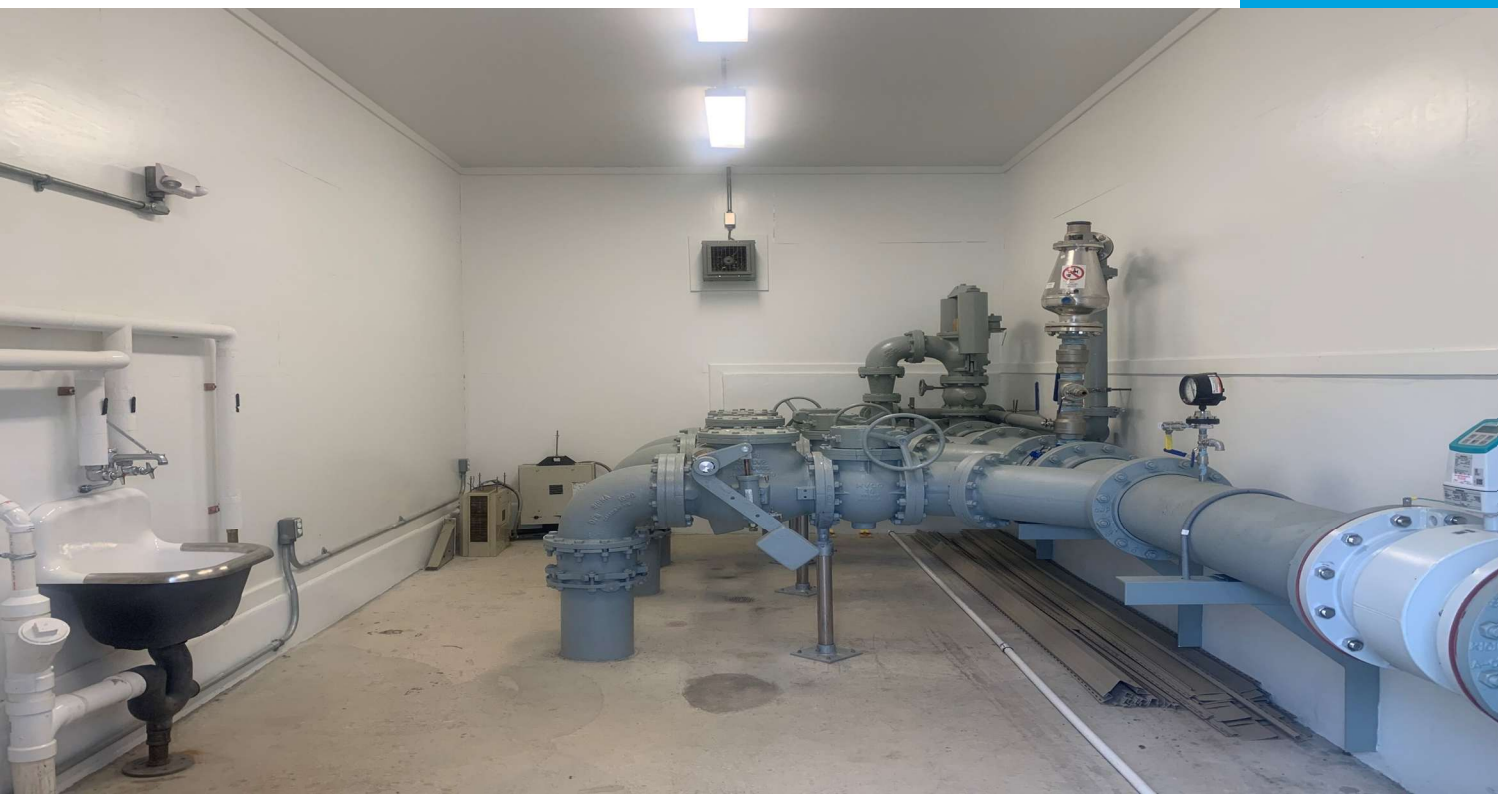
TOWN OF LONDONDERRY, NEW HAMPSHIRE

Master Plan

NOVEMBER 2024

WASTEWATER FACILITIES PLAN UPDATE



WRIGHT-PIERCE
Engineering a Better Environment

WASTEWATER FACILITIES PLAN UPDATE
TOWN OF LONDONDERRY, NEW HAMPSHIRE

November 2024

Prepared By:

Wright-Pierce
230 Commerce Way, Suite 302
Portsmouth, NH 03801
603.430.3728 | wright-pierce.com

Table of Contents

List of Appendices

List of Tables

Executive Summary

BACKGROUND

The Town of Londonderry (Town) has experienced significant growth in the past 40 years and continues to grow resulting in increased demands for sewer service. A Wastewater Facilities Plan was last updated for the Town in 2005, and since that time the Town's Comprehensive Master Plan was updated in 2013. It is time to update the Wastewater Facilities Plan to reflect changes since 2005 and to evaluate existing and future wastewater collection and treatment needs. The purpose of this Wastewater Facilities Plan Update is to determine the Town's future wastewater needs and define capital improvements expected to be necessary to support growth outlined in the Town's current Master Plan.

EXISTING CONDITIONS

Collection and Pumping Facilities

The Town is served by two separate Town-owned collection and interceptor sewer systems, the North Londonderry Sewer System and the South Londonderry Sewer System. The existing systems are discussed in more detail in Section 2 of the report and a map of the existing sewers is presented as Map A in Appendix A.

The north portion of the sewer system is the larger of the two and currently serves an area leading from the schools and Municipal Facilities on Mammoth Road, draining to the north through residential, commercial and industrial areas. Wastewater collected in this system ultimately drains to the Manchester Wastewater Treatment Facility (WWTF). There are three town-owned pump stations in the north system; the Plaza 28 Pump Station which has been in operation since 1986 and was completely replaced with a newly constructed pump station and force main in 2019: the Mammoth Road Pump Station, which was constructed in 2002: and the Webb Drive Pump Station which was constructed in 2017. The flow from North Londonderry to Manchester is measured at the Londonderry Metering Station (LMS). There is also a separate sewer system in the northwest portion of Town serving the Mill Pond development that the Town took over ownership of in 2023. Wastewater from this development enters Manchester in the vicinity of Bodwell Road and flows to Manchester without passing through any other portions of the Town's collection system.

There are three town-owned pump stations in the south system. A portion of the south collection system serves an area along Route 102 just west of I-93, and the Gilcreast Road area. This sewer flows to the Charleston Avenue Pump Station, which pumps flow to the Derry Wastewater Treatment Facility. The Charleston Avenue Pump Station has been in operation since 1995 and has been extensively upgraded in 2021 through 2023. Another portion of the south collection system serves an area further to the west of I-93 along Nevins Drive, Constitution Drive, and Orchard View Drive. This sewer flows to the Tokanel Drive Pump Station, built in 2005, which pumps flow to the Charleston Avenue Pump Station. A third portion of the south collection system serves an area east of I-93, along Londonderry Road and Action Boulevard. The sewer from this area is pumped from the Action Boulevard Pump Station, originally built in the 1980's and completely replaced with a newly constructed pump station in 2008, to the Derry Wastewater Treatment Facility.

Treatment Facilities

The Town of Londonderry has entered into Intermunicipal Agreements with the City of Manchester and the Town of Derry for treatment of wastewater generated in Londonderry. The current limits on wastewater flows and loads are summarized below.

Manchester:

- Average Daily Flow: 4.0 million gallons per day (mgd)
- Biochemical Oxygen Demand (BOD): 9,571 pounds per day (lb/day)
- Total Suspended Solids (TSS): 9,340 lb/day

Derry:

- Average Daily Flow: 750,000 gallons per day (gpd)
- Average Biochemical Oxygen Demand (BOD): 300 mg/L
- Average Total Suspended Solids Demand (TSS): 370 mg/L

Current Flows and Loads

Monthly flow and loading data for flows to Manchester for recent past years were reviewed along with daily wastewater discharge records from Granite Ridge Energy (GRE – formerly AES), which, in any given month, can contribute over 50% of the total wastewater in Londonderry. To estimate current flows from GRE, an estimate of 0.858 mgd was used, which is the highest monthly average flow allowed by the discharge permit issued to GRE by the Town. Although GRE is allowed to discharge this quantity of flow for a month, its monthly averages to date have typically ranged from 0.19 mgd to 0.76 mgd. The following summarizes the current flows and loads to Manchester.

Manchester:

- Average Daily Flow: 2.23 mgd (including 0.86 mgd from GRE)
- BOD: Average 2,703 lb/day (highest month 4,634 lb/day
- TSS: Average 2,751 lb/day (highest month 6,366 lb/day)

A similar review of flow data was completed for the wastewater that is pumped to Derry. Although there is no BOD and TSS data available, the BOD and TSS loads were estimated based on assumed loading concentrations.

Derry:

- Average Daily Flow: 151,600 gpd
- BOD: 430 lb/day (estimated)
- TSS: 541 lb/day (estimated)

Non-sewered Areas

A majority of the developed area of Londonderry is not currently served by public sewer. These properties are served by privately owned on-lot septic systems consisting of a septic tank and a subsurface disposal field. Although the non-sewered areas include some commercial establishments, many of these areas are residential. According to the 2013 Master Plan, housing in Londonderry is a mix primarily consisting of homes built after 1980. The majority of the Town's existing neighborhoods consist of single-family homes on one to two acre lots. For neighborhoods with this type of density, on-lot septic systems provide a cost-effective means for wastewater disposal. The remaining housing units are in higher density developments consisting of single or multiple units in attached structures, such as condominiums and townhouses, or mobile home parks. Some of the higher density housing developments are not on Town sewer. Owners and/or representatives of some of these developments have

approached the Town to discuss the potential of connecting to Town sewer to solve ongoing problems with on-lot subsurface disposal systems. The possibility of providing Town sewer to some of these areas is discussed in Section 3 of the report.

Currently all the septage from Londonderry is disposed of at the Manchester Treatment Facility for treatment, which at this time has adequate capacity to treat the septage. According to records kept by the City of Manchester, Londonderry contributes approximately 4,500,000 gallons of septage each year.

PROJECTED FUTURE FLOWS AND LOADS

The Town of Londonderry completed an update of its Master Plan in 2013, which summarizes the Town's direction relative to future growth. To determine Londonderry's future wastewater needs, the Town's Master Plan was reviewed in meetings with the Town's Public Works and Planning departments. The planning period typically used for facilities planning is 20 years, although flow projections for identified growth areas in this plan were made based on complete build-out of each area. The rate of future development is difficult to predict, and growth may occur at different rates in different parts of Town. The projections of future wastewater flows and loads are summarized in Section 3 of the report. These areas consist of undeveloped lots in areas where Town sewer is already present, and areas within the vicinity of existing sewers where commercial, industrial, and high-density residential growth is projected to occur. These areas are identified by number or letter on Map B in Appendix A, and the same designations are used throughout this Facilities Plan. Many of these areas were identified in the 2005 Facilities Plan, and the number or letter designations used in 2005 are carried over into this update.

Section 3 of the report summarizes a description of each area, wastewater flow projections for each area, and conceptual sewering plans. The projected future flows and loads are summarized as follows:

Table ES-1 Future Average Daily Flows

Manchester	
Current non-GRE High Monthly Avg.	1,370,000 gpd
GRE Permit (Annual Avg.)	858,000 gpd
Projected Increase (ADF)	1,437,534 gpd
Future ADF	3,665,534 gpd (3.67 mgd)
Derry	
Current ADF	151,630 gpd
Projected Increase (ADF)	595,384 gpd
Future ADF	747,014 gpd

TABLE ES-1 (cont'd) AVAILABLE AVERAGE DAILY FLOWS

	Projected Average Daily Flow (mgd)	Permitted Average Daily Flow (mgd)
To Manchester	3.67	4.00
To Derry	0.747	0.750

Table ES-2 Future Wastewater Loads

	Annual Average (lb/day)
Manchester	
Current BOD	2,703
Projected Additional BOD	3,520
Total Future BOD	**6,223**
Current Limit:	9,571
Current TSS	2,751
Projected Additional TSS	4,431
Total Future TSS	**7,182**
Current Limit:	9,340
Derry	
Estimated Current BOD	430
Projected Additional BOD	1,455
Total Future BOD	**1,885**
Current Limit:	1,877[1]
Estimated Current TSS	541
Projected Additional TSS	1,832
Total Future TSS	**2,373**
Current Limit:	2,314[1]

[1] IMA with Derry lists only concentration limits for BOD (300 mg/l) and TSS (370 mg/l), so lb/day are based on these concentrations and a flow of 0.75 mgd

SEPTAGE

All the septage generated in Londonderry is currently disposed of at the Manchester Treatment Plant. Currently, Manchester does not limit the septage received from Londonderry. Personnel in Manchester were contacted to see if there are any concerns with future septage quantities from Londonderry, and they reported that there are no plans to limit future septage from Londonderry or any of the other area communities.

RECOMMENDED FACILITIES TO MEET FUTURE NEEDS

TREATMENT UPGRADES

Based on the flows and loads projections, summarized in Section 3 of the report, the Town has adequate capacity at the Manchester Treatment Facility. The current flow limit to Derry is 500,000 gpd. In 2023, the Town began discussions with Derry to increase Londonderry's flow limit by an additional 250,000 gpd to specifically serve the area around the new Exit 4A, described as Area 18 – Woodmont East in this Facilities Plan. This plan assumes that this amendment will be executed, bringing the total Londonderry flow limit for discharge to Derry to 750,000 gpd. Some of the projected flows in the South Londonderry area will need to be directed to the North Londonderry collection system for treatment in Manchester to keep future flows to Derry under the 750,000 gpd limit.

EXISTING PUMP STATION UPGRADES

Based on the flows and loads projections, summarized in Section 3 of the report, the existing six Town owned pump stations currently have sufficient capacity to transport the projected flows. Other than regular monitoring, maintenance, and repair efforts, as outlined in the Town's State and Federally monitored Capacity, Management, Operation and Maintenance (CMOM) program, no capacity related upgrades are anticipated.

EXISTING INTERCEPTORS

Based on the flows and loads projections, summarized in Section 3 of the report, the majority of the existing Town owned interceptors currently have sufficient capacity to transport the projected flows. Other than regular monitoring, cleaning, maintenance, and repair efforts, as outlined in the Town's State and Federally monitored Capacity, Management, Operation and Maintenance (CMOM) program, no capacity related upgrades are anticipated. There are several existing interceptors that will require Town monitoring as specific development occurs, to determine if, and when, upgrades to accommodate projected increased flow capacity may be required. The Town anticipates that the cost of necessary upgrades in these situations would be the responsibility of the developer.

NEW SEWER FACILITIES TO SERVE GROWTH AREAS

Section 4 of the report continues discussion on the growth areas identified in Section 3 of the report that were described with general information on how the areas would be served by sewer. For some of the areas, sewer facilities are already in place to serve the undeveloped land. Where sewer extensions are required to serve the development area, it is assumed that in most cases the developer will be responsible to install the required sewer facilities meeting the Town sewer standards. However, the Town may participate in the funding of some of the sewer interceptor extensions to promote commercial and industrial development consistent with the Town's Master Plan. Areas where the Town may participate in the funding are summarized below.

Pettengill Road Commerce Park – Area 15

To service the remaining area of the Commerce Park area, it is estimated that an additional 3,800 LF of gravity interceptor sewer would be necessary. The total estimated cost for these interceptor facilities is $1,540,000. The

Town may participate in the funding for these sewer interceptor facilities as part of the development in this commerce park, consistent with the Master Plan. This cost is included in the access fee calculation. This cost estimate does not include sewer within the potential remaining development area.

Century Village – Area A

An extension of the South Londonderry Interceptor currently serving Area B could serve this development. Although the owners of the development would be responsible for the construction of sewer facilities on private property, the Town may participate in the funding of the interceptor sewer to be constructed in Town rights-of-way. The estimated cost to extend the interceptor 3,700 LF within Area A is $2,000,000. This cost is included in the access fee calculation.

Woodmont Common East – Area 18

To connect Area 18 to the South Londonderry sewer system, it appears possible to extend the existing interceptor sewer on Londonderry Road to serve Area 18 from its southwest corner. It is estimated that an extension of approximately 1,400 LF of 12-inch pipe within the Town's rights-of-way would be needed to reach the property of Area 18. The estimated cost for this sewer extension is $851,000. The existing Londonderry Road interceptor, to which this new sewer would discharge to, is one of the exceptions noted in the "EXISTING INTERCEPTORS" section listed above. The estimated cost for the required capacity upgrades is estimated to be $1,374,000 Based on previous agreements, the developer would pay for the sewer extension in the Town rights-of-way and the required upgrades to the Londonderry Road Interceptor and receive credit for those costs when being assessed access fees within the development. The estimated cost for the extension and these upgrades are not included in the access fee calculations.

Woodmont Common West– Area 18B

A portion of Area 18B is already developed and being served by the existing Town sewer in Michels Way to Gilcreast Road. The total projected flow from the anticipated full development of Area 18B exceeds the capacity of both the existing gravity sewer that flows to Derry, as well as the capacity available at the Derry WWTF for this section of Londonderry. The majority of the additional flow that can be connected to the existing gravity sewer that flows to Derry has been identified and allocated to proposed and ongoing development.

To serve the remainder of Area 18B, the flow will need to be pumped to the North Londonderry collection system for treatment in Manchester. To transport the flows to North Londonderry, a pump station is required on Pillsbury Road in Area 18B with a force main along Pillsbury Road and Hardy Road to a new extension of gravity sewer on Bancroft Road, connecting to the existing 15-inch sewer on Bancroft Road. The route to this connection point could include approximately 7,500 LF of 10-inch to 12-inch force main and approximately 1,850 LF of 12-inch or 15-inch gravity sewer.

The pump station on Pillsbury Road in Area 18B and the force main and gravity sewer to Bancroft Road is estimated to cost $7,900,000. The Town has initiated design of the pump station, force main and interceptor sewer. The Town and Developer are working toward a plan for funding the construction of the facilities, and the Town is scheduled to receive Federal funds in the amount of $4 million for a portion of the project. The Town and Developer are working toward a plan for funding the remaining $3,900,000, beyond the federal grant. The Town plans to take ownership of this pump station, force main and gravity sewer needed to connect to the Town's existing sewer system on Bancroft Road. This cost is included in the access fee calculation. The Developer would be responsible for the cost to construct the sewer collection system within the development upstream of the pump station on Pillsbury Road, which would

remain private after construction and the Town would not participate in the funding of these facilities. The developer currently plans to construct a private pump station to eventually redirect a portion of the flow entering the gravity sewer that flows to Derry to the above described Town owned pump station on Pillsbury Road. The developer intends to reallocate the wastewater capacity recovered as a result of the redirection to accommodate additional development in the vicinity of the existing gravity sewer that flows to Derry. This private pump station and associated force main would remain private after construction and the Town would not participate in the funding of these facilities.

The total cost of these new sewer facilities (Interceptors) to serve growth areas 15 ($1,540,000), A ($2,000,000), and 18B ($3,900,000) is $7,440,000.

SEPTAGE DISPOSAL

Currently, Manchester (City) does not limit the septage received from Londonderry or the other communities it serves. The City has no current plans to restrict septage from Londonderry, but if it must impose limits, it will not restrict below a quantity of 225,000 gallons/month. The cost for septage disposal is paid for by the property owner to their septage hauler, which is typical for most communities. It is recommended that this practice continue.

FUNDING OF RECOMMENDED FACILITIES

A summary of estimated costs for recommended facilities described in Section 5 of the report includes:

- Total cost of these new sewer facilities (interceptors) to serve growth areas: - $7,440,000
- Total cost of Town's share of Manchester WWTF upgrade costs: - $10,000,000
- Total cost of sewer capacity purchases from Derry WWTF – $2,101,000

SEWER ACCESS FEE DETERMINATION:

Table 5-1 of the report and also appearing on the following page of this document, summarizes the costs for the wastewater facilities identified in this plan, as shown above. The right most column in the table indicates the projected sanitary flows for each growth area to be served.

Areas A, B, and C consist mostly of existing residential and commercial users, which would fall under the existing units category of the current access fee schedule. A separate calculation is made for potential revenue from those users under the current fee schedule. This calculation procedure is shown in Table 5-2 of the report and also appears in this document immediately after Table ES-5-1. Exceptions include areas in B and C with new proposed development and some vacant land that would likely develop once sewer is installed. We have assumed that 25% of the projected commercial flow in Areas B and C will be new units and 75% would fall under existing units, and that all the projected residential flow would fall under existing units.

Table ES-3 Access Fee Calculations

Treatment Related Costs		Town Participation	
	Manchester WWTF Upgrades	$10,000,000	
	Cost to buy from 275,000 to 750,000 gpd in Derry	$2,101,000	
	Subtotal	$12,101,000	
Growth Areas		**Potential Town Participation**	**Proposed ADF (gpd) excluding I/I**
Area 1	Sanborn Road	$0	45,780
Area 3	Mill Pond #2	$0	265,650
Area 3A	Mill Pond #3	$0	12,490
Area 5	Page Road	$0	63,693
Area 6	Stonehenge Road	$0	5,040
Area 8	Hillside Drive	$0	13,300
Area 9	Jack's Bridge Road	$0	60,247
Area 10	Planeview Drive	$0	13,300
Area 11	Delta Drive	$0	4,200
Area 12	Aviation Park Drive	$0	51,300
Area 13	Webster Road	$0	70,000
Area 14	Akira Way	$0	7,700
Area 15	Pettengill Road Commerce Park	$1,540,000	173,100
Area 17	Vista Ridge Drive	$0	31,290
Area 18	Woodmont East	$0	220,000
Area 18B	Woodmont West	$3,900,000	362,969
Area 19	Hannaford Plaza	$0	38,430
Area 20	Mammoth Road North Extension	$0	9,800
Area 20A	Grenier Field Road	$0	9,030
Area 20B	Mammoth Rd and Page Rd	$0	8,400

Growth Areas		Potential Town Participation	Proposed ADF (gpd) excluding I/I
Area 21	Wentworth Avenue	$0	7,700
Area 22	Lorden Commons	$0	17,430
Area 23	Wallace Farms, Phase 1	$0	13,524
Area 23A	Wallace Farms, Phase 2	$0	4,200
Area A	Century Village	$2,000,000	0
Area B	South Londonderry Interceptor North of Route 102	$0	12,250
Area C	Portion to Derry Only	$0	2,800
Area F	Town Rec. Village and Center Common[1]	$0	0
Area H	North Village Artisan District	$0	26,000
	Subtotal	$7,440,000	1,549,600
	Total	$19,541,000	
	Less Est. Revenue from Existing Units in Areas A, B, and C	$571,700	
Remaining		$18,969,300	

1 Assumes new residential flows in Area F will not be realized in the next 10 years.

Table ES-4 Estimated Revenue from Existing Units

		Residential		Commercial		
Growth Area		No. of Residential Units	Access Fee Unit Cost	Commercial Flow (gpd)	Access Fee Unit Cost	Access Fee
Area A	Century Village	344	$500	0	$8	$172,000
Area B	South Londonderry Interceptor North of Route 102	58	$500	36,750	$8	$323,000
Area C	Portion to Derry Only	19	$500	8,400	$8	$76,700
					Total from Existing Units	$571,700

Table ES-5 Access Fee Calculation

Total Estimated Capital Costs with Town's Participation	$18,969,300
Projected increase in Sanitary Flow excluding I/I (gpd)	1,549,600
Access Fee - Cost per Gallon	$12.24
Access Fee for Typical House Based on 210 gpd per Residential Unit	$2,571

This calculation includes recovering the costs for the facilities that may be paid for with Town's participation through the access fee, consistent with the rationale for the establishment of the access fee in 2007. This calculation takes into consideration that existing units in Areas A, B, and C would pay under the Existing Unit category in the current access fee schedule. The newly calculated Access Fee rate compares favorably with the Access Fee rate of $16.51 per gallon and $3,467 per residential unit presented in the 2005 Wastewater Facilities Plan and currently in use. It is recommended that the Town review the recommendations and calculations in this Wastewater Facilities Plan Update along with the Town's Master Plan, and the progress in development that has occurred since 2005 to determine if the proposed revised access fee would best promote the intentions of the Master Plan and be acceptable to sewer users and taxpayers in Town.

