	269,120	3.258	3.421	6.841	12.416	Ferry Road

Notes:

¹ Formerly DP (Discharge Point) #1A

² Formerly DP #2 and DP #3

³ 2010-14 Flow Data from 2014 LMT and Yardley Chapter 94 Reports

⁴ Projected Connection figures provided by respective municipalities

⁵ Flows projected at 320 gpd/EDU as per LMT and Yardley Chapter 94 Reports

⁶ Annual Max. Capacity equal to 20 Year Flow Projection plus 5% factor for minor annual variation.

⁷ 3-Month Max. Capacity equal to Annual Max. Capacity times 2.0 peaking factor.

⁸ Daily Max. Capacity equal to Annual Max. Capacity times 3.63 peaking factor (based on historic peak flow data).

⁹ Average Daily Flows include only 2013-14 Flow Data from 2014 Chapter 94 Reports (no 2010-2012 data available)

CAPITAL COST SHARES

FOR JOINT USE FACILITIES

Facility	Description	Annual Max. Capacity (mgd)	LMT Flow Share (mgd)	LMT Flow Share (percent) ¹⁰	LMT Cost Share (percent)	Yardley Flow Share (mgd)	Yardley Flow Share (percent)	Yardley Cost Share (percent)
1	Yardley Gravity Sewers				84.39%			15.61%
	Upper End: DP #1-5	1.075	1.075	100.00%		0.000	0.00%	
	Lower End: Yardley Pump Station	1.562	1.075	68.77%		0.488	31.23%	
2	Yardley Pump Station and Force Main				68.77%			31.23%
	Upper End: Yardley Pump Station	1.562	1.075	68.77%		0.488	31.23%	
	Lower End: FM Discharge at Black Rock Rd	1.562	1.075	68.77%		0.488	31.23%	
3	Canal Interceptor				77.25%			22.75%
	Upper End: Manhole at Black Rock Rd	1.562	1.075	68.77%		0.488	31.23%	
	Lower End: Ferry Road Meter Chamber	3.421	2.933	85.74%		0.488	14.26%	
4	Morrisville Interceptor				85.74%			14.26%
	Upper End: Ferry Road Meter Chamber	3.421	2.933	85.74%		0.488	14.26%	
	Lower End: MMA DI-1 Meter Chamber	3.421	2.933	85.74%		0.488	14.26%	

Notes:

¹⁰ Cost Share equal to average flow share between upper and lower ends of Joint Use Facility



OPINION OF PROBABLE PROJECT COST

Last Revised: August 12, 2015

BROCK CREEK REPLACEMENT

Item	Description	Unit	Quantity	Unit Cost	Total Amount
1	15" PVC Sewer (w/ Bypass)	LF	1,700	\$285.00	\$484,500.00
2	4' Dia. Precast Manholes	EA	8	\$4,800.00	\$38,400.00
3	Stream Crossing	EA	1	\$7,500.00	\$7,500.00
4	Service Connections	EA	10	\$1,000.00	\$10,000.00
5	Temporary Pavement Restoration	SY	14	\$20.00	\$280.00
6	Permanent Pavement Restoration	SY	20	\$65.00	\$1,300.00
7	Easement Restoration	LF	1,650	\$5.00	\$8,250.00
8	Connect to Existing	EA	2	\$4,000.00	\$8,000.00
Construction Subtotal:					\$558,230.00
	Mobilization, Insurance, Bonds (5%)	LS	1	5%	\$27,911.50
	Engineering, Legal, Administrative (11%)	LS	1	11%	\$61,405.30
	Construction Administration (7%)	LS	1	7%	\$39,076.10
	Easement Acquisition	LS	1		\$30,000.00
	Construction Contingency (20%)	LS	1	20%	\$111,646.00
Grand Total:					\$828,268.90
BUDGET COST OPINION:					\$830,000.00



OPINION OF PROBABLE PROJECT COST

Last Revised: August 12, 2015

BUCK CREEK BYPASS

Item	Description	Unit	Quantity	Unit Cost	Total Amount
1	15" PVC Sewer	LF	2,000	\$150.00	\$300,000.00
2	15" DIP Sewer	LF	1,850	\$200.00	\$370,000.00
3	4' Dia. Precast Manholes	EA	18	\$4,800.00	\$86,400.00
4	Stream Crossing	EA	2	\$15,000.00	\$30,000.00
5	Canal Crossing - Jack & Bore	LS	1	\$300,000.00	\$300,000.00
6	Temporary Pavement Restoration	SY	725	\$20.00	\$14,500.00
7	Permanent Pavement Restoration	SY	1,000	\$65.00	\$65,000.00
8	Easement Restoration	LF	2,450	\$5.00	\$12,250.00
9	Connect to Existing	EA	2	\$4,000.00	\$8,000.00
	Construction Subtotal:				\$1,186,150.00
	Mobilization, Insurance, Bonds (5%)	LS	1	5%	\$59,307.50
	Engineering, Legal, Administrative (11%)	LS	1	11%	\$130,476.50
	Construction Administration (7%)	LS	1	7%	\$83,030.50
	Easement Acquisition	LS	1		\$60,000.00
	Construction Contingency (20%)	LS	1	20%	\$237,230.00
	Grand Total:				\$1,756,194.50
				BUDGET COST OPINION:	\$1,800,000.00



OPINION OF PROBABLE PROJECT COST

Last Revised: August 12, 2015

LONGSHORE BYPASS

Item	Description	Unit	Quantity	Unit Cost	Total Amount
1	8" DIP	LF	579	\$140.00	\$81,060.00
2	4' Dia. Precast Manholes	EA	5	\$4,800.00	\$24,000.00
3	Temporary Pavement Restoration	SY	322	\$20.00	\$6,440.00
4	Permanent Pavement Restoration	SY	1,544	\$65.00	\$100,360.00
5	Service Connections	EA	2	\$1,000.00	\$2,000.00
6	Connect to Existing	EA	2	\$4,000.00	\$8,000.00
Construction Subtotal:					\$221,860.00
	Mobilization, Insurance, Bonds (5%)	LS	1	5%	\$11,093.00
	Engineering, Legal, Administrative (11%)	LS	1	11%	\$24,404.60
	Construction Administration (7%)	LS	1	7%	\$15,530.20
	Easement Acquisition	LS	1		\$10,000.00
	Construction Contingency (20%)	LS	1	20%	\$44,372.00
Grand Total:					\$327,259.80
BUDGET COST OPINION:					\$330,000.00