Section 1 Introduction

1.1 General

The Town of Londonderry (Town) has experienced significant growth in the past 40 years and continues to grow resulting in increased demands for sewer service. A Wastewater Facilities Plan was last updated for the Town in 2005, and since that time the Town's Comprehensive Master Plan was updated in 2013. It is time to update the Wastewater Facilities Plan to reflect changes since 2005 and to evaluate existing and future wastewater collection and treatment needs. The purpose of this Wastewater Facilities Plan Update is to determine the Town's future wastewater needs and define capital improvements expected to be necessary to support growth outlined in the Town's current Master Plan.

The Town has two main collection and interceptor sewer systems, the North Londonderry Sewer System and the South Londonderry Sewer System. A map of the existing collection system is provided in **Appendix A**. The North System is larger and currently serves an area leading from the schools and municipal facilities on Mammoth Road, draining to the north through residential, commercial and industrial areas. Wastewater collected in this system is ultimately conveyed to the Manchester Wastewater Treatment Facility (WWTF).

The South System serves an area along Route 102 just west of I-93, and the Gilcreast Road area. This sewer flows to the Charleston Avenue Pump Station, which pumps flow to the Derry WWTF. Another portion of the southern collection system serves an area east of I-93, along Londonderry Road and Action Boulevard. This wastewater is pumped from the Action Boulevard Pump Station to the Derry WWTF.

The Town recently took over ownership of a privately owned sewer system serving the Mill Pond development in the northeast portion of town. Wastewater from this area also flows to Manchester without passing through any other portions of the Town's collection system. The Town is currently considering taking over an additional privately owned sewer system in the north portion of Town located on Jack's bridge Road off of Rockingham Road. There are also several private sewer systems that connect to the Town's sewer collection system.

1.2 Scope of Work

The scope of this Wastewater Facilities Plan Update is summarized as follows:

- Review of the 2013 Town Comprehensive Master Plan relative to projected growth and sewer service;
- Meetings with Town's Department of Public Works and Engineering, and Planning departments to identify and evaluate requirements of the growth areas, specifically current proposed development and changes since the 2005 Facilities Plan was developed;
- Review updates to the Inter-municipal Agreements with Manchester and Derry;
- Review current flows and loads to Manchester and Derry;
- Update future flow and load projections to Manchester and Derry after assessing growth areas;
- Review viability of obtaining additional capacity at Manchester and Derry Treatment Facilities and estimate the cost to obtain that capacity;
- Review current septage quantities generated in town, and review the viability of continuing to bring septage to Manchester for treatment;
- Review pump station flow data to determine available capacity for growth at each station;
- Determine improvements needed to existing facilities to accommodate projected growth and estimate costs for the improvements;

- Identify sewer extensions which may be pursued by the Town to serve growth areas and estimate the cost of those extensions;
- Update cost tables and access fee calculations from the 2005 Facilities Plan;

Section 2 Existing Conditions

2.1 Planning Area

Although the entire Town of Londonderry has been taken into consideration for the Wastewater Facilities planning, the majority of the effort centers around the area currently served by the existing sewer system and the areas projected to be served by Town sewer, consistent with the Town's 2004 and 2013 Master Plan. Development in the areas outside the proposed sewer service area is assumed to be served by on-lot subsurface disposal systems.

The Town of Londonderry covers approximately 42 square miles, of which nearly 80% is either already developed or protected as open space. The population was 25,826 at the 2020 census, which is a 7% increase since the 2010 census. A Wastewater Facilities Plan was prepared in the late 1970's, updated in 2005, and there have been some changes to the Town since the 2005 update.

2.2 Existing Wastewater Collection and Transport Facilities

The Town is served by two separate municipally owned collection and interceptor sewer systems. A map of the existing sewer system is included as Map A in **Appendix A**. The two sewer systems are commonly referred to as the North Londonderry Sewer and South Londonderry Sewer systems. The North Londonderry Sewer system is the larger of the two and wastewater collected in this system flows to the Manchester Wastewater Treatment Facility for treatment and disposal. The South Londonderry system currently serves the area adjacent to Exit 4 of I-93 and the wastewater from this area is pumped to the Derry Wastewater Treatment Facility for treatment and disposal. The Town's sewer system is described in more detail below.

2.2.1 North Londonderry Sewer System

The North Londonderry sewer system includes interceptor and collector sewers, and three Town-owned pump stations. A combination of 8-inch collector sewers and a 12-inch interceptor runs from the Town Center just north of Pillsbury Road to the Mammoth Road Pump Station. This pump station pumps wastewater to a 15-inch interceptor that runs north, parallel to Mammoth Road to the Plaza 28 Pump Station. The Plaza 28 Pump Station also serves the area along Rockingham Road to the area of Exit 5 of I-93 via a 15-inch interceptor and the village area along Mammoth Road north of the pump station. The Plaza 28 Pump Station pumps to the gravity sewer system serving the mostly commercial/industrial area located in the northwest portion of Town, including the Airport. This area includes interceptor sewer piping ranging in size from 18-inch to 30-inch diameter, with the 30-inch interceptor connecting to the Manchester system at the municipal boundary. Part of the interceptor sewer in the airport area had been relocated and crosses under the expanded runway of the Manchester Airport. The Town entered into an agreement with Manchester whereby Manchester is responsible for maintenance of this section of the interceptor. The Webb Drive pump station serves a portion of the Pettengill Road Commerce Park and pumps to the Pettengill Road interceptor sewer that connects to the interceptor carrying flow to Manchester.

The wastewater flow to Manchester is measured at the Londonderry Metering Station (LMS) near the town boundary, with the flow data used as a basis of billing by the City of Manchester for treating Londonderry's wastewater.

There are other flows from Londonderry to Manchester accounted for in the billing from Manchester, such as the flow from Mill Pond Development, discussed below. However, the flow through the LMS accounts for approximately 98% of the Town flow to Manchester. There is also a small portion of the Manchester sewer system

that flows into Londonderry and is included in the flow measured by the LMS. However, Manchester measures this flow and subtracts it from the flow measured by the LMS for billing purposes.

The Town recently took over ownership of a privately owned sewer system serving the Mill Pond development in the northeast portion of town. Wastewater from this area also flows to Manchester without passing through any other portions of the Town's collection system. The Town is currently considering taking over an additional privately owned sewer system in the north portion of Town located on Jack's Bridge Road off of Rockingham Road. There are other private sewer systems, some with private pump stations, that discharge to the Londonderry sewer system and ultimately flow to Manchester.

2.2.1.1 Plaza 28 Pump Station

The original Plaza 28 Pump Station was constructed in 1986 near the intersection of Mammoth Road and Rockingham Road. A new pump station was constructed and put on-line in 2019 to replace the old station. The new station consists of a 10'x16' precast concrete wet well with three submersible pumps, and a building housing pump discharge piping and valves, an electromagnetic flow meter, pump controls, variable frequency drives (VFDs) and other electrical panels, and an emergency generator. Each pump is capable of pumping approximately 1,750 gallons per minute (gpm) when pumping alone and the pump station capacity, with two pumps running, is 2,900 gpm (4.17 MGD). The station pumps wastewater through a new 18-inch diameter high density polyethylene (HDPE) force main (inside diameter of 15.75-inches) which discharges to the 18-inch gravity sewer on Grenier Field Road. The total force main length is approximately 5,200 linear feet (LF) and the force main also was put on-line in 2019.

2.2.1.2 Mammoth Road Pump Station

The Mammoth Road Pump Station is located on a private drive off Mammoth Road south of Shasta Drive. The pump station was constructed and put on-line in 2002. The station includes an 8-foot diameter precast concrete wet well that contains two submersible wastewater pumps, each with a pumping capacity of 500 gpm (0.72 MGD). An 8-foot diameter precast concrete valve pit, located next to the wet well, contains the pump discharge piping and valves. Flow through the pump station is measured by an electromagnetic flow meter installed in a manhole downstream of the valve pit. The pump station building houses the pump controls, electrical panels, emergency generator, and a chemical feed system that can be used to help control odors in the wet well and force main. The pumps discharge through an 8-inch diameter ductile iron force main to a 15-inch gravity sewer in the Public Service of New Hampshire (PSNH) right-of-way just south of Bancroft Road. The total force main length is 4,100 LF.

2.2.1.3 Webb Drive Pump Station

The Webb Drive Pump Station is located on a dirt access road off of Webb Drive just south of 52 Pettengill Rd. The pump station is approximately 0.6 miles from the dirt road's intersection with Webb Dr. The pump station was constructed and put on line in 2017. The station includes a 10-foot diameter precast concrete wet well that contains two submersible wastewater pumps, each with a pumping capacity of 485 gpm (0.70MGD). An 8-foot diameter concrete valve pit, located next to the wet well, contains the pump discharge piping and valves. Flow through the pump station is measured by an electromagnetic flow meter installed in a manhole downstream of the valve pit. The pump station building houses the pump controls, electrical panels, emergency generator, and potable water well controller and storage tank. The pumps discharge through an 8-inch diameter ductile iron force main to a 12-inch PVC gravity sewer located on Webb Drive. The total force main length is 3,200 LF.

2.2.2 South Londonderry Sewer System

The South Londonderry sewer system includes collector and interceptor sewers serving the area near Exit 4, and three Town-owned pump stations. A short stretch of Route 102, west of I-93 and a portion of Gilcreast Road are served by a 10-inch and 12-inch diameter interceptor that carries flow to a 24-inch interceptor on Boston Avenue and ultimately to the Charleston Avenue Pump Station. The area east of I-93 is served by an interceptor pipe ranging in size from 10-inch to 12-inch running along Londonderry Road, across Route 102 and onto Action Boulevard to the Action Boulevard Pump Station. Both the Charleston Avenue and Action Boulevard pump stations pump wastewater across the Town line to the Derry WWTF. Data collected by flow meters at both stations are used as a basis for billing by the Town of Derry for treatment of Londonderry's wastewater. Tokanel Drive pump station serves the development located between Ross Drive and Route 102, and across Route 102 including the Appletree Mall. The Tokanel Drive Pump Station force main discharges to Charleston Pump Station.

2.2.2.1 Tokanel Drive Pump Station

The Tokanel Drive Pump Station is located at the west end of Tokanel Drive. The pump station was constructed and put on-line in 2005. The station is similar in design to the Mammoth Road Pump Station and includes a 10-foot diameter precast concrete wet well that contains two submersible wastewater pumps, each with a pumping capacity of 1,250 gpm (1.8 MGD). A 10-foot diameter precast concrete valve pit, located next to the wet well, contains the pump discharge piping and valves. Flow through the pump station is measured by an electromagnetic flow meter installed in a manhole downstream of the valve pit. The pump station building houses the pump controls, electrical panels, emergency generator, and a chemical feed system that can be used to help control odors in the wet well and force main. In 2022, the pump control panel at the station was replaced with a new panel and includes VFDs to operate the pumps. The VFDs are used to vary the pumping rate from approximately 1,000 gpm to 1,250 gpm. The pumps discharge through a 12-inch diameter ductile iron force main to the Charleston Avenue Pump Station. The total force main length is 5,500 LF.

2.2.2.2 Charleston Avenue Pump Station

The Charleston Avenue Pump Station has been in service since 1995 and is located on Charleston Avenue just south of Boston Avenue. The pump station includes a headworks area with a sewage grinder in the influent channel, and a bar rack in the bypass influent channel. The wastewater flows from the influent channel into a divided 10-foot by 24-foot wet well. The station contains two solids-handling vertical turbine pumps with variable-speed motors. Each pump discharges between approximately 600 gpm (0.9 MGD) to approximately 2,600 gpm (3.75 MGD). The upper level of the station contains the pump controls, pump discharge piping and valves, flow meter, electrical panels, and emergency generator. The pump station pumps through an 18-inch HDPE diameter force main, which passes under Route I-93, and discharges to a gravity sewer just upstream of the Derry Wastewater Treatment Facility. The force main length is approximately 2,840 LF.

2.2.2.3 Action Boulevard Pump Station

The Action Boulevard Pump Station is located at the south end of Action Boulevard. The original pump station was replaced in 2008 with a new submersible pump station similar to the Tokanel Drive and Mammoth Road pump stations. The station includes a 10-foot diameter precast concrete wet well that contains two submersible wastewater pumps, each with a pumping capacity of 675 gpm (1 MGD). An 8-foot diameter precast concrete valve pit, located next to the wet well, contains the pump discharge piping and valves. Flow through the pump station is measured by an electromagnetic flow meter installed in a manhole downstream of the valve pit. The pump station building houses the pump controls, electrical panels, and emergency generator. Starting at the new pump station,

approximately 525 LF of the existing 6-inch diameter force main was replaced with 8-inch HDPE pipe during the 2008 upgrade project. The total force main length is approximately 1,250 LF.

2.3 Wastewater Treatment Facilities

As discussed above, the Town of Londonderry does not have a wastewater treatment facility within the Town boundary. The wastewater generated in north Londonderry, collected in the North Londonderry Sewer System, is treated in Manchester. The wastewater from South Londonderry is treated in Derry. The Town of Londonderry has entered into Inter-Municipal Agreements with both Manchester and Derry, which are summarized below.

2.3.1 Inter-Municipal Agreement with Manchester

In 1979, the Town of Londonderry entered into an Inter-Municipal Agreement (IMA) with the City of Manchester for treatment of wastewater generated in Londonderry. The Agreement defined the limitation of flows, biological oxygen demand (BOD), and total suspended solids (TSS) that could be discharged to Manchester. Limitations of other pollutants were also established, as well as the basis of billing for treatment costs and capital expenditures at the Manchester plant.

The Inter-Municipal Agreement has been revised:

1. Amendment No. 2 in 1982 - which revised the flows and loads allocation to Londonderry;
2. Amendment No. 3 in 1998 - which allowed flow from a private sewer system in the northeast corner of Londonderry (Mill Pond Development) to connect to the Manchester sewer system; and
3. Revised January 1, 2013 – which increased the flows and loads allocation to Londonderry.

The current limits on flows, loads, and other important information from the Agreement and Amendments are summarized below:

- Limits (Based on monthly averages):
  - Average Daily Flow: 4.0 MGD (including infiltration)
  - BOD: 9,571 pounds per day (lb/day)
  - TSS: 9,340 lb/day
- The allocated flow of 4 MGD for Londonderry is 9.37% of the Maximum Month Design Flow of the Manchester WWTF (42.7 MGD).
- The IMA allows acceptance of wastewater flows from other areas of Londonderry beyond the identified service area, including flow from the Mill Pond Development, of up to 5% of the overall total limits listed above:
- Average Daily Flow: 200,000 gpd (5% of the total 4 MGD)
- Renewal terms: The 2013 IMA Agreement has a term of 20 years, after which the Agreement was to be automatically renewed every two years, unless either party elects to terminate the Agreement by providing written notice at least five years before expiration of the original term or any renewal period.
- Septage: As long as Manchester accepts septage without limitation from surrounding towns, it will accept septage without limitation from Londonderry. If Manchester must limit septage, then the quantity of septage from Londonderry, relative to the total quantity of septage received at the plant, shall be proportional to the flow, BOD and TSS allocations as listed above. However, the limit of septage shall not be lower than 225,000 gallons per month.

2.3.2 Inter-Municipal Agreement with Derry

In 1981, the Town of Londonderry entered into an IMA with the Town of Derry for treatment of wastewater generated in Londonderry. The Agreement was later revised in 1991. The Agreement defined the limitation of flows up to 200,000 gpd and biological oxygen demand (BOD) that could be discharged to Derry. Limitations of other pollutants were also established, as well as the basis of billing for treatment costs and capital expenditures at the Derry plant. The Agreement had a term of 15 years (from 1991), after which the Agreement was to be automatically renewed every five years, unless either party elected to terminate the Agreement by providing written notice at least one year before the expiration of the original term or any renewal period.

A new Inter-Municipal Agreement between Derry and Londonderry was signed in 2021. The 2021 IMA provides the following limits on wastewater from Londonderry:

- Average Daily Flow: 500,000 gallons/day
- Average BOD: 300 mg/l
- Average TSS: 370 mg/l

From the original IMA, Londonderry had obtained 200,000 gpd of capacity from Derry. The 2021 IMA defines how Londonderry will purchase the remaining 300,000 gpd of capacity. Starting in 2021, Londonderry will pay for an additional 25,000 gpd of capacity each year at Derry's prevailing wastewater accessibility fee for 12 years to meet the maximum allocation of 500,000 gpd. To date, three payments have been made for the years 2021, 2022, and 2023. If the average flow from Londonderry exceeds the current allocation in any given year, Londonderry will pay for the additional allocation based on actual average flow.

In 2023, the Town began discussions with Derry to increase Londonderry's flow limit by an additional 250,000 gpd to specifically serve the area around the new Exit 4A, described as Area 18 – Woodmont East in this Facilities Plan. This plan assumes that this amendment will be executed, bringing the total Londonderry flow limit for discharge to Derry to 750,000 gpd.

2.4 Current Flows and Loads

The Town has provided flow data for the flow to Manchester as measured at the Londonderry Monitoring Station (LMS), as well as flow data from each pump station. The data provided from the LMS is totalized flow each month, with three days that testing was performed to determine loadings (BOD and TSS). The flow data provided for the pump stations is based on weekly or more frequent flow meter totalizer readings, resulting in weekly average used to determine average daily flow values. The total flow to Derry is the sum of the flows from the Charleston Avenue and Action Boulevard Pump Stations.

The data analyzed are for the time periods of March 2019 through March 2020 (prior to the COVID 19 pandemic) and April 2020 through April 2021. The higher of the flow numbers from these two periods were used to define the current flows in the sewer system.

2.4.1 Industrial Users

The Town has three large industrial users; Granite Ridge Energy (GRE – formerly AES), Coca Cola Beverages Northeast (CCBNE), and Stonyfield Farm Inc. (Stonyfield). The Town has pretreatment agreements with each of these users. The wastewater from these users has a significant impact on the overall flow to Manchester. Stonyfield has installed a pretreatment system since 2005, which has significantly reduced the BOD and TSS in its discharge. A

summary of flows and mass loadings for these three industrial users for 2019 through April 2021 time period is presented in Table 2-1.

Table 2-1 Industrial Users Flows and Loads Summary

Condition	Flow (MGD)	BOD (lb/day)	TSS (lb/day)
Industrial Users – Annual Average			
Granite Ridge	0.555	-	-
Coca Cola	0.123	835	-
Stonyfield	0.187	38	81
Industrial Users – Max Month			
Granite Ridge	0.756	-	-
Coca Cola	0.160	1170	-
Stonyfield	0.203	78	423

2.4.2 Flow to Manchester

Monthly Flow data provided by the Town for March 2019 through March 2020 (prior to the COVID 19 pandemic) and April 2020 through April 2021 have been reviewed. The total flow to Manchester via the LMS is greatly dependent on the flow discharged from GRE. The daily flow from GRE can vary from less than 0.191 MGD to 0.756 MGD. Over the time period, the flow from GRE has averaged approximately 0.555 MGD. GRE has a discharge permit with the Town that limits its discharge to the following:

- Annual Average Flow: 0.858 MGD
- Maximum Daily Flow: 1.109 MGD

In reviewing the flow data from the LMS and GRE for 2 year time period, the flow from GRE can account for over 50% of the total flow to Manchester on any given day. Because GRE is allowed to discharge up to 0.858 MGD for any given month, this value will be used in establishing current monthly average flows to Manchester, although GRE has not discharged this quantity for any month to date. This is of importance when projecting future flows to Manchester to determine if Londonderry will exceed purchased capacity of the Manchester Inter-municipal Agreement.

To determine the highest monthly flow to Manchester without counting the flow from GRE, the average monthly flows reported from GRE were subtracted from the monthly average flows reported by Manchester for each month in the two-year timeframe outlined above. The Average Daily Flow (ADF) without flows from GRE, on a monthly average ranged from 0.61 MGD to 1.37 MGD. The highest monthly average of 1.37 MGD was recorded in May of 2019. Because the flow limit to Manchester is based on a monthly average, it is proposed to use the highest monthly average of 1.37 MGD.

Table 2-2 Current Average Daily Flow to Manchester

	High Monthly Average Flow (MGD)
GRE Flows (permitted)	0.858
Non-GRE Flows (max month)	1.370
Total	2.228

2.4.3 BOD and TSS Load to Manchester

BOD and TSS loadings to Manchester are determined by sampling the wastewater at the LMS three consecutive days each month. The BOD and TSS loadings from March 2019 to April 2021 are summarized in TABLE 2-3. Values are given for annual average and high monthly average, which can be compared to the permitted limit with Manchester.

Table 2-3 Current Average Loadings to Manchester

	Annual Average (lb/day)	High Monthly Average (lb/day)	Permitted Monthly Average (lb/day)
BOD	2,703	4,634	9,571
TSS	2,751	6,366	9,340

Compared to the BOD loadings reported in the 2005 Facilities Plan Update, the overall BOD loading to Manchester has decreased, likely as a result of the pretreatment facilities added by Stonyfield since 2005 and Best Management Practices (BMPs) by CCBNE.

2.4.4 Flows to Pump Station

The total flows to Manchester reported above include the flow to the Plaza 28, Mammoth Road, and Webb Drive Pump Stations. In order to assess the impacts of future flows on these stations, the current flows to each station must be defined. The flow data provided for the pump stations is based on weekly or more frequent flow meter totalizer readings, resulting in weekly average used to determine average daily flow values.

2.4.4.1 Plaza 28 Pump Station

Based on March 2019 to April 2021 pump station totalizer data provided, the average daily flow to the Plaza 28 Pump Station ranges from approximately 317,400 gpd to 789,500 gpd, with an overall average of 464,300 gpd. A peaking factor of 3.0 results in a peak flow of 1.4 MGD, or 967 gpm. In 2007, flow meters were installed in the three sewers draining to the Plaza 28 Pump Station. During a 2-inch rain event, the peak flow measured by these three meters totaled approximately 700 gpm. The current estimated peak flow of 967 gpm appears reasonable given the growth in the service area since the 2007 flow measured during a significant rain event. Based on the data reviewed, infiltration/inflow (I/I) does not appear to be significant in the Plaza 28 Pump Station drainage area.

2.4.4.2 Mammoth Road Pump Station

Based on March 2019 to April 2020 pump station totalizer data provided, the average daily flow to the Mammoth Road Pump Station ranges from approximately 4,000 gpd to 43,200 gpd, with an overall average of 17,700 gpd. This station serves the Londonderry schools and as expected, the daily flows to the station are lowest when school is not in session. The flows from April 2020 to April 2021 were considerably lower at the station due to the COVID 19

pandemic and schools working virtually with limited activity at the schools. The peaking factor of 4 results in a peak flow of 0.071MGD, or 49 gpm. Based on the data provided, I/I is not a problem in the Mammoth Road service area.

2.4.4.3 Webb Drive Pump Station

Based on March 2019 to April 2021 pump station totalizer data provided, the average daily flow to the Webb Drive Pump Station ranges from approximately 990 gpd to 3,000 gpd, with an overall average of 1,570 gpd. A peaking factor of 4.0 results in a peak flow of 0.006 MGD, or 4 gpm.

2.4.5 Flow to Derry

The South Londonderry Sewer System flows to Derry and includes the Tokanel Drive, Charleston Avenue, and Action Boulevard Pump Stations. Wastewater from this System is pumped to the Derry Wastewater Treatment Facility for treatment and disposal. The total flow to Derry is the sum of the average daily flows pumped from the Charleston Avenue and Action Boulevard pump stations. Flow data is typically collected at each station once per week, so the average daily flow (ADF) for each week is compared. As the flows can vary from week to week, it was decided to take the highest weekly ADF seen at Charleston Avenue Pump Station and add the ADF for the same week from Action Boulevard. Based on this approach, the current average daily flow to Derry is approximately 151,630 gpd, and the breakdown of flow to each pump station is discussed below.

2.4.5.1 Tokanel Drive Pump Station

Flow to Tokanel Drive Pump Station has increased significantly in recent years due to new sewer connections from existing condominiums in the Constitution Drive area and new buildings in the service area, such as the Grand Estates and All American Assisted Living and extension of the South Londonderry Interceptor. Based on March 2019 to April 2021 pump station totalizer data provided, the average daily flow to the Tokanel Drive Pump Station ranges from 46,000 gpd to 69,000 gpd, with an overall average of approximately 54,200 gpd. Using a peaking factor of 3.75, the current peak flow to the station is approximately 0.20 MGD, or 140 gpm. Based on minor flow variations, I/I is not significant in the service area of the Tokanel Drive Pump Station. Tokanel Drive Pump Station discharges to Charleston Avenue Pump Station.

2.4.5.2 Charleston Avenue Pump Station

Based on March 2019 to April 2021 pump station totalizer flow data provided, the average daily flow to the Charleston Avenue Pump Station ranges from 96,600 gpd to 137,240 gpd, with an overall average of 116,100 gpd. Using a peaking factor of 3.75, the current peak flow to the station is approximately 0.43 MGD, or 302 gpm, well below the pumping capacity of 600 gpm with the pumps operating at the lower speed. Since the Tokanel Pump Station force main discharges just upstream of the Charleston Avenue Pump Station wet well, the actual peak flow to Charleston Avenue is the pumping rate of Tokanel Pump Station. In 2022, the pump control panel at the Tokanel pump station was replaced with a new panel and includes VFDs to operate the pumps. The VFDs are used to vary the pumping rate from approximately 1,000 gpm to 1,250 gpm to help reduce the peak flow reaching the Charleston Avenue Pump Station. Based on the minor variations in average daily flow, I/I is not significant in the service area of the Charleston Avenue Pump Station.

2.4.5.3 Action Boulevard Pump Station

Based on March 2019 to April 2021 pump station totalizer flow data provided, the average daily flow from the Action Boulevard Pump Station ranges from 7,800 gpd to 29,000 gpd, with an average of 13,100 gpd. Assuming a peaking factor of 4, the current peak flow to the station is approximately 0.05 MGD, or 36 gpm. In reviewing the minor flow variations, I/I is not a problem in the service area of the Action Boulevard Pump Station.

2.4.6 BOD and TSS Loads to Derry

Derry is currently in the initial phase of developing a sampling and testing program for Londonderry flows using sampling points from the Charleston Avenue and Action Boulevard pump stations. As of yet, the Town has no data on BOD and TSS for the wastewater pumped to Derry. As discussed above, there is not a significant amount of I/I in the South Londonderry Sewer System so there is little dilution of the wastewater. Because there is no data available, an estimate of current loads is based on New Hampshire Department of Environmental Services (NHDES) design standards. The NHDES design standards recommend values to use for projecting loads for wastewater from residential users. For BOD, the loading rate is 0.2 pounds per capita per day (ppcd), and for TSS the loading rate is 0.25 ppcd. Based on an assumed wastewater contribution of 70 gallons per day per person, the equivalent loading concentrations are 340 mg/l of BOD, and 428 mg/l of TSS. Using these concentrations and an estimated average daily flow of 151,630 gpd, the estimated current average daily loads to Derry are 430 lb/day and 541 lb/day, respectively.

2.5 Non-Sewered Areas

A majority of the developed area of Londonderry is not currently served by public sewer. These properties are served by privately owned on-lot septic systems consisting of a septic tank and a subsurface disposal field. Although the non-sewered areas include some commercial establishments, many of these areas are residential. According to the 2013 Master Plan, housing in Londonderry is a mix primarily consisting of homes built after 1980. The majority of the Town's existing neighborhoods consist of single-family homes on one to two acre lots. For neighborhoods with this type of density, on-lot septic systems provide a cost-effective means for wastewater disposal. The remaining housing units are in higher density developments consisting of single or multiple units in attached structures, such as condominiums and townhouses, or mobile home parks.

Some of the higher density housing developments are not on Town sewer. Owners and/or representatives of some of these developments have approached the Town to discuss the potential of connecting to Town sewer to solve ongoing problems with on-lot subsurface disposal systems. The possibility of providing Town sewer to some of these areas is discussed in Section 3.

2.5.1 Septic System Replacements

Since there appears to be adequate space for replacement systems to be constructed on most properties, extending Town sewers to serve existing residential areas is not a priority for the Town. However, if a specific area experiences a significant number of system failures in a relatively short period of time, due to poor soils or high groundwater, extending Town sewer to the area may be a consideration.

2.5.2 Septage Disposal

For properties served by onsite septic systems, the septage collected in the septic tank must be pumped out and disposed of in a manner in compliance with State regulations. It is recommended that septic tanks be pumped every 3 to 5 years to reduce the risk of excessive solids overflowing the septic tank and clogging the disposal field. The Inter-Municipal Agreement with Manchester allows for septage collected in Londonderry to be disposed of at the wastewater treatment plant in Manchester.

The City of Manchester provided the annual quantity of septage received from Londonderry for the years of 2013 through 2021, summarized as follows:

2021	4,554,720 gallons
2020	3,956,420 gallons
2019	3,781,899 gallons
2018:	2,977,009 gallons
2017:	2,649,382 gallons
2016:	1,909,322 gallons
2015:	2,064,100 gallons
2014:	1,985,740 gallons
2013:	1,757,565 gallons

These quantities shows a significant increase from the annual quantities reported in the 2005 Facilities Plan, which averaged approximately 1,800,000 gallons per year. The current IMA with Manchester indicates that if the City were to limit septage from Londonderry, it would not limit it to less than 225,000 gallons per month, which translates to 2,700,000 gallons per year. However, in discussions with personnel in Manchester, the City has no intention of limiting the amount of septage from Londonderry.

Section 3 Future Needs

3.1 Planning Period

The Town of Londonderry completed an update of its Master Plan in 2013, which summarizes the Town's direction relative to future growth. To determine Londonderry's future wastewater needs, the Town's Master Plan was reviewed in meetings with the Town's Public Works and Planning departments. The planning period typically used for facilities planning is 20 years, although flow projections for identified growth areas in this plan were made based on complete build-out of each area. The rate of future development is difficult to predict, and growth may occur at different rates in different parts of Town. The projections of future wastewater flows and loads are summarized in this Section of the report.

3.2 Master Plan Summary

The 2013 Master Plan identified several activity centers, or general growth areas including the Pettengill Road Industrial Village, the North Artisan District, the Town Center Recreational Village, the Town Center Common, and the South Village Suburban Retrofit. Each of these areas is discussed under the corresponding identified growth areas for this Facilities Plan Update in this section of the report. Also included is the Woodmont Common development in the South Londonderry area adjacent to I-93, with initial phases under construction.

The Town's 2004 Master Plan recommended that the portion of Route 102 southwest of Mammoth Road maintain its open, wooded nature with low density development, thus not requiring public sewer. The South Village Suburban Retrofit area identified in the 2013 Master Plan includes the area of the Route 102 and Mammoth Road intersection, but does not specifically discuss the portion of Route 102 southwest of the intersection. At this time the Town does not plan to provide public sewer along Route 102 southwest of the Mammoth Road intersection.

There are high-density residential developments currently planned or under development, with the potential for more in the identified activity centers. The Town's Master Plan recommends that these new high-density residential developments be served by Town sewer where possible.

3.3 Wastewater Flows and Loads Projections

In order to project future wastewater flows and loads, specific areas of future development were identified in meetings with Town personnel. These areas primarily consist of undeveloped lots in areas where Town sewer is already nearby, and areas within the vicinity of existing sewers where commercial, industrial, and high-density residential growth is projected to occur as promoted by the Town's Master Plan. These areas are identified by number or letter in the projected growth area map, Map B in **Appendix A**, and the same designations are used throughout this Facilities Plan. Many of these areas were identified in the 2005 Facilities Plan, and the number or letter designations used in 2005 are carried over into this update.

3.3.1 Flow Projections Basis

The New Hampshire Department of Environmental Services (NHDES) had established standards for projecting wastewater flows from undeveloped areas in older versions of its design standards. The current NHDES design standards adopted in 2014 only includes flow guidelines for specific types of users, such as residential, and no longer establishes flow rates for undeveloped land. Unit flow rates used in the 2005 Facilities Plan will be used for this update, as described in the following sections. Peaking factors for estimating peak flows are also established, with peak flows used for sizing gravity sewer piping and pump stations.

3.3.1.1 Industrial and Commercial Flow Projections

Estimating flows from industrial and commercial areas can be difficult due to the potential for wide variations in flows from different types of users, for example a dry industry compared to a brewery or restaurant. For one of the growth areas (Area 15), the Town had developed conceptual plans in 2004 for development through Design Charrettes in which building areas are estimated. Where approximate building areas have been estimated, a flow rate is estimated using the following: 100 sq. ft. of building/employee and 10 gpd/employee based on a typical dry industry or retail store. For commercial/industrial areas where only gross acreage is known, a flow rate of 700 gallons/day/gross acre is used. This rate is based on review of actual wastewater flows from commercial/industrial areas in several communities for similar facilities planning and should yield reasonable flow projections for planning purposes.

3.3.1.2 Residential Flow Projections

The 2020 census data indicates that Londonderry averages 2.78 persons per household (rounded up to 3 for calculations). Current NHDES standards refer to Table 3-2 in the Metcalf and Eddy "Wastewater Engineering Treatment and Resource Recovery" textbook for flow rates from residential users. For a three-person household, the referenced table calls for a flow rate of 68 gallons per capita to be used for flow projections, with higher rates for a 2 person or 1-person household. In the 2005 Facilities Plan, a flow rate of 70 gallons per capita was used, and this same rate will be used for this update. For 3 persons per residential unit, this calculates to an average daily flow of 210 gpd per residential unit, which is used for flow projections in this Facilities Plan.

The NHDES standards also allow actual water use records, when available, to be used for existing users that could connect to the sewer. There are two existing condominium developments in the growth areas and the Town was able to obtain actual water use records of each for multiple years. That data is referenced in the appropriate Growth Area descriptions.

3.3.1.3 Infiltration Allowance

According to the NHDES standards, an allowance for infiltration of 150 gpd/acre is to be used for areas to be served by future sewers. When estimating peak flow rates, the peaking factor is only applied to sanitary flows, not the infiltration allowance. Based on our experience, this infiltration allowance provides a conservatively high estimate of infiltration for Londonderry's system.

3.3.2 Loads Projections Basis

Along with the flow projections for future users, wastewater loads have been estimated, in terms of BOD and TSS. The NHDES design standards suggest that loading rates for residential users be estimated based on a range of 0.17 to 0.22 pounds per capita per day (ppcd) for BOD and a range of 0.20 to 0.25 ppcd for TSS depending on whether garbage grinders are prevalent. In the 2005 Facilities Plan, loadings of 0.20 ppcd for BOD and 0.25 ppcd for TSS were used and those rates will be used again for residential users in this Facilities Plan. Using a flow rate of 70 gpd for a residential user (not including infiltration), the equivalent concentration is 340 mg/l for BOD and 428 mg/l for TSS.

It is more difficult to assign a loading rate for commercial and industrial users, because the loading is greatly dependent on the type of business and the nature of its discharge to the sewer. Actual sampling of the flow to Manchester indicates that BOD concentrations range from 91 mg/l to 378 mg/l. The data shows that TSS concentrations can range from 57 mg/l to 525 mg/l. These concentrations are diluted by the high-flow, low-strength discharge from Granite Ridge Energy. For the purpose of projecting loadings from future users for this

Facilities Plan, concentrations equivalent to the residential loading rates discussed above will be used (BOD of 340 mg/l and TSS of 428 mg/l). These concentrations will be applied to only the sanitary flow projections, not the infiltration allowances.

3.4 Growth Areas Descriptions and Flow Projections

The following is a brief summary of each of the growth areas identified through meetings with Town personnel in conjunction with the review of the Londonderry's 2013 Comprehensive Master Plan. Wright-Pierce attended workshops with the Town on July 29, 2015, and again on September 9, 2015 to review the growth areas. Follow up reviews have also occurred in 2018 through 2023. Each growth area was reviewed in detail and the maps from the 2005 Facilities plan were modified as follows:

- Expanded areas to include new development after the 2005 Facility Plan;
- Added areas currently being developed/permitted;
- Removed areas that have been developed since the 2005 Facility Plan and are now included in the existing flows;
- Removed areas that are no longer considered growth areas to be served by Town sewer
- Assumed no development in conservation parcels.

Each growth area is summarized below and includes:

- Number of potential and existing residential units;
- Number of acres available for potential commercial and industrial development;
- Projected sanitary flow;
- Infiltration allowance;
- Conceptual description of the sewer extension to serve the area where appropriate; and
- Estimated cost of the conceptual sewer extension plan for the area where appropriate.

Growth areas that were identified in the 2005 Facilities plan that have either been developed or are no longer considered to be growth areas that could be served by sewer are listed in Section 3.4.1 below. The growth areas moving forward with this plan are described starting in Section 3.4.2 below.

Maps of the growth areas are shown in Maps 1 through 10 included in **Appendix A**. In the title of each growth area, the associated map in **Appendix A** is listed. The number or letter assigned to each growth area is consistent throughout this report and correlates with the maps. The numbered areas represent land that is mostly undeveloped and planned to be developed consistent with the Master Plan. The areas that are identified by letters represent areas in the vicinity of existing or planned interceptor sewers that are mostly developed already, with a high percentage being residential development. The boundaries of the areas are based on best information available at the time this report was written. The boundaries may change over time during the development of the areas and design of the sewers to include some of the properties adjacent to the identified areas.

The potential layout and cost to install sewer within the growth areas is difficult to predict and will depend on how the parcels are developed. There has been no attempt to estimate the cost to provide sewer within specific growth areas as it is assumed that the developers of each area will design and construct the sewers within the area and to the connection points with the Town sewer. The exceptions are where the Town may participate in funding extensions of the Town's existing sewer interceptors to serve specific areas identified in the 2013 Master Plan and

in meetings with Town staff. Where provided, the cost estimates in this section are approximate and intended only to provide an indication of the order of magnitude of possible costs. Actual cost will depend on many factors including final development layout, final sewer routing, sewer depth, final pump station upgrade scopes, etc. For estimating purposes, the construction cost for gravity sewer and force main installation at typical depths is estimated to range from $300/linear feet (LF) to $450/LF depending on the size of the pipe and if it is assumed to be installed in paved areas. If it is expected that sewer depth could be above the normal 7 to 10-foot depth, higher unit costs may be used. Construction cost for a new pump station, similar to the existing Action Boulevard Pump Station, could range from $1.5 to $2.0 million depending on the amount of site work, depth of the wet well, ledge removal, etc. In addition to the construction costs, an allowance for Technical Services (design, inspection, etc.) and contingencies is included. This allowance is estimated to be 35% of the estimated construction cost, which is typical for planning level estimates.

3.4.1 Areas Identified as Growth Areas in 2005 That Have Been Developed or No Longer Considered Growth Areas to Be Served By Sewer

3.4.1.1 Area 4 – Mill Pond #1

Area 4 is the first phase of a private residential development in the northeast portion of town. Since 2005, this portion of the Mill Pond development has been completely constructed. The sewer for the entire development in Area 4 has already been constructed by the developer, as shown on the existing sewer map, Map A in **Appendix A**. The Town recently took over the sewer system in this development. The flow from Area 4 does not impact any other portion of the Londonderry sewer system

3.4.1.2 Area 7 – Whittemore Place and Trail Haven Estates

Area 7 includes the Whittemore Place and Trail Haven Estates projects east of Mammoth Road that have been permitted by the Town and are now completely built. The flow from these developments are included in the existing flow data. The existing Mammoth Road Interceptor was constructed through this development and wastewater from this development area flows to the Plaza 28 Pump Station and then on to Manchester.

3.4.1.3 Area 16 – Crestview Circle

Area 16 has been completely developed and was removed from the flow projections. Wastewater from this development area flows to the Plaza 28 Pump Station and then on to Manchester.

3.4.1.4 Area B1 – Lancaster Drive – Cortland Street Area

Area B1 includes the existing low-density residential neighborhood in the area of Lancaster Drive and Cortland Street. It is not the intention of the Town to provide sewer to existing neighborhoods like this one, where the lot sizes are 1-acre or larger and there is adequate space to accommodate replacement subsurface disposal systems. Typically, it is more cost effective to replace on-lot subsurface disposal system in low-density neighborhoods compared to installing public sewer. Due to the limited capacity at the Derry Treatment plant, it is assumed there is no capacity for this existing neighborhood, so potential flows from this area are not included in flow projections under this Plan.

3.4.1.5 Area D – P.D. Associates Development (The Nevins)

Since 2005, Area D, known as the Nevins, has been completely developed and was removed from the future flow projections. Wastewater from this area flows to the Tokanel Drive Pump Station, then to the Charleston Avenue Pump Station where it is pumped to Derry.

The developer for Area D constructed the sewer serving the development along with the Tokanel Drive Pump Station and force main. In an agreement with the developer, the Town agreed to reimburse the developer for part of the cost of the pump station and force main through future access fees collected by the Town for users in the service area of the pump station. The reimbursement was limited to $800,000, and this amount of reimbursement was reached in 2016.

3.4.1.6 Area E

Area E includes a large area consisting of existing low-density residential neighborhoods north of Century Village. As discussed under Area B1 above, the Town does not anticipate extending Town sewer to serve the existing homes in Area E.

3.4.1.7 Area G

In the 2005 Plan, Area G included existing low-density residential neighborhoods in the vicinity of the existing Mammoth Road Interceptor. Developments of Mountain Home Estates, Parrish Hill, and Schoolhouse Square are already connected to the Mammoth Road Interceptor and are therefore not included in the future flow calculations. The Town does not anticipate extending Town sewer to serve the other existing homes in Area G currently served by septic systems, consistent with the decision not to serve other low-density residential areas as outlined under Area B1 above.

3.4.2 Areas Identified as Growth Areas

3.4.2.1 Area 1 – Sanborn Road (Map 4)

Area 1 was expanded to include former Area 2 (from the 2005 Facilities Plan). The total area is identified to be residential development consisting of approximately 60 acres of land and a potential for 218 housing units. The projected sanitary flow of 218 housing units is 45,780 gpd. With an infiltration allowance of 9,000 gpd, the total average daily flow for this area is 54,780 gpd. Wastewater from this development area would flow to the Plaza 28 Pump Station and then on to Manchester. It is assumed the Developer is responsible for the design and construction of the sewer to serve Area 1.

3.4.2.2 Area 3 – Mill Pond #2 (Map 1)

Area 3 is projected to be a future expansion within the Town of Londonderry of the Mill Pond residential development described under Area 4 in Section 3.4.1.1. Preliminary planning by the developer indicates that 1,265 housing units could be constructed in Area 3. For purposes of estimating infiltration, it is assumed that the development will occur on 168 acres. The projected sanitary flow from the 1,265 housing units is 265,650 gpd, and the infiltration allowance is 25,200 gpd, for a total average daily flow of 290,850 gpd. It is assumed that the wastewater from Area 3 would flow to the sewer system in Area 4 and on to Manchester. The Town recently took over the sewer system in Area 4. The flow from this development will be included in the overall flow projections to Manchester.

In preliminary discussions with the developer, the connection point of the sewer to serve Area 3 and Area 3A would be at SMH P-49 in the Town's sewer system on Hunter Mill Way. The 2,500 linear feet of existing 8" sewer from SMH P-49 downstream to SMH P-25 just west of Manter Mill Road would need to be replaced with 15" pipe to provide capacity for proposed development in Areas 3 and 3A. The Developer is responsible for the design and construction of the sewer system to serve Area 3 and for the replacement of the existing 8" sewer with 15" sewer.

3.4.2.3 Area 3A – Mill Pond #3 (Map 1)

Area 3A is projected to be a future expansion of the Mill Pond development described under Area 3 and Area 4. This portion of the Mill Pond development will be located in Auburn, adjacent to Area 3. Preliminary information from the developer indicates this area will be a mix of residential and commercial/industrial development, with 29 residential units contributing 6,090 gpd of flow and commercial/industrial users contributing 6,400 gpd. To estimate infiltration, preliminary plans indicate approximately 2,575 linear feet of 12" sewer is needed in Area 3A to connect to the proposed sewer in Area 3. At an infiltration rate of 300 gpd/in-mile of pipe, infiltration is estimated at 1,755 gpd. The total flow from Area 3A is estimated at 14,245 gpd.

Wastewater from Area 3A will flow through areas 3 and 4, then onto Manchester for treatment. The flow from Area 3A will not impact any other portion of the Londonderry sewer system. The developer will be responsible for the design and construction of sewer serving Area 3A and connection to the sewer in Area 3.

In order for sewer in Auburn to connect to the Londonderry sewer system, Auburn would need to negotiate an Inter-Municipal Agreement with Londonderry as well as develop a Sewer Use Ordinance that is consistent with Londonderry's ordinance.

3.4.2.4 Area 5 – Page Road (Map 4)

Based on discussions with Town staff, Area 5 is proposed to be a Mixed-use Development consisting of approximately 20 acres of commercial development, 67 acres of industrial development, and a proposed development at 13 Page Road with a permitted flow of 2,793 gpd. The projected sanitary flow is 63,693 gpd, and the infiltration allowance is 13,050 gpd, for a total average daily flow of 76,743 gpd. Recent discussions with the developer and initial flow projections for potential development of this area are consistent with the estimated flows carried for Area 5 as outlined above.

In the past, a sleeve for a sewer pipe was installed under Rockingham Road near Page Road with the hopes it could be used for the sewer serving Area 5. The engineer working for the developer of Area 5 has determined that due to its elevation, the existing sleeve under Rockingham Road cannot be used for this purpose, so the developer will need to install a sewer along Rockingham Road and connect to the existing sewer on Sanborn Road. The developer will be responsible for the cost of this sewer piping. Wastewater from this development area would flow to the Plaza 28 Pump Station and then on to Manchester.

3.4.2.5 Area 6 – Stonehenge Road (Map 6)

A majority of Area 6 is included in a relatively new development called MacGregor Cut, which is a high-density residential development completed in 2021 and now contributing to existing flows. The remainder of the area includes approximately 23 acres dedicated as open space, and some existing residential units. Approximately 6 acres of land is currently used for 2 single family homes, but there is potential for this area to be redeveloped into more high-density residential units. For flow projection purposes, it is assumed that 24 residential units could ultimately be constructed on this 6-acre area. The projected sanitary flow is 5,040 gpd, and the infiltration allowance is 900 gpd, for a total average daily flow of 5,940 gpd.

The developer of the MacGregor Cut has extended the Town sewer to serve the development. Wastewater from this development area would flow to the Plaza 28 Pump Station and then on to Manchester.

3.4.2.6 Area 8 – Hillside Drive (Map 7)

Area 8 includes a potential 50 residential units on 24 acres of land off Londonderry Road in the area of Hillside Drive, and 4 acres of commercial development on Londonderry Road. The projected sanitary flow is 13,300 gpd, and the infiltration allowance is 3,600 gpd, for a total average daily flow of 16,900 gpd.

The wastewater from this area would most likely flow to an existing sewer in Derry. The flow will count towards the total flow from Londonderry to Derry but likely will not impact the Londonderry collection system. It is assumed that the developer would be responsible for the cost to install the sewer for these developments.

3.4.2.7 Area 9 – Jack's Bridge Road (Map 5)

Since the 2005 Facility Plan, much of this industrial development area has been developed. Recent permitted developments include: 2V with a permitted flow 1,878 gpd, Rhino with a permitted flow of 3,664 gpd, and Bauchman Towing with a permitted flow of 105 gpd. There is approximately 78 acres of developable land remaining for industrial development. The projected sanitary flow is 60,247 gpd, and the infiltration allowance is 11,700 gpd, for a total average daily flow of 71,947 gpd. Wastewater from this development area would flow to the Plaza 28 Pump Station and then on to Manchester.

A private pump station and sewer has already been constructed by the developer to serve a majority of this area; however, the Town is currently considering taking over this pump station and the constructed sewer. Any additional sewer needed to serve the remaining area would be the responsibility of the developer.

3.4.2.8 Area 10 – Planeview Drive (Map 3)

A portion of Area 10 has been developed since the 2005 Facilities Plan. The Town has indicated that 2 remaining lots on Planeview Drive could be developed for commercial/industrial use. The lots consist of approximately 19 acres that could be developed with a projected sanitary flow of 13,300 gpd, and the infiltration allowance is 2,850 gpd, for a total average daily flow of 16,150 gpd.

Sewer from this area would flow to the existing interceptor sewer that runs cross-country on the northern and eastern boundaries of the lots to be served. The wastewater from this area flows by gravity to Manchester and would not impact any existing pump stations.

3.4.2.9 Area 11 – Delta Drive (Map 3)

A portion of Area 11 has been developed since the 2005 Facilities Plan and a large portion of Area 11 has since been dedicated to conservation. There are approximately 6 acres of undeveloped land zoned for industrial use remaining in Area 11 on Delta Drive with a projected sanitary flow of 4,200 gpd, with an infiltration allowance of 900 gpd, for a total average daily flow of 5,100 gpd.

This area is already served by an existing sewer on Delta Drive and a cross-country sewer on the east end of Delta Drive. Therefore, no sewer extension is required to serve these lots. The wastewater from this area flows by gravity to Manchester and would not impact any existing pump stations.

3.4.2.10 Area 12 – Aviation Park Drive (Map 2)

Area 12 includes a recent development, 5 Aviation Park, with a permitted flow of 3,000 gpd and 69 acres of undeveloped land zoned for industrial use on Aviation Park Drive and Harvey Road. The projected sanitary flow is 51,300 gpd, and the infiltration allowance is 10,350 gpd, for a total average daily flow of 61,650 gpd.

A portion of this area is already served by an existing sewer on Aviation Park Drive and a cross-country sewer on the east end of the road. A sewer extension would likely be required along Harvey Road to serve the lots adjacent to Harvey Road. It is assumed developers of this area would construct the necessary sewer mains to serve these lots. The wastewater from this area flows by gravity to Manchester and would not impact any existing pump stations.

3.4.2.11 Area 13 – Webster Road (Map 3)

A portion of Area 13 has been developed since 2005, and the remaining undeveloped area includes approximately 100 acres of land zoned for industrial use in the area of Webster Road, both north and south of Grenier Field Road. For this remaining 100 acres, the projected sanitary flow is 70,000 gpd, and the infiltration allowance is 15,000 gpd, for a total average daily flow of 85,000 gpd.

This area is served by existing interceptor sewers on Grenier Field Road, Webster Road, the cross-country sewer to Harvey Road, and the sewer on Kitty Hawk Landing. The wastewater from this area flows by gravity to Manchester and would not impact any existing pump stations.

3.4.2.12 Area 14 – Akira Way (Map 3)

More than half of Area 14 has been developed since 2005. The remaining 11 acres of undeveloped land zoned for industrial use on Akira Way has a projected sanitary flow of 7,700 gpd, and the infiltration allowance is 1,650 gpd, for a total average daily flow of 9,350 gpd.

This area is already served by an existing sewer on Akira Way and, therefore, no sewer extension is required to serve these lots. The wastewater from this area flows by gravity to Manchester and would not impact any existing pump stations.

3.4.2.13 Area 15 - Pettengill Road Commerce Park (Map 2)

Area 15 includes land along Pettengill Road and the recently built Webb Drive, with potential development both to the north and south of Pettengill Road. A conceptual layout of this development was presented in the 2003 "Londonderry Business Park Design Charrette", which identified potential road locations and development areas. The Charrette also provided an estimate of 3.6 million square feet of commercial or industrial building space for the development. This area is also discussed in the 2013 Master plan, referred to as the Pettengill Road Industrial Village. Since the 2005 Wastewater Facility Plan, there has been development of large “dry” commercial businesses with low water usage and other changes as identified by the Town Staff, summarized as follows:

- Developed area: Prologis completed and contributing to existing flows
- Developed area: FedEx completed and contributing to existing flows
- Developed area: FW Webb completed and contributing to existing flows
- Developed area: EFI completed and contributing to existing flows
- Developed area: Bellevance completed and contributing to existing flows
- Conversion of 140 acres of land to conservation
- Area Remaining to be developed and recently permitted projects:
    - 55 Pettengill Road – New Balance - with permitted flow of 9,000 gpd
    - 36 Industrial Drive – Auto Dealership - with permitted flow of 500 gpd
    - Expansion of Area 15 to include 80,000 square feet of commercial building development
    - Potential of 100,000 square feet of industrial building development
    - Potential for 250 residential units

- Potential for 23 acres of mixed commercial development
- Potential for 110 acres of additional industrial development

Based on these changes, sanitary wastewater flows of 173,100 gpd are projected. An infiltration allowance of 19,950 gpd is estimated based on remaining development of 133 acres. The total average daily flow projected for this area is 193,050 gpd.

Since 2005, much of the sewer for this area has been constructed. This includes gravity sewer from the cross-country interceptor (along Little Cohas Brook) and south beyond the new Prologis building, then west to the newly constructed Webb Drive Pump Station near the Manchester City Line, and a sewer on Industrial Drive to serve FedEx. Interceptor sewer has also been installed south from the Webb Drive Pump Station to a point south of a wetlands in the southwest portion of Area 15. To service the remaining area of the Commerce Park area, it is estimated that an additional 3,800 LF of gravity interceptor sewer would be necessary. The total estimated cost for the remaining interceptor is $1,540,000. The Town may participate in the funding for this sewer interceptor as part of the development in this commerce park, consistent with the Master Plan. This cost estimate does not include sewer within the potential residential development or on specific commercial/industrial lots.

The Webb Drive Pump Station has a capacity of 485 gpm. As a check, we reviewed the new projected flows outlined above that could flow to the pump station. It is assumed the pump station service area could include the residential units, the mixed commercial area, the 80,000 sq. ft. of commercial buildings, the FW Webb building, approximately 30% of the remaining industrial area, and half of the infiltration. Based on these assumptions, the projected flows are 99,700 gpd of sanitary flow and 9,975 gpd of infiltration. Applying a peaking factor of 4 to the sanitary flow, the projected peak flow to the station is 284 gpm.

3.4.2.14 Area 17 – Rockingham Road and Vista Ridge Drive (Map 5)

Area 17 is primarily undeveloped and has been expanded since the 2005 Facilities Plan to now include 52 acres of land zoned for commercial/residential development. The current proposal for the land is for the construction of 149 residential units. The projected sanitary flow from the proposed development is 31,290 gpd, and the infiltration allowance is 7,800 gpd, for a total average daily flow of 39,090 gpd.

It is assumed that the existing sewer can serve this area, and sewer services will be the responsibility of the developer. Wastewater from this development area flows to the Plaza 28 Pump Station and then on to Manchester.

3.4.2.15 Area 18 – Woodmont Common East (Map 7)

Area 18 represents the proposed Woodmont Common mixed-use development area to the east of I-93. This development is projected to occur over the next 20+ years, although some of it could develop sooner as a result of the NHDOT project to construct Exit 4A on I-93. The area consists of approximately 217 acres of proposed mixed-use development. In February 2022, the developer presented updated flow projections for potential development of the area. Based on the original development plan of mixed use, including residential, institutional (hospital and nursing home), and commercial/office space, they indicated the sanitary flow could be approximately 300,000 gpd, and with an infiltration allowance of 32,000 gpd, the total average daily flow would be approximately 332,000 gpd. It should be noted that the developer had projected residential flow based on 3-bedroom units with an average daily flow of 150 gpd/bedroom for a total of 450 gpd/unit. The unit flow of 150 gpd/bedroom is used when designing a septic system and is overly conservative to protect the integrity of a subsurface disposal field. For

residential units, the sanitary flow projection was modified to 210 gpd/unit to be consistent with residential flow projections used throughout this Facilities Plan. Based on this modification, the sanitary flow was approximately 229,930 gpd and using the same infiltration estimate, the total flow for Area 18 would be approximately 261,930 gpd.

In the updated 2021 IMA with Derry, Londonderry has a maximum allocation of 500,000 gpd for treatment at the Derry wastewater treatment facility. Taking into account other projected flows in South Londonderry, the flow limit of 500,000 gpd is not sufficient to allow the projected flows from Area 18 to flow to Derry. In 2023, the Town began discussions with Derry to increase Londonderry's flow limit by an additional 250,000 gpd to specifically serve Area 18. This plan assumes that this amendment will be executed, bringing the total Londonderry flow limit for discharge to Derry to 750,000 gpd. Based on the 250,000 gpd of flow being negotiated for Area 18, that total flow will be carried for this Facilities Plan, with 220,000 gpd assumed for sanitary flow and 30,000 gpd assumed for infiltration.

To connect Area 18 to the South Londonderry sewer system, it appears possible to extend the existing interceptor sewer on Londonderry Road to serve Area 18 from its southwest corner. It is estimated that an extension of approximately 1,400 LF of 12-inch pipe within the Town's rights-of-way would be needed to reach the property of Area 18. The estimated cost for this sewer extension is $851,000.

This interceptor continues downstream to the Action Boulevard Pump Station, that pumps directly to the Derry treatment plant. The developer has hired an engineering consultant to evaluate the existing interceptor sewer from the Action Boulevard Pump Station to the end of the pipe on Londonderry Road so the capacity of the entire interceptor can be determined and identify any sections that would need to be upgraded to provide the necessary capacity for Area 18. Based on the consultant's evaluation, the existing sections of 10-inch interceptor would need to be replaced with 12-inch pipe and some of the existing 12-inch interceptor would need to be replaced with 15-inch pipe. A total of approximately 2,216 LF of pipe would need to be replaced. The total estimated project cost for this replacement is $1,347,000. Based on previous agreements, the developer would pay for the sewer extension in the Town rights-of-way and upgrades to the existing interceptor and receive credit for those costs when being assessed access fees within the development.

The Developer would be responsible for the cost to construct the sewer collection system within the development, which would remain private after construction and the Town would not participate in the funding of these facilities. Actual site development plans will determine the sewer layout in the site.

3.4.2.16 Area 18B – Woodmont Common West (Map 7)

Development of Area 18B was not envisioned in the 2005 Wastewater Facilities Plan. Area 18B represents the Woodmont Common development area to the west of I-93 and north of Route 102. This area is projected to develop over time, with some of the area already constructed and contributing to existing flows and additional areas currently under construction. The area consists of approximately 387 acres of potential mixed-use development. The projected future sanitary flow from this area, updated by the developer in February 2022, is approximately 441,209 gpd, and the infiltration allowance is 48,000 gpd, for a total average daily flow of approximately 489,209 gpd. It should be noted that the developer had projected residential flow based on 3-bedroom units with an average daily flow of 150 gpd/bedroom for a total of 450 gpd/unit. The unit flow of 150 gpd/bedroom is used when designing a septic system and is overly conservative to protect the integrity of a subsurface disposal field. For residential units, the sanitary flow projection was modified to 210 gpd/unit to be consistent with residential flow projections used throughout this Facilities Plan. Based on this modification, the

sanitary flow is approximately 362,969 gpd and using the same infiltration estimate, the total flow carried in this plan is approximately 410,969 gpd.

For the reasons discussed under Area 18 relative to capacity for treatment in Derry and taking into account other projected flows in South Londonderry, there is not enough capacity at the Derry treatment plant for all of the projected flows from Area 18B. The Town has met several times with the developer to determine how much of the wastewater generated can be directed to Derry for treatment. Based on flows already permitted in the development and projected flows presented in February 2022, it is estimated that approximately 127,584 gpd of additional sanitary flow and 16,900 gpd of infiltration may be directed to the Derry treatment plant, a total of approximately 144,484 gpd of additional flow. It is important to note that the Town allowed flow from some of the current development to be directed to Derry, and in a written agreement with the Town, the developer committed to redirect this flow in the future to the proposed pump station discussed below, so the wastewater can be pumped to Manchester for treatment.

For the remainder of Area 18B (beyond the amount that can flow to Derry), the flow generated in the remaining area is estimated to be approximately 235,385 gpd of sanitary flow and 31,100 of infiltration for a total of approximately 266,485 gpd. This flow will need to be pumped to the North Londonderry collection system for treatment in Manchester. To transport the flows to North Londonderry, a pump station is required on Pillsbury Road in Area 18B with a force main along Hardy Road to a new extension of the interceptor gravity sewer on Bancroft Road. The route to this connection point could include approximately 7,500 LF of 10-inch to 12-inch force main and approximately 1,850 LF of 12-inch or 15-inch gravity sewer.

The pump station on Pillsbury Road in Area 18B and the force main and gravity sewer to Bancroft Road is estimated to cost $7,900,000. The Town is scheduled to receive federal funds in the amount of $4 million for a portion of the project. The Town has initiated design of the pump station, force main and interceptor sewer. The Town and Developer are working toward a plan for funding the remaining $3,900,000, beyond the federal grant. The Town plans to take ownership of this pump station, force main and gravity sewer needed to connect to the Town's existing sewer system on Bancroft Road. This cost is included in the access fee calculation.

The conceptual layout of private sewers within the development provided by the Developer in documents prepared by CMA Engineers in April 2013 and referenced in the TF Moran Sewer Flow Analysis dated August 12, 2016, included several pump stations, force mains and gravity sewer pipes. The concept will need to be revised to direct flow to the proposed pump station on Pillsbury Road. The Developer would be responsible for the cost to construct the sewer collection system within the development upstream of the pump station on Pillsbury Road, which would remain private after construction and the Town would not participate in the funding of these private facilities.

3.4.2.17 Area 19 – Hannaford Plaza/Gilcreast Road (Map 9)

A portion of the area around the Hannaford building has been developed, and there is land on both the east and west side of Gilcreast Road that could be developed in the future. The Town has received some preliminary information from developers that may be interested in developing high density residential projects in this area. A potential project on the east side of Gilcreast Road could have up to 67 residential units and a project on the west side of Gilcreast Road could have up to 96 residential units. In addition, there are approximately 6 acres of land that could be used for commercial development adjacent to the Hannaford building, The projected sanitary flow from this area is 38,430 gpd, and the infiltration allowance is 900 gpd, for a total average daily flow of 39,330 gpd. Wastewater from this area will flow to the Charleston Avenue Pump Station and on to Derry.

This area is already served by a Town interceptor sewer on Gilcreast Road, and it is assumed that any extensions required to serve the remaining lots will be the responsibility of the developer.

3.4.2.18 Area 20 – Mammoth Road North Extension (Map 4)

This area includes 14 acres of developable commercial area on both sides of Mammoth Road north of the intersection of Grenier Field Road. The projected sanitary flow from this area is 9,800 gpd, and the infiltration allowance is 2,400 gpd, for a total average daily flow of 11,900 gpd. The wastewater from this area would flow to the Plaza 28 Pump Station and then to Manchester.

Sewer to serve this area was designed as part of "Contract 5 – North Londonderry" in 1986 but was not constructed due to funding limitations. As designed, the sewer extension is 1,700 LF of an 8-inch diameter pipe to be installed at depths up to 25 feet. At this time, the Town has no plans to participate in the funding of this potential collector sewer extension.

3.4.2.19 Area 20A – Grenier Field Road and Mammoth Road (Map 4)

Area 20A is bordered by Grenier Field Road and Mammoth Road and consists of 16 acres of developable land. This growth area has been added since the 2005 Facilities Plan, and the Town has indicated that high density residential development could occur in the location with 43 new residential units. The projected sanitary flow from 43 residential units is 9,030 gpd, and the infiltration allowance is 2,400 gpd, for a total average daily flow of 11,430 gpd. The wastewater from this area could either flow to the Plaza 28 Pump Station or be pumped to the interceptor sewer on Grenier Field Road and then to Manchester.

This area would be serviced by the existing Town sewer on Mammoth Road or on Grenier Field Road and any costs to connect would be the responsibility of the Developer.

3.4.2.20 Area 20B – Rockingham Road and Page Road (Map 4)

Area 20B represents a proposed residential development presented to the Town in 2022 located at the corner of Rockingham Road and Page Road. The development includes two buildings with a total of 40 residential units. The projected flow from 40 residential units is 8,400 gpd. The plan presented by the developer shows a pump station to serve the building that would pump to either the existing sewer on Mammoth Road that would flow to the Plaza 28 Pump Station, or the existing sewer Grenier Field and then on to Manchester. There is no infiltration associated with the private pump station and force main.

3.4.2.21 Area 21 – Wentworth Avenue (Map 2)

Area 21 includes three lots, two of which have already been developed as LYMO Construction and UTS, with flows included in the existing flows. The projected sanitary flow for commercial development from the remaining 11 acres is 7,700 gpd, and the infiltration allowance is 1,650 gpd, for a total average daily flow of 9,350gpd.

There is an existing sewer on Wentworth Avenue. The cost to provide sewer service to the remaining lot will be the responsibility of the developer.

3.4.2.22 Area 22 – Lorden Commons (Map 10)

Area 22 was not included in the 2005 Facilities Plan, but development of this area has already begun with the installation of a private sewer, including a private pump station. The Lorden Commons development consists of multiple phases covering 211 developable acres along Old Derry Road. Phase 1 of the project has been completed

and is contributing to existing flows. Based on plans for Phase 2 through 4 presented to the Town in 2016, an additional 83 residential units could be added with a sanitary flow of 17,430 gpd. Based on the plans and calculation presented by the developer, an infiltration allowance of 4,000 gpd is carried, for a total average daily flow of 21,430 gpd.

The developer has constructed the private sewer and pump station to serve this development. The private sewer collects to the existing Town sewer on Liberty Drive.

3.4.2.23 Area 23 – Wallace Farms Phase 1 (Map 5)

Area 23 includes the proposed Wallace Farms, Phase 1 development and consists of 25 acres of residential development with a total permitted flow of 45,080 gpd. Phase 1 includes 10 proposed multi-unit building, most of which are constructed, connected to the sewer and included in the existing flows. The projected flow from the remaining buildings is 13,524 gpd. The infiltration allowance is 1,800 gpd, for a total average daily flow of 15,324 gpd.

The development is connected to the Town sewer on Perkins Road. Construction of the sewer within the development is the responsibility of the developer.

3.4.2.24 Area 23A – Wallace Farms Phase 2 (Map 5)

Area 23A includes Phase 2 of the Wallace Farms development on 21 acres. Current zoning allows only single-family homes in this area, so it is assumed that 20 houses could be constructed in this area. The projected sanitary flow is 4,200 gpd with an infiltration allowance of 3,150 gpd, for a total average daily flow of 7,350 gpd.

It is assumed that the developer will extend sewer from the Phase 1 project and the cost would be the responsibility of the developer.

3.4.2.25 Area A - Century Village (Map 9)

Area A is an existing high-density residential development on Winding Pond Road known as Century Village. The existing condominiums are currently served by cluster subsurface disposal systems owned and operated by the condominium association. The association includes 344 housing units on 46 acres of land. The Town was able to obtain actual water use records from 2019, 2020, and 2021 for the development from the water company operating the private water system. The average daily flow per unit varied from 116 gpd to 123 gpd/unit, so for flow projections, 125 gpd/unit is used. The projected sanitary flow from this area is 43,000 gpd, and the infiltration allowance is 6,900 gpd, for a total average daily flow of 49,900 gpd. Wastewater from this area would flow to the Tokanel Drive Pump Station, then to the Charleston Avenue Pump Station where it would be pumped to Derry.

The residents of Century Village have approached the Town to request the extension of Town sewer to serve their development, because the subsurface disposal systems have experienced problems that result in expensive repairs. Also, subsurface disposal systems for high-density housing developments such as this pose a potential environmental threat to the groundwater and surface water in the area. In 2001, a conceptual design to provide sewer service for Century Village was completed. The plan included 3,700 LF of mainline sewer within the Town rights-of-way, and 7500 LF of 8-inch sewer, four small pump stations, and 600 LF of force main on private property. The interceptor sewer in the Town right-of-way would be an extension of the South Londonderry Interceptor that was installed to Winding Pond Road in 2019. The estimated cost to extend the interceptor 3,700 LF within Area A is $2,000,000. The Town may participate in the funding of this public portion of the interceptor sewer in Area A. The

installation of the sewer and pump stations on private property would be the responsibility of the Homeowner's Association.

3.4.2.26 Area B - South Londonderry Interceptor North of Route 102 (Map 9)

Area B is a portion of the service area that could connect to the South Londonderry Interceptor that was installed in 2019. Area B includes land on the north side of Route 102, including the Apple Tree Mall area and Buttrick Road up to the high point near Gardner Circle. Several parcels in the Apple Tree Mall area have already connected to the sewer and contributing to existing flows. The area includes approximately 70 acres of commercial property yet to connect to the sewer and 58 housing units, encompassing a total of approximately 110 acres. Of the 58 housing units, 40 are located in an existing elderly condominium development called Buttrick Village. Actual water use records were obtained for Buttrick Village, indicating that average daily flow is approximately 70 gpd/unit, so that is used in the flow projections. The projected sanitary flow from this area is 55,580 gpd, and the infiltration allowance is 16,500 gpd, for a total average daily flow of 72,080 gpd.

Wastewater from this area would flow to the Tokanel Drive Pump Station, then to the Charleston Avenue Pump Station where it is pumped to Derry. Additional collector sewer would be needed to serve the remainder of the area, and it is assumed that the Town would not participate in the funding of this portion of the sewer.

3.4.2.27 Area C - South Londonderry Sewer South of Route 102 and Mammoth Road Area (Map 9)

Area C, as described in 2005, has now been reduced in size due to limitations in available capacity at the Derry Treatment Plant and the new limit of flow to Derry of 500,000 gpd plus the additional 250,000 gpd to be dedicated to Area 18. Also, to keep within the flow limit at Derry, the area has been divided into two sections. One section includes the area south of Route 102 from McAllister Drive to Horizon Drive that could be served by gravity from the existing South Londonderry Interceptor directing the flow to Derry. This portion of Area C includes approximately 16 acres of commercial area and 19 residential homes. The projected sanitary flow from this area is 15,190 gpd, and the infiltration allowance is 7,500 gpd, for a total average daily flow of 22,690 gpd. It is assumed that collector sewers needed to serve this area will be paid for by the property owners or developers.

The second portion of Area C includes the commercial area near the intersection of Route 102 and Mammoth Road identified as the South Village Suburban Corridor Retrofit in the 2013 Master Plan, as well as the high-density housing in the Boulder Drive and Sandstone Circle area. Originally, this area was to be served by a proposed interceptor that would direct the flow to the Tokanel Drive Pump Station and then on to Derry for treatment. That plan is no longer feasible as it would result in flows exceeding the 500,000 gpd limit at Derry. Flow from this portion of Area C would need to be pumped to the Mammoth Road Interceptor to transport the flow to Manchester.

This portion of Area C would serve approximately 132 residential units and 94 acres of commercial area. The projected sanitary flow from this area is 93,520 gpd, and the infiltration allowance is 21,000 gpd, for a total average daily flow of 114,520 gpd. To connect this area to the existing Mammoth Road Interceptor, a pump station somewhere in the area of Crosby Lane is required with a force main and possibly some gravity sewer to the existing interceptor sewer behind the High School and Moose Hill Kindergarten. The exact location of the pump station and force main/gravity sewer route would need to be determined at the preliminary design phase, which is not anticipated in the near future. To estimate an order of magnitude cost for the purpose of this plan, the project could include a pump station with a pumping capacity of approximately 400 gpm and approximately 12,000 LF of force main and gravity sewer pipe. The estimated cost of these facilities could range from $10 million to $12 million, and that does not include gravity sewer in the Area C to the proposed pump station. It is not anticipated

that the Town would undertake this project in the near future, so the costs are not included in access fee calculations. The flows are included in the overall future flow projections to reserve flow in Manchester and impacted pump stations should this area develop and connect to public sewer in the future.

3.4.2.28 Area F (Map 8)

In the 2005 Plan, Area F included existing low-density residential neighborhoods in the vicinity of the existing Mammoth Road Interceptor. As discussed under Areas B1 and E, it is not the intention of the Town to provide sewer to existing neighborhoods, where the lot sizes are 1-acre or larger and there is adequate space to accommodate replacement subsurface disposal systems. Typically, it is more cost effective to replace on-lot subsurface disposal system in low-density neighborhoods compared to installing public sewer.

Area F also includes the areas identified as the Town Center Recreational Village and Town Center Common in the 2013 Master Plan. The boundaries of these areas are only loosely described in the Master Plan, and it is assumed the total area is approximately 100 acres. The Town recently put 41 acres in conservation, leaving 59 acres for development. The Town Planning Department estimates that as many as 60 additional residential units could be added in the Town Center Recreational Village and Town Center Common areas. The Master Plan indicates that this Town Center area be served by public sewer when it develops. The projected sanitary flow from this area is 12,600 gpd, and the infiltration allowance is 8,850 gpd, for a total average daily flow of 21,450 gpd.

Wastewater from this area would connect to the Town sewer in the area of the Town office, and flow to the Mammoth Road Pump Station, which in turn pumps to the Plaza 28 Pump Station and finally to Manchester. The Town does not anticipate the development of this area in the next 10 years, but the flow projections are included to reserve flow in Manchester and impacted pump stations should this area develop and connect to public sewer in the future. It is assumed that developers in the area to be served would pay for the sewer extensions required.

3.4.2.29 Area H – North Village Artisan District (Map 4)

Area H is an area of new infill growth identified in the 2013 Master Plan and includes existing low-density residential neighborhoods in the vicinity of the Rockingham Road and Mammoth Road intersection. This area encompasses approximately 184 acres, and the area is already served by existing Town sewer and the Plaza 28 Pump Station. In discussions with Town staff, it was determined that infill growth could include 100 residential units and 50,000 square feet of commercial buildings. The projected total average daily flow from this potential infill growth is 26,000 gpd. The area is already served by existing sewers, but if any extensions are needed, the developer would be responsible for the cost.

3.5 Flows Projections Summary

The calculations for the flow projections described above for each growth area are included in **Appendix B**. The flow projections are summarized in this section, first by the overall projected flows to Manchester and Derry, and then by pump station service area so the impact of future flows can be evaluated in terms of impact on existing facilities.

3.5.1 Overall Flow Projections

The additional projected Average Daily Flow (ADF) to Manchester is 1,437,534 gpd, and the additional projected ADF to Derry is 595,384 gpd. The future ADF to each treatment facility, assuming build-out of all the identified growth areas, is derived by adding the projected flows to the existing flows discussed in Section 2. The estimated future ADFs are summarized below.

Table 3-1 Future Average Daily Flows

Manchester	
Current Non-GRE High Monthly Avg.	1,370,000 gpd
GRE Permit (Annual Avg.)	858,000 gpd
Projected Increase (ADF)	1,437,534 gpd
Future ADF	3,665,534 gpd (3.67 mgd)
Industrial Users – Max Month	
Current ADF	151,630 gpd
Projected Increase (ADF)	595,384 gpd
Future ADF	747,014 gpd

3.5.2 Flow Projections by Pump Station Service Area

A table included in **Appendix B** summarizes the future flow projections categorized by pump station service area and the LMS service area, to allow an evaluation of the impact to each of the existing pump stations and interceptors. The average daily flows and the estimated peak flows are provided for each pump station service area. The projected increase in peak flow to each pump station has been added to the estimated current peak flow, as discussed in Section 2, to determine the projected peak flow to each station for the future, assuming full build-out of the growth areas. These projected peak flows are summarized in the table below. As indicated in the table, all the Town's pump stations have the pumping capacity for the projected future flows.

Table 3-2 Future Peak Flows To Pump Stations

Manchester	
Plaza 28 Pump Station	
Estimated Current Peak Flow	967 gpm
Projected Peak Flow Rate	1,410 gpm
Estimated Future Peak Flow Rate	2,377 gpm
Existing Capacity	2,900 gpm
Mammoth Road Pump Station	
Estimated Current Peak Flow	967 gpm
Projected Peak Flow Rate	1,410 gpm
Estimated Future Peak Flow Rate	2,377 gpm
Existing Capacity	2,900 gpm
Webb Drive Pump Station	
Estimated Current Peak Flow	4 gpm
Projected Peak Flow Rate	284 gpm
Estimated Future Peak Flow Rate	288 gpm
Existing Capacity	485 gpm

Derry	
Tokanel Drive Pump Station	
Estimated Current Peak Flow	140 gpm
Projected Peak Flow Rate	320 gpm
Estimated Future Peak Flow Rate	460 gpm
Existing Capacity	1250 gpm
Charleston Avenue Pump Station	
Estimated Current Peak Flow	302 gpm
Projected Peak Flow Rate	760 gpm
Estimated Future Peak Flow Rate	1062 gpm
Existing Capacity	2,600 gpm
Action Boulevard Pump Station	
Estimated Current Peak Flow	36 gpm
Projected Peak Flow Rate	630 gpm
Estimated Future Peak Flow Rate	666 gpm
Existing Capacity	675 gpm

The impact of future flows on existing pump stations and interceptors and required upgrades to accommodate future flows are discussed in Section 4 of this report. The flows outlined in the above table summarize the future flows to the Town owned pump stations. Peak flows are also projected for the Mill Pond development that flows directly to Manchester. The projected peak flows are estimated to be 790 gpm.

3.6 Loads Projections Summary

The assumptions for loading concentrations of projected flows for BOD and TSS are discussed in Section 3.3.2. A BOD concentration of 340 mg/l and TSS concentration of 428 mg/l will be applied to the sanitary portion of projected flows. Loading rates will not be applied to the infiltration, which is assumed to have no contribution to the BOD and TSS. If future industrial users propose to discharge high strength waste, it is recommended that the Town require a pretreatment program for those users to limit the strength of the waste discharged to the sewer system. Pretreatment provisions are included in the existing Sewer Use Ordinance.

The wastewater loading projections for future flows to Manchester and Derry are summarized in a table in **Appendix B** and the results of the projections are provided below:

- Manchester
  - Projected increase in BOD loading = 3,520 lb/day
  - Projected increase in TSS loading = 4,431 lb/day
- Derry
  - Projected increase in BOD loading = 1,455 lb/day
  - Projected increase in TSS loading = 1,832 lb/day

The loadings projected for future users have been added to the current loadings as discussed in Section 2, and the future projected loads are summarized in Table 3-3.

Table 3-3 Future Wastewater Loads

	Annual Average (lb/day)	High Monthly Average (lb/day)
Manchester		
Current BOD	2,703	4,634
Projected Additional BOD	3,520	3,520
Total Future BOD	**6,223**	**8,154**
Current Limit:	9,571	NA
Current TSS	2,751	6,366
Projected Additional TSS	4,431	4,431
Total Future TSS	**7,182**	**10,797**
Current Limit:	9,340	NA
Derry		
Estimated Current BOD	430	NA
Projected Additional BOD	1,455	NA
Total Future BOD	**1,885**	**NA**
Current Limit:	1,877 [1]	NA
Estimated Current TSS	541	NA
Projected Additional TSS	1,832	NA
Total Future TSS	**2,373**	**NA**
Current Limit:	2,314 (1)	NA

[1] IMA with Derry lists only concentration limits for BOD (300 mg/l) and TSS (370 mg/l), so lb/day are based on these concentrations and a flow of 0.75 mgd.

3.7 Septage

All the septage generated in Londonderry is currently disposed of at the Manchester Treatment Plant. Currently, Manchester does not limit the septage received from Londonderry. Personnel in Manchester were contacted to see if there are any concerns with future septage quantities from Londonderry, and they reported that there are no plans to limit future septage from Londonderry or any of the other area communities. The current IMA with Manchester indicates that if the City were to limit septage from Londonderry, it would not limit it to less than 225,000 gallons per month, which translates to 2,700,000 gallons per year.

Section 4 Upgrades and Cost Estimates

4.1 General

This section of the report identifies and describes required upgrades to existing wastewater facilities and the need for new facilities to meet the future wastewater needs as determined in Section 3. Cost estimates are also provided for the required upgrades and improvements. Estimated costs for interceptor extensions that may be funded with Town's participation are included in the growth area descriptions in Section 3. Table 4-3 at the end of this section summarizes all the facilities along with the total estimated costs that may be funded with Town's participation.

4.2 Treatment Upgrades

Based on the flows and loads projections, summarized in Section 3, the Town has adequate capacity at the Manchester Treatment Facility. The current flow limit to Derry is 500,000 gpd. In 2023, the Town began discussions with Derry to increase Londonderry's flow limit by an additional 250,000 gpd to specifically serve the area around the new Exit 4A, described as Area 18 – Woodmont East in this Facilities Plan. This plan assumes that this amendment will be executed, bringing the total Londonderry flow limit for discharge to Derry to 750,000 gpd. Some of the projected flows in the South Londonderry area will need to be directed to the North Londonderry collection system for treatment in Manchester to keep future flows to Derry under the 750,000 gpd limit.

4.2.1 Manchester

Table 4-1 below summarizes the projected flows and loads to Manchester with full build-out of the identified growth areas, and also indicates the current limits established in the Inter-municipal Agreement

Table 4-1 Summary of Projected Flows and Loads to Manchester

	Average Daily Flow (MGD)	BOD (lb/day)	Average Daily Flow (MGD)
Projected Future Flow	3.67	6,223	7,182
Current Limits	4.0	9,571	9,340

Based on the projections outlined in this Facilities Plan and the revised limits established in January 2013 amendment to the IMA, the Town of Londonderry has adequate flow and load capacity in Manchester.

The 2013 IMA amendment also established how the Manchester Treatment Facility Upgrade costs would be allocated to Londonderry based on Londonderry's flow, BOD and TSS limits as a percentage of the overall flow and loads to the plant. Londonderry's portion of the upgrade costs are based on percentages defined in the IMA:

- 9.37% of capital share for flow;
- 11.24% of capital share for BOD; and
- 9.87% of capital share for TSS.

Londonderry's overall share of the Upgrade costs is the average of these percentages, or 10.16%. Based on an overall estimated plant upgrade cost of $77,500,000, Londonderry's share is estimated at $7,874,000 as shown in Appendix C. It is estimated that Londonderry's share of the costs including interest is approximately $10,000,000.

Manchester plans to assess the costs of the upgrade to Londonderry annually as a percentage of the total annual bond payments made by Manchester.

To cover the Town's share of the Manchester Upgrade costs, it is assumed that 100% of the cost will be paid from sewer access fees.

4.2.2 Derry

Table 4-2 below summarizes the projected flows and loads to Derry with full build-out of the identified growth areas and also indicates the current limits established in the Inter-Municipal Agreement.

Table 4-2 Summary of Projected Flows and Loads to Derry

	Average Daily Flow (MGD)	BOD (lb/day)	Average Daily Flow (MGD)
Projected Future Flow	747,014	1,885	2,373
Current Limits	750,000[1]	1,877[2]	2,314[2]

[1] It is assumed that flow limit will be updated to 750,000 gpd; 250,000 GPD of which is allocated specifically for Area 18 (East Side) only

[2] IMA with Derry lists only concentration limits for BOD (300 mg/l) and TSS (370 mg/l)

4.2.2.1 Cost Estimate for Additional Capacity in Derry

From the original IMA, Londonderry had obtained 200,000 gpd of capacity from Derry. The 2021 IMA increased the allowable capacity to 500,000 and defines how Londonderry will purchase the remaining 300,000 gpd of capacity. Starting in 2021, Londonderry will pay for an additional 25,000 gpd of capacity each year at Derry's prevailing wastewater accessibility fee for 12 years to meet the maximum allocation of 500,000 gpd. To date, three payments have been made for the years 2021, 2022, and 2023, leaving 9 additional annual payments. If the average flow from Londonderry exceeds the current allocation in any given year, Londonderry will pay for the additional allocation based on actual average flow.

In 2023, the Town began discussions with Derry to increase Londonderry's flow limit by an additional 250,000 gpd to specifically serve the area around the new Exit 4A, described as Area 18 – Woodmont East in this Facilities Plan. This plan assumes that this amendment will be executed, bringing the total Londonderry flow limit for discharge to Derry to 750,000 gpd. This would require an additional 10 annual payments for the additional 250,000 gpd of capacity.

The calculations for the cost to increase the flow to Derry are included in **Appendix C**. The current accessibility fee for Derry is $3.76/gallon per day, and the annual payment for 25,000 gpd is $94,000. Over 19 years, the total payment is estimated to be $2,101,000. There is a potential the accessibility fee may increase, thus raising the total payment amount. It is assumed 100% of this cost will be paid from sewer access fees.

4.3 Pump Station Upgrades

In this section the impact of projected flows on each of the existing pump stations are summarized and the costs for required upgrades, if necessary, are estimated. The private pump station serving the Mill Pond development has been abandoned and the development has connected to the newly extended interceptor sewer from

Manchester. The Town took over the sewer system in the Mill Pond development, effective January 1, 2023. The Town is currently considering taking over the pump station and existing sewer on Jack's Bridge Road, but there are no significant short/mid-term upgrades of the station anticipated to be performed by the Town.

For any other existing private pump stations, it is assumed that any upgrades required to accommodate projected flow in the private development will be made by the developer.

4.3.1 Plaza 28 Pump Station

The original Plaza 28 Pump Station was replaced with a new pump station and new force main that went on-line in 2019. The current capacity of the station is 2,900 gpm with two of the three pumps running. The projected peak flow with build-out of the identified growth areas is approximately 2,377 gpm, so no capacity upgrades to the station are necessary.

4.3.2 Mammoth Road Pump Station

The design capacity of the Mammoth Road Pump Station is 500 gpm. The projected peak flow to this station is estimated to be 369 gpm with full build-out of the identified growth areas. There is no need to upgrade the pump station for capacity reasons. The Town installed a new pump control panel with VFDs to run the pumps in 2019 and no additional significant upgrades are planned.

4.3.3 Webb Drive Pump Station

Webb Drive Road Pump Station was completed and put on-line in 2017 and the capacity is 485 gpm. The projected peak flow to the station with full-build out of Area 15 is estimated at 288 gpm. There is no need to upgrade the pump station for capacity reasons.

4.3.4 Tokanel Drive Pump Station

The current capacity of the Tokanel Drive Pump Station is 1,250 gpm, although the structures and piping were sized to accommodate a pumping capacity of 1,700 gpm if necessary. The projected peak flow to this station is estimated to be 460 gpm with build-out of the identified growth areas. There is no need to upgrade the pump station for capacity reasons.

As flows have increased in the past few years, the pump run cycles have increased at the Tokanel Drive Pump Station. This station pumps directly into the Charleston Avenue Pump Station, so with a pumping rate of 1250 gpm, the short duration flow into the Charleston Avenue Pump Station exceeds the pumping capacity of the existing pumps at Charleston Avenue operating at the lower speed, 600 gpm. To help reduce the impact of the pumps from Tokanel Drive on downstream facilities, the Town installed variable frequency drives (VFDs) at Tokanel Drive in early 2022. VFDs allow the pumps at Tokanel Drive to run at lower speeds for longer periods of time, providing a lower flow rate into the Charleston Avenue Pump Station.

4.3.5 Charleston Avenue Pump Station

Prior to the controls upgrade described below, the pumping capacity of the Charleston Avenue Pump Station was 600 gpm with the pumps operating at the lower speed, and 2,600 gpm with the pumps at the higher speed setting. The current peak flow to the station is estimated to be approximately 302 gpm, although it is higher for short periods while the Tokanel Drive Pump Station is pumping. The projected peak flow with full build-out is 1,062 gpm. Also, the pump station was designed with adequate space for larger pumps to be installed if necessary in the future.

The Charleston Avenue Pump Station has been in operation for over 25 years and much of the equipment has recently been replaced or serviced. The Town has rebuilt both of the pumps within the past two years. These pumps have capacity well above the projected peak flow to the station. The pump controls were upgraded at the station in the summer of 2023, including new VFDs to allow the speed of the pumps to vary, and the Town replaced the heating systems in the station in late 2022. The Town also replaced the grinder on the influent channel in the summer of 2023. No additional upgrades are anticipated at this time.

4.3.6 Action Boulevard Pump Station

The original Action Boulevard Pump Station was replaced in 2008 with a new submersible pump station similar to the Tokanel Drive and Mammoth Road pump stations. The current capacity of the station is 675 gpm. It is assumed that wastewater generated in Area 18 will flow to the Action Boulevard Pump Station. The projected peak flow to the station is estimated at 666 gpm with full build out. There is no need to upgrade the pump station for capacity reasons and no other upgrades are planned at this time.

4.4 Existing Interceptor Reviews and Upgrades

The projected peak flows were reviewed relative to drainage areas and the capacities of existing interceptor sewers. The sections below outline those reviews and make recommendations relative to existing interceptor capacities.

4.4.1 Mammoth Road Interceptor

In the 2005 Plan, it was indicated that a section of 10-inch diameter sewer on Mammoth Road running from Sanborn Road south towards Plaza 28 Pump Station does not have adequate capacity to carry the projected peak flow from growth areas 1, 5, 20, and 20A. This section of sewer is approximately 1,000 feet in length with depth ranging from 12 to 18 feet. A flow meter in this sewer measured a peak flow rate of 0.31 mgd during a 3.5-inch rain event in 2007. In 2017, a flow meter was installed just upstream of this section for approximately 2 weeks. During those two weeks, the average daily flow was approximately 0.05 mgd and the peak flow was measured at 0.16 mgd, which indicates a peaking factor of 3.2.

With the additional flow from the growth areas at a peaking factor of 3.2 added to the highest measured peak flow of 0.31 mgd, the peak flow could reach approximately 0.86 mgd. The capacity of the sections of 10-inch sewer is 0.85 mgd. Due to the depth of the sewer, it would be very expensive to replace. The replacement of this sewer is not recommended at this time, but it is recommended that flow meters be installed periodically to monitor the flow in the sewer to determine when a replacement is needed in the future. The Town has a protocol in place to require developers of land upstream of this section of sewer to install flow meters to measure current flows to this sewer and determine the impact from the projected flows for their development. If projected flows are expected to exceed the capacity of this 10-inch sewer, the developer will be required to replace the existing sewer with a 15-inch sewer.

4.4.2 Londonderry Road Interceptor

The existing interceptor on Londonderry Road begins as a 10-inch pipe on the upstream end and increases to a 12-inch pipe as it approaches Route 102. The wastewater from growth Area 18 – Woodmont Common East is expected to flow through this interceptor. The developer for Area 18 has hired an engineering consultant to evaluate the existing interceptor sewer from the Action Boulevard Pump Station to the end of the pipe on Londonderry Road so the capacity of the entire interceptor can be determined and identify any sections that would need to be upgraded to provide the necessary capacity for Area 18.

Based on the initial consultant's preliminary evaluation, the existing sections of 10-inch interceptor would need to be replaced with 12-inch pipe and some of the existing 12-inch interceptor would need to be replaced with 15-inch pipe. A total of approximately 2,216 LF of pipe would need to be replaced. The total estimated project cost for this replacement is $1,347,000. Based on previous agreements, the developer would pay for the sewer upgrades to the existing interceptor and receive credit for those costs when being assessed access fees within the development. The cost for these upgrades are not included in the access fee calculations.

4.4.3 Route 102 and Gilcreast Road Interceptor

The developer for Area 18B has replaced the sewer on Michels Way and Route 102 to Gilcreast Road with new 15-inch pipe. The 15-inch pipe connects to Existing MH-M-18, which has a 10-inch outlet pipe that crosses Route 102. Due to the 90-degree turn in the manhole and reduction from an inlet pipe of 15-inch to outlet pipe of 10-inch, the potential for surcharging (above the elevation of the crown of the outlet pipe) is expected at a certain peak flow rate. Modeling has determined that the peak flow rate resulting in this surcharging is 1.008 MGD and corresponding average daily flow (ADF) of 0.252 MGD. The NHDES will not allow permitting future flows above this ADF until the sewer crossing Route 102 and downstream sewer is replaced or another method of preventing the surcharging in MH-M-18 is achieved. The Town is coordinating with the developer of Area 18B and the NHDES on reviewing proposed flows to be added to this sewer. The flow limit to the Derry treatment plant, along with another potential flow restriction in the existing interceptor further downstream of the Route 102 crossing are also factors in how much flow from Area 18B can be transmitted to this sewer. At this time, the Town and developer are finalizing an alternative method of directing flow in excess of this maximum capacity to Manchester. As such, there are no current plans to replace this pipe crossing Route 102.

4.4.4 Mammoth Road Interceptor from Bancroft Road to Plaza 28 Pump Station

As discussed in Section 3, the amount of flow from Area 18B that can be transmitted to Derry is limited. To serve the remainder of Area 18B, the flow generated in the remaining area (266,485 gpd) will need to be pumped by the proposed Pillsbury Road Pump Station to the North Londonderry collection system for treatment in Manchester. The connection point to the North Londonderry system is the existing 15-inch interceptor sewer on Bancroft Road. To check the capacity of this interceptor from Bancroft Road to the Plaza 28 Pump Station, the projected peak flows from Areas F, 6, 18B, and Portion of Area C need to be added to the existing peak flow in the interceptor. In 2007, a flow meter was installed in this interceptor on Mammoth Road just upstream of the Plaza 28 Pump Station, and this meter measured a peak instantaneous flow of 0.25 mgd during a 3.5-inch rain event. Adding this peak flow to the projected peak flow from the areas listed above using a peaking factor of 3.5, the projected peak flow for this interceptor is approximately 1.59 mgd. The capacity of a 15-inch pipe at minimum slope is 1.62 mgd. If all the projected future flows are realized, it is possible the peak flow will reach the capacity of the existing interceptor. The flow projections in this Plan are conservative estimates and it is possible that the peak flow in this 15-inch sewer will never exceed the capacity of the existing pipe. The replacement of this sewer is not recommended at this time, but it is recommended that flow meters be installed periodically over the next 20 years to monitor flow and compare actual flows with projected flows as the upstream areas develop.

4.4.5 Rockingham Road Interceptor to Plaza 28 Pump Station

The existing interceptor on Rockingham Road transporting flow to the Plaza 28 Pump Station is a 15-inch pipe. To check the capacity of this interceptor, the projected peak flows from Areas 9, 17, 22, 23, and 23A need to be added to the existing peak flow in the interceptor. In 2013, a flow meter was installed in this interceptor on Rockingham Road, and this meter measured a peak instantaneous flow of 0.538 mgd on a day with a total daily flow of 0.25 mgd measured by the meter. Based on this data, the peaking factor of the existing conditions is 2.152.

Adding this peak flow of 0.538 mgd to the projected peak flow from the areas listed above using a peaking factor of 2.152, the projected peak flow for this interceptor is approximately 0.84 mgd. With a peaking factor of 4 for the future flows, the peak flow is approximately 1.07 mgd. The capacity of a 15-inch pipe at minimum slope is 1.62 mgd. The interceptor has adequate capacity for the projected future flows.

4.5 New Sewer Facilities to Serve Growth Areas

In Section 3, the identified growth areas were described with general information on how the area would be served by sewer. For some of the areas, sewer facilities are already in place to serve the undeveloped land. Where sewer extensions are required to serve the development area, it is assumed that in most cases the developer will be responsible to install the required sewer facilities meeting the Town sewer standards. However, the Town may participate in the funding of some of the sewer interceptor extensions to promote commercial and industrial development consistent with the Town's Master Plan. Areas where the Town may participate in the funding are summarized in this section.

4.5.1 Pettengill Road Commerce Park – Area 15

To service the remaining area of the Commerce Park area, it is estimated that an additional 3,800 LF of gravity interceptor sewer would be necessary. The total estimated cost for these interceptor facilities is $1,540,000. The Town may participate in the funding for these sewer interceptor facilities as part of the development in this commerce park, consistent with the Master Plan. This cost is included in the access fee calculation. This cost estimate does not include sewer within the potential remaining development area.

4.5.2 South Londonderry Interceptor – Area B (North of Route 102)

Area B is a portion of the service area that could connect to the South Londonderry Interceptor that was installed in 2019. Area B includes the Apple Tree Mall area as well as land on the north side of Route 102. Additional collector sewer would be needed to serve the remainder of the area, and it is assumed that the Town would not participate in the funding of this portion of the sewer.

4.5.3 Century Village – Area A

An extension of the South Londonderry Interceptor currently serving Area B could serve this development. Although the owners of the development would be responsible for the construction of sewer facilities on private property, the Town may participate in the funding of the interceptor sewer to be constructed in Town rights-of-way. The estimated cost to extend the interceptor 3,700 LF within Area A is $2,000,000. This cost is included in the access fee calculation.

4.5.4 South Londonderry - Area C (South of Route 102)

One section of Area C includes the area south of Route 102 from McAllister Drive to Horizon Drive that could be served by gravity from the existing South Londonderry Interceptor directing the flow to Derry. It is assumed that collector sewers needed to serve this area will be paid for by the property owners or developers.

The second portion of Area C includes the commercial area near the intersection of Route 102 and Mammoth Road identified as the South Village Suburban Corridor Retrofit in the 2013 Master Plan, as well as the high-density housing in the Boulder Drive and Sandstone Circle area. Originally proposed in the 2005 Wastewater Facilities Plan as being served by a new interceptor to carry flow to the Tokanel Road Pump Station, it is now apparent that there is not enough capacity at the Derry treatment plant to accommodate the flow from this area. As such, flow from

this portion of Area C would need to be pumped to the Mammoth Road Interceptor to transport the flow to Manchester.

To connect this area to the existing Mammoth Road Interceptor, a pump station somewhere in the area of Crosby Lane is required with a force main and possibly some gravity sewer to the existing interceptor sewer behind the High School and Moose Hill Kindergarten. The exact location of the pump station and force main/gravity sewer route would need to be determined at the preliminary design phase, which is not anticipated in the near future. To estimate an order of magnitude cost for the purpose of this plan, the project could include a pump station with a pumping capacity of approximately 400 gpm and approximately 12,000 LF of force main and gravity sewer pipe. The estimated cost these facilities could range from $10 million to $12 million, and that does not include gravity sewer in Area C to the proposed pump station or allocation of land for the pump station. It is not anticipated that the Town would undertake this project in the near future, so the costs are not included in access fee calculations.

4.5.5 Woodmont Common East – Area 18

To connect Area 18 to the South Londonderry sewer system, it appears possible to extend the existing interceptor sewer on Londonderry Road to serve Area 18 from its southwest corner. It is estimated that an extension of approximately 1,400 LF of 12-inch pipe within the Town's rights-of-way would be needed to reach the property of Area 18. The estimated cost for this sewer extension is $851,000. Based on previous agreements, the developer would pay for the sewer extension in the Town rights-of-way and receive credit for those costs when being assessed access fees within the development. The estimated cost for these upgrades are not included in the access fee calculations. The capacity of the existing Londonderry Road interceptor is discussed in Section 4.4.2 above.

The Developer would be responsible for the cost to construct the sewer collection system within the development, which would remain private after construction and the Town would not participate in the funding of these facilities.

4.5.6 Woodmont Common West– Area 18B

A portion of Area 18B is already developed and being served by the existing Town sewer in Michels Way to Gilcreast Road. The total projected flow from the anticipated full development of Area 18B exceeds the capacity of both the existing gravity sewer that flows to Derry, as well as the capacity available at the Derry WWTF for this section of Londonderry. The majority of the additional flow that can be connected to the existing gravity sewer that flows to Derry has been identified and allocated to proposed and ongoing development.

To serve the remainder of Area 18B, the flow will need to be pumped to the North Londonderry collection system for treatment in Manchester. To transport the flows to North Londonderry, a pump station is required on Pillsbury Road in Area 18B with a force main along Pillsbury Road and Hardy Road to a new extension of gravity sewer on Bancroft Road, connecting to the existing 15-inch sewer on Bancroft Road. The route to this connection point could include approximately 7,500 LF of 10-inch to 12-inch force main and approximately 1,850 LF of 12-inch or 15-inch gravity sewer.

The pump station on Pillsbury Road in Area 18B and the force main and gravity sewer to Bancroft Road is estimated to cost $7,900,000. The Town has initiated design of the pump station, force main and interceptor sewer. The Town and Developer are working toward a plan for funding the construction of the facilities, and the Town is scheduled to receive Federal funds in the amount of $4 million for a portion of the project. The Town plans to take ownership of this pump station, force main and gravity sewer needed to connect to the Town's existing sewer system on Bancroft Road. The Town and Developer are working toward a plan for funding the remaining $3,900,000, beyond

the federal grant. The Town plans to take ownership of this pump station, force main and gravity sewer needed to connect to the Town's existing sewer system on Bancroft Road. This cost is included in the access fee calculation. The Developer would be responsible for the cost to construct the sewer collection system within the development upstream of the pump station on Pillsbury Road, which would remain private after construction and the Town would not participate in the funding of these facilities. The developer currently plans to construct a private pump station to eventually redirect a portion of the flow entering the gravity sewer that flows to Derry to the above-described Town owned pump station on Pillsbury Road. The developer intends to re-allocate the wastewater capacity recovered as a result of the redirection to accommodate additional development in the vicinity of the existing gravity sewer that flows to Derry. This private pump station and associated forcemain would remain private after construction and the Town would not participate in the funding of these facilities.

4.6 Septage Disposal

Currently, Manchester does not limit the septage received from Londonderry or the other communities it serves. The City has no current plans to restrict septage from Londonderry, but if it must impose limits, it will not restrict below a quantity of 225,000 gallons/month. The cost for septage disposal is paid for by the property owner to their septage hauler, which is typical for most communities. It is recommended that this practice continue.

4.7 Costs of Recommended Wastewater Facilities

Table 4-3 summarizes the Town's share of costs for upgrades of existing wastewater facilities identified in Section 4, as well as costs for extension of interceptor sewers to promote commercial and industrial development consistent with the Town's Master Plan that the Town may participate in. The Town's funding for these projects may be with money collected through sewer access fees, property taxes, state/federal aid grants, developers, or a combination of these sources.

Table 4-3 Cost Summary of Recommended Wastewater Facilities

Treatment Related Costs		Town Participation
	Manchester WWTF Upgrades	$10,000,000
	Cost to buy from 275,000 to 750,000 gpd in Derry	$2,101,000
	Subtotal	$12,101,000
Growth Areas		Potential Town Participation
Area 1	Sanborn Road	$0
Area 3	Mill Pond #2	$0
Area 3A	Mill Pond #3	$0
Area 5	Page Road	$0
Area 6	Stonehenge Road	$0
Area 8	Hillside Drive	$0
Area 9	Jack's Bridge Road	$0
Area 10	Planeview Drive	$0
Area 11	Delta Drive	$0
Area 12	Aviation Park Drive	$0
Area 13	Webster Road	$0
Area 14	Akira Way	$0
Area 15	Pettengill Road Commerce Park	$1,540,000
Area 17	Vista Ridge Drive	$0
Area 18	Woodmont East	$0
Area 18B	Woodmont West	$3,900,000
Area 19	Hannaford Plaza	$0
Area 20	Mammoth Road North Extension	$0
Area 20A	Grenier Field Road	$0
Area 20B	Mammoth Rd and Page Rd	$0
Area 21	Wentworth Avenue	$0
Area 22	Lorden Commons	$0
Area 23	Wallace Farms, Phase 1	$0
Area 23A	Wallace Farms, Phase 2	$0
Area A	Century Village	$2,000,000
Area B	South Londonderry Interceptor North of Route 102	$0
Area C	Portion to Derry Only	$0
Area F	Town Rec. Village and Center Common[1]	$0
Area H	North Village Artisan District	$0
	Subtotal	$7,440,000
	Total	$19,541,000

[1] Assumes new residential flows in Area F will not be realized in the next 10 years.

Section 5 Recommendations and Cost Estimates

5.1 Summary of Recommended Facilities

The wastewater facilities that are required to serve the projected sewered growth in Londonderry are described in Section 4 of this report. Table 4-3 summarizes the facilities that may be funded with the Town's participation. Source of funding the Town's share of the costs are discussed later in this section.

The portions of the facilities which may be funded with Town participation are summarized in this section. The summary includes a brief description of each item, a recommended schedule or timing issues, and the estimated cost.

5.1.1 Londonderry's Share of the Manchester WWTF Upgrades

As stated in the Inter-municipal Agreement (IMA) with Manchester, Londonderry is responsible for its share of costs of future upgrades to the Manchester WWTF. The 2013 IMA amendment established how the Manchester Treatment Facility Upgrade costs would be allocated to Londonderry based on Londonderry's flow, BOD and TSS limits as a percentage of the overall flow and loads to the plant. Londonderry's overall share of the upgrade costs is the average of these percentages, or 10.16%. Based on an overall estimated plant upgrade cost of $77,500,000, Londonderry's share is estimated at $7,874,000, and including interest payments over the life of bonds, Londonderry's share of the total costs including interest is approximately $10,000,000. Manchester plans to assess the costs of the upgrade to Londonderry annually as a percentage of the total annual bond payments made by Manchester.

To cover the Town's share of the Manchester Upgrade costs, it is assumed that 100% of the cost will be paid from sewer access fees.

Estimated Cost to collect through Access Fees = $10.0 million

5.1.2 Derry Treatment Capacity

From the original IMA, Londonderry had obtained 200,000 gpd of capacity from Derry. The 2021 IMA defines how Londonderry will purchase the remaining 300,000 gpd of available capacity. Starting in 2021, Londonderry will pay for an additional 25,000 gpd of capacity each year at Derry's prevailing wastewater accessibility fee for 12 years to meet the maximum allocation of 500,000 gpd. To date, three payments have been made for the years 2021, 2022, and 2023, leaving 9 additional annual payments. If the average flow from Londonderry exceeds the current allocation in any given year, Londonderry will pay for the additional allocation for that year based on actual average flow.

In 2023, the Town began discussions with Derry to increase Londonderry's flow limit by an additional 250,000 gpd to specifically serve the area around the new Exit 4A, described as Area 18 – Woodmont East in this Facilities Plan. This plan assumes that this amendment will be executed, bringing the total Londonderry flow limit for discharge to Derry to 750,000 gpd. This would require an additional 10 annual payments for the additional 250,000 gpd of capacity.

The calculations for the cost to increase the flow to Derry are included in **Appendix C**. The current accessibility fee for Derry is $3.76/gallon per day, the annual payment for 25,000 gpd is $94,000. Over 19 years, the total payment

is a minimum of $2,101,000. There is a potential the accessibility Fee may increase, thus raising the total payment amount. It is assumed 100% of this cost will be paid from sewer access fees.

Estimated Cost = $2,101,000

5.1.3 Pettengill Road Commerce Park

To service the remaining area of the Pettengill Road Commerce Park (Area 15), consistent with the Town's Master Plan, it is estimated that an additional 3,800 LF of gravity interceptor sewer is necessary.

Estimated Cost = $1,540,000

5.1.4 Century Village – Area A

An extension of the South Londonderry Interceptor could serve this development. Although the owners of the development would be responsible for the construction of sewer facilities on private property, the Town may participate in the funding of the approximate 3,700 LF of interceptor sewer to be constructed in Town rights-of-way.

Estimated Cost = $2,000,000

5.1.5 Area 18 – Woodmont Common East

To connect Area 18 to the South Londonderry sewer system, it appears possible to extend the existing interceptor sewer on Londonderry Road to serve Area 18 from its southwest corner. It is estimated that an extension of approximately 1,400 LF of 12-inch pipe within the Town's rights-of-way would be needed to reach the property of Area 18. The estimated cost for this sewer extension is $851,000.

This interceptor continues downstream to the Action Boulevard Pump Station, that pumps directly to the Derry treatment plant. The developer has hired an engineering consultant to evaluate the existing interceptor sewer from the Action Boulevard Pump Station to the end of the pipe on Londonderry Road so the capacity of the entire interceptor can be determined and identify any sections that would need to be upgraded to provide the necessary capacity for Area 18. Based on the consultant's evaluation, the existing sections of 10-inch interceptor would need to be replaced with 12-inch pipe and some of the existing 12-inch interceptor would need to be replaced with 15-inch pipe. A total of approximately 2,216 LF of pipe would need to be replaced. The total estimated project cost for this replacement is $1,347,000.

Based on previous agreements, the developer would pay for the sewer extension in the Town rights-of-way and upgrades to the existing interceptor and receive credit for those costs when being assessed access fees within the development.

The Developer would be responsible for the cost to construct the sewer collection system within the development, which would remain private after construction and the Town would not participate in the funding of these facilities.

5.1.6 Area 18B – Woodmont Common West

A portion of Area 18B is already developed and being served by the existing Town sewer in Michels Way to Gilcreast Road. The total projected flow from the anticipated full development of Area 18B exceeds the capacity of both the existing gravity sewer that flows to Derry, as well as the capacity available at the Derry WWTF for this

section of Londonderry. The majority of the additional flow that can be connected to the existing gravity sewer that flows to Derry has been identified and allocated to proposed and ongoing development.

To serve the remainder of Area 18B, the flow will need to be pumped to the North Londonderry collection system for treatment in Manchester. To transport the flows to North Londonderry, a pump station is required on Pillsbury Road in Area 18B with a force main along Pillsbury Road and Hardy Road to a new extension of gravity sewer on Bancroft Road, connecting to the existing 15-inch sewer on Bancroft Road. The route to this connection point could include approximately 7,500 LF of 10-inch to 12-inch force main and approximately 1,850 LF of 12-inch or 15-inch gravity sewer. The cost of this project is estimated at $7,900,000 and the Town is scheduled to receive $4 million in federal grants to be put towards this project, leaving approximately $3,900,000 to be funded by the Town and Developer. Per previous agreements, costs contributed by the Developer for off-site sewer facilities are to be credited to the Developer in access fees as buildings connect to the sewer. The amount of $3,900,000 for this project is carried in calculations for the access fee.

The Developer would be responsible for the cost to construct the sewer collection system within the development upstream of the pump station on Pillsbury Road, which would remain private after construction and the Town would not participate in the funding of these facilities.

Estimated Cost = $3,900,000

5.2 Funding Options

There are several funding options for the recommended wastewater facilities outlined in this Facilities Plan. It is assumed that private developers will be responsible for much of the costs associated with sewers and pump stations to be constructed within the identified growth areas discussed in Sections 3 and 4. This is typically how sewers have been constructed in the recent residential, commercial and industrial development projects in Town. The sewers are constructed according to the Town's standards, and if the sewers are constructed in Town rights-of-ways or easements and have the potential to serve other areas of Town, they may be accepted as Town owned sewers at the successful completion of the project.

For the recommended wastewater facilities that may be funded with Town participation, the costs can be funded through loans, grants, developers, taxation, sewer access fees, or a combination of these sources. These funding sources are discussed in more detail below.

5.2.1 NHDES State Revolving Fund (SRF) Loans and State Aid Grants

The NHDES administers the Clean Water Sate Revolving Fund (CWSRF) loans for eligible wastewater collection and pumping facilities projects. These are below-market rate loans and there is potential for some loan forgiveness. Pre-applications to NHDES are required for each project and the projects are ranked to determine if the project will receive loan funds and the amount, if any, of principal forgiveness available for the project.

NHDES also administers the Wastewater State Aid Grant (SAG) program, often used in conjunction with CWSRF loans. If eligible, the state reimburses the municipality 20% to 30% of the eligible costs of the project. Both the CWSRF and SAG programs have certain requirements during the design and construction phase of the project that must be met in order to qualify for the programs.

5.2.2 Town Taxation

The Town's share of funding of the recommended facilities, or a portion of the funding, could come from Town Bonds or CWSRF loans with debt payments paid through Town Taxation. For a project to be bonded by the Town, voter approval at a Town Meeting would be required. In the past, the Town did vote to support the Mammoth Road Interceptor project with a Town Bond to be paid back through taxation and other sources, as that project served the Town's schools and other Town facilities on Mammoth Road.

5.2.3 Sewer Access Fees

A common source of funding for future capacity upgrades to sewers, pumping facilities and treatment facilities is to collect a one-time fee when a new user connects to the sewer. This is typically called a sewer access Fee. The Town currently has two separate rate structures for the sewer access fee, one for properties that are developed after the availability of Town sewer and one for existing units at the time Town sewer becomes available. The current rate schedules are included in **Appendix D**. The Town also has a Sewer Connection Fee of $200 to cover the cost of establishing a new sewer user for sewer billing and inspection of the new sewer service pipe.

Following the 2005 Wastewater Facilities Plan Update, the Town established the new sewer access fee schedule with the intention of using the collected access fees to fund all or a portion of the recommended facilities identified in that Plan. The sewer access fees collected have been used to fund projects recommended in the 2005 Plan, including the Webb Drive Pump Station, Plaza 28 Pump Station and force main replacement, and South Londonderry Interceptor sewer projects. Now with the information provided in this update of the Facilities Plan, the Town can adjust the access fee schedule as necessary based on the updated flow projections and cost estimates.

The access fee rate is based on the average daily design flow of the new user. For new residential users, the access fee is based on an average daily flow rate of 210 gallons per day (gpd) per residential unit, which was used for flow projections in this facilities plan. For commercial users, the daily flow is currently calculated using established design flows from Table 1008-1 Unit Design Flow Figures included in the Town of Londonderry's Sewer User Charge Ordinance. This is the table used for sizing septic systems and provides a consistent method of estimating flows from most commercial users. Industrial users that do not fit into any of the categories in the table will need to provide their own flow estimates to the Town for review and approval for use in calculating the access fee.

To estimate the access fee rate ($/gallon), the costs used are the cost of the facilities that may be funded with Town participation, as identified in this Plan (summarized in Table 4-3). The projected wastewater flows from future users, as summarized in Section 3, are used to estimate the source of revenue from the access fee. The flows used are only the sanitary flow projections. The infiltration flows are not used in the access fee calculation because they are not assigned to specific users and will not be a source of revenue.

Table 5-1 summarize the costs for the wastewater facilities identified in this Plan, the same as Table 4-3. A column in the tables indicates the projected sanitary flows for each growth area to be served.

Areas A, B, and C consist mostly of existing residential and commercial users, which would fall under the Existing Units category of the current access fee schedule. A separate calculation is made for potential revenue from those users under the current fee schedule. Exceptions include areas in B and C with new proposed development and some vacant land that would likely develop once sewer is installed. We have assumed that 25% of the projected

commercial flow in Areas B and C will be new units and 75% would fall under existing units, and that all the projected residential flow would fall under existing units.

Table 5-1 Access Fee Calculations

Treatment Related Costs		Town Participation	
	Manchester WWTF Upgrades	$10,000,000	
	Cost to buy from 275,000 to 750,000 gpd in Derry	$2,101,000	
	Subtotal	$12,101,000	
Growth Areas		**Potential Town Participation**	**Proposed ADF (gpd) excluding I/I**
Area 1	Sanborn Road	$0	45,780
Area 3	Mill Pond #2	$0	265,650
Area 3A	Mill Pond #3	$0	12,490
Area 5	Page Road	$0	63,693
Area 6	Stonehenge Road	$0	5,040
Area 8	Hillside Drive	$0	13,300
Area 9	Jack's Bridge Road	$0	60,247
Area 10	Planeview Drive	$0	13,300
Area 11	Delta Drive	$0	4,200
Area 12	Aviation Park Drive	$0	51,300
Area 13	Webster Road	$0	70,000
Area 14	Akira Way	$0	7,700
Area 15	Pettengill Road Commerce Park	$1,540,000	173,100
Area 17	Vista Ridge Drive	$0	31,290
Area 18	Woodmont East	$0	220,000
Area 18B	Woodmont West	$3,900,000	362,969
Area 19	Hannaford Plaza	$0	38,430
Area 20	Mammoth Road North Extension	$0	9,800

Growth Areas		Potential Town Participation	Proposed ADF (gpd) excluding I/I
Area 20A	Grenier Field Road	$0	9,030
Area 20B	Mammoth Rd and Page Rd	$0	8,400
Area 21	Wentworth Avenue	$0	7,700
Area 22	Lorden Commons	$0	17,430
Area 23	Wallace Farms, Phase 1	$0	13,524
Area 23A	Wallace Farms, Phase 2	$0	4,200
Area A	Century Village	$2,000,000	0
Area B	South Londonderry Interceptor North of Route 102	$0	12,250
Area C	Portion to Derry Only	$0	2,800
Area F	Town Rec. Village and Center Common[1]	$0	0
Area H	North Village Artisan District	$0	26,000
	Subtotal	$7,440,000	1,549,600
	Total	$19,541,000	
	Less Est. Revenue from Existing Units in Areas A, B, and C[2]	$571,700	
Remaining		$18,969,300	

[1] Assumes new residential flows in Area F will not be realized in the next 10 years.

[2] See Table 5-2 for additional information

Table 5-2 Estimated Revenue from Existing Units

		Residential		Commercial		
Growth Area		No. of Residential Units	Access Fee Unit Cost	Commercial Flow (gpd)	Access Fee Unit Cost	Access Fee
Area A	Century Village	344	$500	0	$8	$172,000
Area B	South Londonderry Interceptor North of Route 102	58	$500	36,750	$8	$323,000
Area C	Portion to Derry Only	19	$500	8,400	$8	$76,700
Total from Existing Units						$571,700

Table 5-3 Access Fee Calculation

Total Estimated Capital Costs with Town's Participation	$18,969,300
Projected increase in Sanitary Flow excluding I/I (gpd)	1,549,600
Access Fee - Cost per Gallon	$12.24
Access Fee for Typical House Based on 210 gpd per Residential Unit	$2,571

This calculation includes recovering the costs for the facilities that may be paid for with Town's participation through the access fee, consistent with the rationale for the establishment of the access fee in 2007. This calculation takes into consideration that existing units in Areas A, B, and C would pay under the Existing Unit category in the current access fee schedule. The newly calculated Access Fee rate compares favorably with the Access Fee rate of $16.51 per gallon and $3,467 per residential unit presented in the 2005 Wastewater Facilities Plan and currently in use. It is recommended that the Town review the calculations in this Wastewater Facilities Plan Update along with the updated Town's Master Plan to determine if the access fee would best promote the intentions of the Master Plan and be acceptable to sewer users and taxpayers in Town.

Appendix A
Mapping

Metering Station
PS Sewer Pump Station
Sewer Main - Londonderry
Sewer Main - Private
Sewer Force Main - Londonderry
Sewer Force Main - Private
Force Main and Gravity Sewer
Derry Force Main
Derry Treatment Plant

N

Manchester
Auburn
Bedford
Merrimack
Derry
Litchfield
Hudson
Windham
Nashua

Airport Rd
Raymond Wieczorek Dr
Commerce Ave
Industrial Dr
Grenier Field Rd
Page Rd
Harvey Rd
Pettengill Rd
Old Derry Rd
Auburn Rd
Perkins Rd
Rockingham Rd
Interstate 93
Litchfield Rd
Stonehenge Rd
High Range Rd
Shasta Dr
Hardy Rd
Ash St
Mammoth Rd
Pillsbury Rd
Gilcreast Rd
Wiley Hill Rd
Adams Rd
Nashua Rd
South Rd
Elwood Rd
West Rd
Route 102
Griffin Rd

Londonderry Metering Station
Webb Dr Pump Station
Plaza 28 Pump Station
Mammoth Road Pump Station
Dunmore Way Pump Station
Action Blvd Pump Station
Catesby Ln Pump Station
Derry Treatment Plant
Charleston Ave Pump Station
Tokanel Dr Pump Station

0 2,000 4,000 Feet

Londonderry, NH
Wastewater Facilities Plan Update
Existing Sewer System

PROJ NO:	DATE:	MAP:
13025A	3/25/2025	A

WRIGHT-PIERCE
Engineering a Better Environment

G:\M_W\GIS_Development\Projects\NH\Londonderry\13025A_Facilities\MXD\ExistingAnd_Potential_Sewer_Maps.aprx

Metering Station
PS Sewer Pump Station
PS Proposed Pump Station
Proposed Force Main
Proposed Interceptor
Sewer Main - Londonderry
Sewer Main - Private
Sewer Force Main - Londonderry
Sewer Force Main - Private
Force Main and Gravity Sewer
Derry Force Main
Derry Treatment Plant

N

Manchester
Auburn
Bedford
Merrimack
Derry
Litchfield
Hudson
Nashua
Windham

Londonderry Metering Station
Webb Dr Pump Station
Plaza 28 Pump Station
Mammoth Road Pump Station
Dunmore Way Pump Station
Action Blvd Pump Station
Catesby Ln Pump Station
Tokanel Dr Pump Station
Charleston Ave Pump Station
Derry Treatment Plant

Airport Rd
Raymond Wieczorek Dr
Commerce Ave
Industrial Dr
Pettengill Rd
Harvey Rd
Rockingham Rd
Grenier Field Rd
Page Rd
Auburn Rd
Old Derry Rd
Perkins Rd
Interstate 93
Litchfield Rd
Stonehenge Rd
Hardy Rd
High Range Rd
Shasta Dr
Wammoth Rd
Pillsbury Rd
Gilcreast Rd
Ash St
Wiley Hill Rd
Adams Rd
Nashua Rd
Route 102
Elwood Rd
West Rd
South Rd
Griffin Rd

1 3 3A 5 6 9 10 11 12 13 14 15 17 18 18B 19 20 20A 20B 21 22 23 23A 8
A B C F G H

0 2,000 4,000 Feet

Londonderry, NH
Wastewater Facilities Plan Update
Projected Growth Area

PROJ NO: 13025A | DATE: 3/25/2025 | MAP: B

WRIGHT-PIERCE Engineering a Better Environment

CLM W:\GIS Development\Projects\NH\Londonderry\13025A Facilities\MXDs\Existing And Potential Sewer Maps.aprx

- Sewer Manhole
- Pump Station
- Sewer Main - Londonderry
- Sewer Main - Private
- Sewer Force Main
- Development Identified in 2005 Facility Plan
- Development Identified After 2005
- Currently Being Developed or Permitted
- Conservation Parcels

Area 3A
Potential Expansion
into Auburn

3

P-1 P-2 P-3 P-4 P-5 P-6 P-7 P-8 P-9 P-10 P-11 P-12 P-13 P-14 P-15 P-16 P-17 P-18 P-19 P-20 P-21 P-22 P-23 P-24 P-25 P-26 P-27 P-28 P-29 P-30 P-31 P-32 P-33 P-34 P-35 P-36 P-37 P-38 P-39 P-40 P-41 P-42 P-43 P-44 P-45 P-46 P-47 P-48 P-49 P-50 P-51 P-52 P-53 P-54 P-55 P-56 P-60

Interstate 93

Old Derry Rd

Auburn Rd

N

0 200 400 800 Feet

Notes:
1. Projected Growth Areas were identified in meetings with town staff.
2. Parcel, Conservation and Sewer layers were provided by the Town of Londonderry.

Londonderry, NH

Wastewater Facilities Plan Update
Projected Growth Area

PROJ NO:	DATE:	MAP:
13025A	3/11/2025	1

WRIGHT-PIERCE
Engineering a Better Environment

O:\W Work Development\Projects\NH\Londonderry\13025A Facilities\MXD\Wastewater\Fig - Mapbook 2025 - NEW.aprx

- Sewer Manhole
- Pump Station
- Proposed Force Main
- Proposed Interceptor
- Sewer Main - Londonderry
- Sewer Main - Private
- Sewer Force Main
- Development Identified in 2005 Facility Plan
- Development Identified After 2005
- Currently Being Developed or Permitted
- Conservation Parcels

EFI

55 Pettengill Road
New Balance
Permitted flow 9,000 gpd

36 Industrial Drive
Auto Dealership
Permitted flow 500 gpd

Raymond Wieczorek Dr

Industrial Dr

Pettengill Rd

Bellevance

Prologis

FedEx

FW Webb

Webb Drive
Pump Station

5 Aviation Park Drive
Permitted Flow 3,000 gpd

Harvey Rd

UTS

Lymo

Litchfield Rd

High Range Rd

15

15

15

12

21

N

0 200 400 800 Feet

Notes:
1. Projected Growth Areas were identified in meetings with town staff.
2. Parcel, Conservation and Sewer layers were provided by the Town of Londonderry.

C:\M-W\GIS_Development\Projects\NH\Londonderry\13025A_Facilities\MXD\WastewaterPlan_Mapbook_2025_NEW.aprx

Londonderry, NH

Wastewater Facilities Plan Update
Projected Growth Area

PROJ NO: 13025A | DATE: 3/11/2025 | MAP: 2

WRIGHT-PIERCE
Engineering a Better Environment


Sewer Manhole
Pump Station
Proposed Force Main
Proposed Interceptor
Sewer Main - Londonderry
Sewer Main - Private
Sewer Force Main
Force Main and Gravity Sewer
Development Identified in 2005 Facility Plan
Development Identified After 2005
Currently Being Developed or Permitted
Conservation Parcels
Rockingham Rd
Page Rd
Grenier Field Rd
Harvey Rd
Pettengill Rd
13
13
14
10
11
N
0 200 400 800 Feet
Notes:
1. Projected Growth Areas were identified in meetings with town staff.
2. Parcel, Conservation and Sewer layers were provided by the Town of Londonderry.
Londonderry, NH
Wastewater Facilities Plan Update
Projected Growth Area
PROJ NO: 13025A
DATE: 3/11/2025
MAP: 3
WRIGHT-PIERCE
Engineering a Better Environment

- Sewer Manhole
- Pump Station
- Proposed Pump Station
- Proposed Force Main
- Proposed Interceptor
- Sewer Main - Londonderry
- Sewer Main - Private
- Sewer Force Main
- Force Main and Gravity Sewer
- Development Identified in 2005 Facility Plan
- Development Identified After 2005
- Currently Being Developed or Permitted
- Conservation Parcels

1
5
20B
20
20A
H
Rockingham Rd
Page Rd
Grenier Field Rd
Mammoth Rd
13 Page Road
Permitted Flow 2,793 gpd
Plaza 28
Pump Station
PS-281
PS-282
PS-283
PS-284
PS-285
N
0 200 400 800 Feet

Notes:
1. Projected Growth Areas were identified in meetings with town staff.
2. Parcel, Conservation and Sewer layers were provided by the Town of Londonderry.

Londonderry, NH

Wastewater Facilities Plan Update
Projected Growth Area

PROJ NO:	DATE:	MAP:
13025A	3/11/2025	4

WRIGHT-PIERCE
Engineering a Better Environment

O:\M W\GIS Development\Projects\NH\Londonderry\13025A Facilities\MXDs\WastewaterPlan_Map4_2025_REV.aprx


Sewer Manhole
Pump Station
Proposed Force Main
Proposed Interceptor
Sewer Main - Londonderry
Sewer Main - Private
Sewer Force Main - Londonderry
Sewer Force Main - Private
Development Identified in 2005 Facility Plan
Development Identified After 2005
Currently Being Developed or Permitted
Conservation Parcels
Auburn Rd
Interstate 93
Rockingham Rd
Perkins Rd
23A
23
17
9
Rhino
Permitted Flow 3,664 gpd
2V
Permitted Flow 1,878 gpd
Bauchman Towing
Permitted Flow 105 gpd
PPNE
0 200 400 800
Feet
Londonderry, NH
Wastewater Facilities Plan Update
Projected Growth Area
PROJ NO: 13025A
DATE: 3/11/2025
MAP: 5
WRIGHT-PIERCE
Engineering a Better Environment


Sewer Manhole
Pump Station
Proposed Force Main
Proposed Interceptor
Sewer Main - Londonderry
Sewer Main - Private
Sewer Force Main
Force Main and Gravity Sewer
Development Identified in 2005 Facility Plan
Development Identified After 2005
Currently Being Developed or Permitted
Conservation Parcels
Hardy Rd
Stonehenge Rd
MacGregor Cut
Open Space
Mammoth Rd
Schoolhouse Square
Mammoth Road Pump Station
Litchfield Rd
Shasta Dr
0 200 400 800 Feet
Notes:
1. Projected Growth Areas were identified in meetings with town staff.
2. Parcel, Conservation and Sewer layers were provided by the Town of Londonderry.
Londonderry, NH
Wastewater Facilities Plan Update
Projected Growth Area
PROJ NO: 13025A
DATE: 3/11/2025
MAP: 6
WRIGHT-PIERCE
Engineering a Better Environment

- Sewer Manhole
- Pump Station
- Proposed Pump Station
- Proposed Force Main
- Proposed Interceptor
- Sewer Main - Londonderry
- Sewer Main - Private
- Sewer Force Main - Londonderry
- Sewer Force Main - Private
- Development Identified in 2005 Facility Plan
- Development Identified After 2005
- Currently Being Developed or Permitted
- Conservation Parcels

18

8

8

18B

18B

Interstate 93

Ash St

Flow To Derry

Dunmore Way Pump Station

Pillsbury Rd

Pillsbury Rd

Woodmont Commons

Hardy Rd

Nashua Rd

Gilcreast Rd

Catesby Ln Pump Station

Action Blvd Pump Station

0 200 400 800 Feet

N

Notes:
1. Projected Growth Areas were identified in meetings with town staff.
2. Parcel, Conservation and Sewer layers were provided by the Town of Londonderry.

Londonderry, NH

Wastewater Facilities Plan Update
Projected Growth Area

PROJ NO: 13025A | DATE: 3/25/2025 | MAP: 7

WRIGHT-PIERCE
Engineering a Better Environment

O:\M W\GIS Development\Projects\NH\Londonderry\13025A_Facilities\MXD\WastewaterPlan_Mapbook_2025_NEW.aprx


Sewer Manhole
Pump Station
Proposed Pump Station
Proposed Force Main
Proposed Interceptor
Sewer Main - Londonderry
Sewer Main - Private
Sewer Force Main
Force Main and Gravity Sewer
Development Identified in 2005 Facility Plan
Development Identified After 2005
Currently Being Developed or Permitted
Conservation Parcels
Catesby Ln Pump Station
Mammoth Road Pump Station
F
0 200 400 800 Feet
Notes:
1. Projected Growth Areas were identified in meetings with town staff.
2. Parcel, Conservation and Sewer layers were provided by the Town of Londonderry.
Londonderry, NH
Wastewater Facilities Plan Update
Projected Growth Area
PROJ NO: 13025A
DATE: 3/11/2025
MAP: 8
WRIGHT-PIERCE
Engineering a Better Environment


Sewer Manhole
Pump Station
Proposed Pump Station
Proposed Force Main
Proposed Interceptor
Sewer Main - Londonderry
Sewer Main - Private
Sewer Force Main - Londonderry
Sewer Force Main - Private
Development Identified in 2005 Facility Plan
Development Identified After 2005
Currently Being Developed or Permitted
Portion of Area C that would need to be pumped to Manchester
Interstate 93
Gilcreast Rd
Nashua Rd
Hardy Rd
Pillsbury Rd
Mammoth Rd
Adams Rd
Catesby Ln Pump Station
Tokanel Drive Pump Station
19
19
19
A
B
C
C
N
0 200 400 800 Feet
Notes:
1. Projected Growth Areas were identified in meetings with town staff.
2. Parcel, Conservation and Sewer layers were provided by the Town of Londonderry.

Londonderry, NH

Wastewater Facilities Plan Update
Projected Growth Area

PROJ NO: 13025A	DATE: 3/25/2025	MAP: 9

WRIGHT-PIERCE
Engineering a Better Environment

Appendix B
Projected Flows and Loads Backup

Projected Future Wastewater Flows
Growth Areas Identified During Facility Planning
(All flows are projected Average Daily Flows)

Area 1	**Sanborn Rd**					
Residential	218	units times	210	gpd/unit	45,780	
Infiltration	60	acres times	150	gpd/acre	9,000	
		Area 1 Total Projected Flow (gpd)			**54,780**	
Area 3	**Mill Pond #2**					
Residential	1,265	units times	210	gpd/unit	265,650	Located in Londonderry
Infiltration	168	acres times	150	gpd/acre	25,200	
		Area 3 Total Projected Flow (gpd)			**290,850**	
Area 3A	**Mill Pond #3**					
Residential	29	units times	210	gpd/unit	6,090	Located in Auburn
Comm/Industrial	NA		NA		6,400	Flow indicated by developer
Infiltration	5.85	in-d-mi	300	gpd/in-d-mi	1,755	
		Area 3A Total Projected Flow (gpd)			**14,245**	
Area 4	**Mill Pond #1**					
Residential	NA	units times	NA	gpd/unit	0	Built out in 2018 - included in existing flows
Infiltration		in-d-mi		gpd/in-d-mi	0	
		Area 4 Total Projected Flow (gpd)			**0**	
Area 5	**Page Road**					
Commercial	20	acres times	700	gpd/acre	14,000	
Industrial	67	acres times	700	gpd/acre	46,900	
13 Page Road	NA		NA		2,793	Permitted Flow
Infiltration	87	acres times	150	gpd/acre	13,050	
		Area 5 Total Projected Flow (gpd)			**76,743**	
Area 6	**Stonehenge Road**					
MacGreggor's Cut	NA		NA		0	Built out in 2021 - included in existing flows
Residential	24	units times	210	gpd/unit	5,040	
Infiltration	6	acres times	150	gpd/acre	900	
		Area 6 Total Projected Flow (gpd)			**5,940**	
Area 7	**Whittemore Place and Trail Haven Estates**					
Residential	NA		NA		0	Built out in 2018 - included in existing flows
Infiltration	0	acres times	150	gpd/acre	0	existing sewer
		Area 7 Total Projected Flow (gpd)			**0**	
Area 8	**Hillside Drive**					
Residential	50	units times	210	gpd/unit	10,500	
Commercial	4	acres times	700	gpd/acre	2,800	
Infiltration	24	acres times	150	gpd/acre	3,600	
		Area 8 Total Projected Flow (gpd)			**16,900**	

Projected Future Wastewater Flows
Growth Areas Identified During Facility Planning
(All flows are projected Average Daily Flows)

Area 9	**Jack's Bridge Road**					
2V	NA		NA		1,878	Permitted Flow
Rhino	NA		NA		3,664	Permitted Flow
Bauchman Towing	NA		NA		105	Permitted Flow
Industrial	78	acres times	700	gpd/acre	54,600	
Infiltration	78	acres times	150	gpd/acre	11,700	
		Area 9 Total Projected Flow (gpd)			**71,947**	
Area 10	**Planeview Drive**					
Industrial	19	acres times	700	gpd/acre	13,300	
Infiltration	19	acres times	150	gpd/acre	2,850	
		Area 10 Total Projected Flow (gpd)			**16,150**	
Area 11	**Delta Drive**					
Industrial	6	acres times	700	gpd/acre	4,200	
Infiltration	6	acres times	150	gpd/acre	900	
		Area 11 Total Projected Flow (gpd)			**5,100**	
Area 12	**Aviation Park Drive**					
5 Aviation Park	NA		NA		3,000	Permitted Flow
Industrial	69	acres times	700	gpd/acre	48,300	
Infiltration	69	acres times	150	gpd/acre	10,350	
		Area 12 Total Projected Flow (gpd)			**61,650**	
Area 13	**Webster Road**					
Industrial	100	acres times	700	gpd/acre	70,000	
Infiltration	100	acres times	150	gpd/acre	15,000	
		Area 13 Total Projected Flow (gpd)			**85,000**	
Area 14	**Akira Way**					
Industrial	11	acres times	700	gpd/acre	7,700	
Infiltration	11	acres times	150	gpd/acre	1,650	
		Area 14 Total Projected Flow (gpd)			**9,350**	

Projected Future Wastewater Flows
Growth Areas Identified During Facility Planning
(All flows are projected Average Daily Flows)

Area 15	**Pettengill Road Commerce Park**					
Industrial	100,000	sqft bldg at	0.1	gpd/sqft	10,000	*based on 100 sqft/emp and 10 gpd/emp
FW Webb	NA		NA		0	Included in existing flows
EFI	NA		NA		0	Included in existing flows
Prologis					0	Included in existing flows
FedEX					0	Included in existing flows
Bellevance	NA		NA		0	Included in existing flows
55 Pettengill Road	NA		NA		9,000	Permitted Flow
36 Industrial Drive	NA		NA		500	Permitted Flow
Industrial	110	acres times	700	gpd/acre	77,000	
Commercial	80,000	sqft bldg at	0.1	gpd/sqft	8,000	*based on 100 sqft/emp and 10 gpd/emp
Commercial	23	acres times	700	gpd/acre	16,100	
Residential	250	units times	210	gpd/unit	52,500	
Infiltration	133	acres times	150	gpd/acre	19,950	
				Area 15 Total Projected Flow (gpd)	**193,050**	
Area 17	**Vista Ridge Drive**					
Comm./Residential	149	units times	210	gpd/unit	31,290	Current Proposal - 2021
Bluebirds Storage	NA		NA		0	Included in existing flows
Infiltration	52	acres times	150	gpd/acre	7,800	
				Area 17 Total Projected Flow (gpd)	**39,090**	
Area 18	**Woodmont East**					
Mixed Use	NA	acres times	NA	gpd/acre	220,000	Based on negotiated additional flow to Derry in 2023
Infiltration	NA	acres times	NA	gpd/acre	30,000	Estimate
				Area 18 Total Projected Flow (gpd)	**250,000**	
Area 18B	**Woodmont West**					
Mixed Use	NA	acres times	NA	gpd/acre	362,969	TFM-Updated Calcs Feb 14, 2022 - modified per Town
Infiltration	NA	acres times	NA	gpd/acre	48,000	TFM-Updated Calcs August 2021
				Area 18B Total Projected Flow (gpd)	**410,969**	
To Derry					**144,484**	
	127,584	Sanitary				
	16,900	Infiltration				
To Manchester to impact Plaza 28 PS					**266,485**	
	235,385	Sanitary				
	31,100	Infiltration				
Area 19	**Hannaford Plaza/Gilcreast Road**					
Commercial	6	acres times	700	gpd/acre	4,200	
Residential East	67	units	210	gpd/unit	14,070	
Residential West	96	Units	210	gpd/unit	20,160	
Infiltration	6	acres times	150	gpd/acre	900	
				Area 19 Total Projected Flow (gpd)	**39,330**	

Projected Future Wastewater Flows
Growth Areas Identified During Facility Planning
(All flows are projected Average Daily Flows)

Area 20	**Mammoth Road North Extension**						
Commercial	14	acres times	700	gpd/acre	9,800		
Infiltration	14	acres times	150	gpd/acre	2,100		
		Area 20 Total Projected Flow (gpd)			**11,900**		
Area 20A	**Grenier Field Road**						
Residential	43	units times	210	gpd/unit	9,030		
Infiltration	16	acres times	150	gpd/acre	2,400		
		Area 20A Total Projected Flow (gpd)			**11,430**		
Area 20B	**Mammoth Rd & Page Road**						
Residential	40	units times	210	gpd/unit	8,400		
Infiltration		acres times	150	gpd/acre	0		
		Area 20B Total Projected Flow (gpd)			**8,400**		
Area 21	**Wentworth Avenue**						
Commercial	11	acres times	700	gpd/acre	7,700		
LYMO and UTS	NA		NA			Included in existing flows	
Infiltration	11	acres times	150	gpd/acre	1,650		
		Area 21 Total Projected Flow (gpd)			**9,350**		
Area 22	**Lorden Commons**						
Res. Phase I	N/A	units times	N/A	gpd/unit		Included in existing flows	
Res. Phase 2-4	83	units times	210	gpd/unit	17,430	Permitted Flows	
Infiltration	N/A	acres times	N/A	gpd/acre	4,000	Based on Developer sewer layout and calculations	
		Area 22 Total Projected Flow (gpd)			**21,430**		
Area 23	**Wallace Farms, Phase 1**						
Residential	NA		NA		13,524	Permitted Flow of remaining buildings to be built	
Resid. On-line						Included in existing flows	
Infiltration	12	acres times	150	gpd/acre	1,800		
		Area 23 Total Projected Flow (gpd)			**15,324**		
Area 23A	**Wallace Farms, Phase 2**						
Residential	20	units times	210	gpd/unit	4,200		
Infiltration	21	acres times	150	gpd/acre	3,150		
		Area 23A Total Projected Flow (gpd)			7,350		
Area A	**Century Village**						
Residential	344	units times	125	gpd/unit	43,000	Based on actual water use data	
Infiltration	46	acres times	150	gpd/acre	6,900		
		Area A Total Projected Flow (gpd)			49,900		

Projected Future Wastewater Flows
Growth Areas Identified During Facility Planning
(All flows are projected Average Daily Flows)

Area B	**South Londonderry Interceptor North of Route 102**					
Residential	18	units times	210	gpd/unit	3,780	
Buttrick Village	40	units times	70	gpd/unit	2,800	Based on actual water use data
Commercial	70	acres times	700	gpd/acre	49,000	
Infiltration	110	acres times	150	gpd/acre	16,500	
		Area B Total Projected Flow (gpd)			**72,080**	
Area B1	**Lancaster Drive - Cortland Street Area**					
Residential	0	units times	210	gpd/unit	0	
Infiltration	0	acres times	150	gpd/acre	0	
		Area B1 Total Projected Flow (gpd)			**0**	
Area C to Derry	**Portion of Area C that Could be served by South Londonderry Interceptor already constructed**					
Residential	NA		NA		0	Grand Estate - Connected and included in existing flows
Residential	NA		NA		0	All American - Connected and included in existing flows
Residential	19	units times	210	gpd/unit	3,990	McAllister Dr./Mercury Dr. portion of Area C
Commercial	16	acres times	700	gpd/acre	11,200	McAllister Dr./Mercury Dr. portion of Area C
Infiltration	50	acres times	150	gpd/acre	7,500	
		Derry Area C Projected Flow (gpd) Subtotal			**22,690**	
Area C to Manchester					**To be directed to Manchester with pump station and force main**	
Residential	132	units times	210	gpd/unit	27,720	Existing units south of Rte. 102
Commercial	94	acres times	700	gpd/acre	65,800	Area along Rte 102 from Horizon Drive to Crosby Lane
Infiltration	140	acres times	150	gpd/acre	21,000	
		Manchester Area C Projected Flow (gpd) Subtotal			**114,520**	
Area C		**Total Projected Flow (gpd)**			**137,210**	
Area E						
Residential	0	units times	210	gpd/unit	0	
Infiltration	0	acres times	150	gpd/acre	0	
		Area E Total Projected Flow (gpd)			**0**	
Area F						
Residential	60	units times	210	gpd/unit	12,600	
Infiltration	59	acres times	150	gpd/acre	8,850	
		Area F Total Projected Flow (gpd)			**21,450**	
Area G						
Residential	0	units times	210	gpd/unit	0	
Residential					0	Built out and included in existing flows
Infiltration	0	acres times	150	gpd/acre	0	
		Area G Total Projected Flow (gpd)			**0**	

Projected Future Wastewater Flows
Growth Areas Identified During Facility Planning
(All flows are projected Average Daily Flows)

Area H **North Village Artisan District**

Commercial	50,000	sqft bldg at	0.1	gpd/sqft	5,000	*based on 100 sqft/emp and 10 gpd/emp
Residential	100	units times	210	gpd/unit	21,000	
Infiltration	0	acres times	150	gpd/acre	0	existing sewers already in flow calc
				Area H Total Projected Flow (gpd)	**26,000**	

Projected Increase in Flow to Manchester and Summarized by Pump Station

Mammoth Road PS

Flow Source	Sanitary (gpd ADF)	Infiltration (gpd ADF)
Area C to Manchester	93,520	21,000
Area E	0	0
Area F	12,600	8,850
Subtotal	**106,120**	**29,850**
Projected Average Daily Flow	135,970	gpd
Peaking Factor (sanitary flow only)	4.0	
Peak Hourly Flow	454,330	gpd
Peak Hourly Flow	320	gpm

Plaza 28 PS

Flow Source	Sanitary (gpd ADF)	Infiltration (gpd ADF)
Area 1	45,780	9,000
Area 5	63,693	13,050
Area 6	5,040	900
Area 7	0	0
Area 9	60,247	11,700
Area 17	31,290	7,800
Area 18 Now flows to Derry	0	0
Area 18B - partial	235,385	31,100
Area 20	9,800	2,100
Area 20A	9,030	2,400
Area 20B	8,400	0
Area 22	17,430	4,000
Area 23	13,524	1,800
Area 23A	4,200	3,150
Area G	0	0
Area H	26,000	0
Mammoth Road PS	106,120	29,850
Subtotal	**635,939**	**116,850**
Projected Average Daily Flow	752,789	gpd
Peaking Factor (sanitary flow only)	3.0	
Peak Hourly Flow	2,024,667	gpd
Peak Hourly Flow	1,410	gpm

Private Mill Pond Sewer

Flow Source	Sanitary (gpd ADF)	Infiltration (gpd ADF)
Area 3	265,650	25,200
Area 3A	12,490	1,755
Area 4	0	0
Subtotal	**278,140**	**26,955**
Projected Average Daily Flow	305,095	gpd
Peaking Factor (sanitary flow only)	4.0	
Peak Hourly Flow	1,139,515	gpd
Peak Hourly Flow	790	gpm

Londonderry Metering Station (LMS)

Flow Source	Sanitary (gpd ADF)	Infiltration (gpd ADF)
Area 10	13,300	2,850
Area 11	4,200	900
Area 12	51,300	10,350
Area 13	70,000	15,000
Area 14	7,700	1,650
Area 15	173,100	19,950
Area 21	7,700	1,650
Plaza 28 PS	635,939	116,850
Subtotal	**963,239**	**169,200**
Projected Average Daily Flow	1,132,439	gpd
Peaking Factor (sanitary flow only)	3.0	
Peak Hourly Flow	3,058,917	gpd
Peak Hourly Flow	2,120	gpm

Projected Increase in Flow to Manchester and Summarized by Pump Station

Combined to Manchester

Flow Source	Sanitary (gpd ADF)	Infiltration (gpd ADF)
Londonderry Metering Station	963,239	169,200
Mill Pond	278,140	26,955
Subtotal	**1,241,379**	**196,155**
Projected Average Daily Flow	1,437,534	gpd
Peaking Factor (sanitary flow only)	3.0	
Peak Hourly Flow	3,920,292	gpd
Peak Hourly Flow	2,720	gpm

Projected Increase in Flow to Derry and Summarized by Pump Station

Tokanel Drive PS

Flow Source	Sanitary (gpd ADF)	Infiltration (gpd ADF)
Area A	43,000	6,900
Area B	55,580	16,500
Area B1	0	0
Area C	15,190	7,500
Subtotal	**113,770**	**30,900**
Projected Average Daily Flow	144,670	gpd
Peaking Factor (sanitary flow only)	3.75	
Peak Hourly Flow	457,538	gpd
Peak Hourly Flow	320	gpm

Projected Increase in Flow to Derry and Summarized by Pump Station

Charleston Ave PS

Flow Source	Sanitary (gpd ADF)	Infiltration (gpd ADF)
Area 19	38,430	900
Area 18B - Partial	127,584	16,900
Tokanel Road PS	113,770	30,900
Subtotal	**279,784**	**48,700**
Projected Average Daily Flow	328,484	gpd
Peaking Factor (sanitary flow only)	3.75	
Peak Hourly Flow	1,097,890	gpd
Peak Hourly Flow	760	gpm

Action Boulevard PS

Flow Source	Sanitary (gpd ADF)	Infiltration (gpd ADF)
Area 18	220,000	30,000
Subtotal	**220,000**	**30,000**
Projected Average Daily Flow	250,000	gpd
Peaking Factor (sanitary flow only)	4	
Peak Hourly Flow	910,000	gpd
Peak Hourly Flow	630	gpm

Projected Increase in Flow to Derry and Summarized by Pump Station

Combined to Derry

Flow Source	Sanitary (gpd ADF)	Infiltration (gpd ADF)
Action Boulevard PS	220,000	30,000
Area 8	13,300	3,600
Charleston Ave PS	279,784	48,700
Subtotal	**513,084**	**82,300**
Projected Average Daily Flow	595,384	gpd

Projected Loading Increases (Flows are projected Average Daily Flows)

Manchester Loadings

	Residential Flows (gpd ADF)	Com. & Ind Flows (gpd ADF)	Infiltration Flows (gpd ADF)
Area 1 Flows	45,780	0	9,000
Area 3 Flows	265,650	0	25,200
Area 3A Flows	6,090	6,400	1,755
Area 4 Flows	0	0	0
Area 5 Flows	0	63,693	13,050
Area 6 Flows	5,040	0	900
Area 7 Flows	0	0	0
Area 9 Flows	0	60,247	11,700
Area 10 Flows	0	13,300	2,850
Area 11 Flows	0	4,200	900
Area 12 Flows	0	51,300	10,350
Area 13 Flows	0	70,000	15,000
Area 14 Flows	0	7,700	1,650
Area 15 Flows	52,500	120,600	19,950
Area 17 Flows	0	31,290	7,800
Area 18 Flows (now to Derry)	0	0	0
Area 18B Flows (Partial)	0	235,385	31,100
Area 20 Flows	0	9,800	2,100
Area 20A Flows	9,030	0	2,400
Area 20B Flows	8,400	0	0
Area 21 Flows	0	7,700	1,650
Area 22 Flows	17,430	0	4,000
Area 23 Flows	13,524	0	1,800
Area 23A Flows	4,200	0	3,150
Area C to Manchester	27,720	65,800	21,000
Area E Flows	0	0	0
Area F Flows	12,600	0	8,850
Area G Flows	0	0	0
Area H Flows	21,000	5,000	0
Total Flows to Manchester (gpd)	**488,964**	**752,415**	**196,155**
BOD Unit Loads (mg/l) *	340	340	0
BOD Total Loads (lbs/day)	1,387	2,134	0
TSS Unit Loads (mg/l) *	428	428	0
TSS Total Loads (lbs/day)	1,745	2,686	0
	TOTAL INCREASED BOD LOAD	3,520	lbs/day
	TOTAL INCREASED TSS LOAD	4,431	lbs/day

Projected Loading Increases (Flows are projected Average Daily Flows)

Derry Loadings

	Residential Flows (gpd ADF)	Com. & Ind Flows (gpd ADF)	Infiltration Flows (gpd ADF)
Area 8 Flows	10,500	2,800	3,600
Area 18	0	220,000	30,000
Area 18B Flows (Partial)	0	127,584	16,900
Area 19 Flows	34,230	4,200	900
Area A Flows	43,000	0	6,900
Area B Flows	6,580	49,000	16,500
Area B1 Flows	0	0	0
Area C Flows	3,990	11,200	7,500
Total Flows to Derry (gpd)	**98,300**	**414,784**	**82,300**
BOD Unit Loads (mg/l) *	340	340	0
BOD Total Loads (lbs/day)	279	1,176	0
TSS Unit Loads (mg/l) *	428	428	0
TSS Total Loads (lbs/day)	351	1,481	0
	TOTAL INCREASED BOD LOAD	1,455	lbs/day
	TOTAL INCREASED TSS LOAD	1,832	lbs/day

* BOD concentration for residential flows based on 0.20 lbs per person per day and 70 gpd per person which is equivalent to 340 mg/L..

* TSS concentration for residential flows based on 0.25 lbs per person per day and 70 gpd per person which is equivalent to 428 mg/L..

Appendix C
Cost Estimates Backup

Estimate of Cost to Purchase Additional Capacity from the City of Manchester

The current treatment capacity from the Intermunicipal Agreement and Amendments is:

Average Daily Flow: 4.0 MGD (including infiltration).
Increased from 3.0 MGD in 2013

This includes flow from Mill Pond Development, though there is also a flow limit for that location.

Manchester - existing plus projected future flows

Current Max monthly flow without GRE Flow	1.37	mgd
GRE Permitted Flow	0.858	mgd
Current Max Month Flow	2.228	mgd
Project Future Flow (ADF)	1.438	mgd
Projected Total Future Flow	**3.67**	**mgd**

Londonderry currently owns enough treatment capacity at Manchester, including Future flow.

In 2013, the Manchester Intermuncipal Agreement (IMA) was revised to grant Londonderry 4 mgd of capacity in the Manchester Treatment Plant, an increase of 1 mgd over the previous limit.

Manchester is in the process of upgrading its Treatment Facility. The cost for upgrade work will be shared by Manchester with the other communities that send wastewater to Manchester, including Londonderry.

Londonderry's share of cost for upgrades in Manchester:

Capital costs:	$7,874,000	
Capital costs with service charge:	**$10,000,000**	Based on Manchester's schedule of projects and interest rate of 4.5%

Assume that Sewer Access Fee funds will pay for all of the upgrade costs in Manchester

Cost for Access Fee calculations: $10,000,000

Estimate of Cost to Buy Additional Capacity in Derry

Prior to 2021, purchased capacity was 200,000 gpd. New IMA signed in 2021 states that Londonderry will purchase capacity from current 200,000 gpd to maximum of 500,000 gpd at the prevailing wastewater accessibility fee in Derry for annual incremental capacity increases of 25,000 gpd. 12 annual payments were to be made to reach the 500,000 gpd flow limit. To date, 3 payments have been made for years 2021, 2022, and 2023, and there are 9 payments remaining.
Londonderry is negotiating with Derry for an additional 250,000 gpd specifically for Area 18. It is assumed this agreement will be reached and this would extend the purchase of capactiy another 10 years, for a total number of remaing annual

Derry Accessibilty Fee Calculation

Payment Year	Annual GPD	Accessibility Fee	Annual Payments
1 (7/1/2024)	25,000	$3.76	$94,000
2 (7/1/2025)	25,000	$4.12	$103,000
3 (7/1/2026)	25,000	$4.48	$112,000
4 - 19 (7/1/2027 & Forward)	400,000	$4.48	$1,792,000
TOTAL OF ANNUAL PAYMENTS 4 THROUGH 19			**$2,101,000**

Appendix D
Existing Sewer User Rates

CHAPTER IX – SEWER USER CHARGE ORDINANCE
(Proposed May 7, 2007)

APPENDIX A

RATE SCHEDULE

The following charges are set for the users of the Town of Londonderry's wastewater facilities

Connection Fee: $ 200 - If the connection includes a new sewer service pipe
$50 - If an existing sewer service pipe is to be used (transfer of property or change of use)

Access Fee:

	Properties Developed after Availability of Municipal Sewer	Existing Units
Residential Unit:	$3,467.00	$ 500.00
Commercial/Industrial:	$16.51/GPD	$3.00/GPD (North Londonderry) $8.00/GPD (South Londonderry)

GPD = gallons per day

User Charge Fee:

Residential: Flat rate of $96.00 per quarter per residential unit

Commercial: $ 2.52 per 100 CF, with a minimum quarterly charge of $96.00 for usage of 3,810 cubic feet or less per quarter. For commercial users without a water meter, water usage will be calculated using Table 1008-1 Unit Design Flow Figures, included in Appendix E.

Industrial: $ 2.52 per 100 CF, with a minimum quarterly charge of $ 187.20 for usage of 7,430 cubic feet or less per quarter. Industrial users are also subject to fees for high strength waste, outlined below.

High Strength Waste:

$ 0.1757 per pound of BOD per quarter for the portion of BOD concentration over 224 mg/l

$ 0.1757 per pound of TSS per quarter for the portion of TSS concentration over 280 mg/l

WRIGHT-PIERCE
Engineering a Better Environment

230 Commerce Way, Suite 302
Portsmouth, NH 03801
603.430.3728 | wright-pierce.com

kevin.garvey@wright-pierce.com