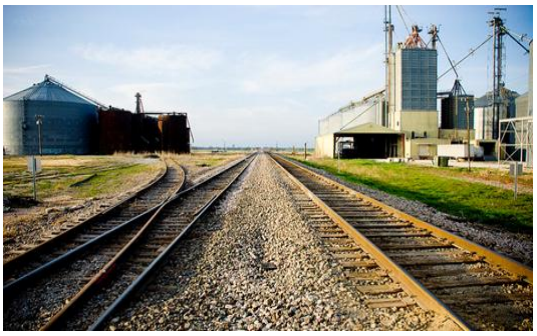
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Water, Wastewater, and Roadway Impact Fee Report

July 2025

Prepared for:

Town of Prosper

Prepared by:

FREESE AND NICHOLS, INC.
12770 Merit Drive, Suite 900
Dallas, Texas 75251
214-217-2200

FNI Project Number: PRP23229

Innovative approaches
Practical results
Outstanding service

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Water, Wastewater, and Roadway Impact Fee Report

Prepared for:

Town of Prosper

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EXECUTIVE SUMMARY

The purpose of this report is to present the methodology used in the development and calculation of water, wastewater, and roadway impact fees for the Town of Prosper. The methodology used herein satisfies the requirements of the Texas Local Government Code Chapter 395 for the establishment of impact fees. Texas Local Government Code Chapter 395 requires an impact fee analysis before impact fees are set. Chapter 395 requires that land use assumptions and capital improvements plans be updated at least every five years, and the Town of Prosper last performed an impact fee analysis in 2017.

Maximum Allowable Water Impact Fee

The cost of water capital improvements to serve development projected to occur between 2023 and 2033 is $102,611,265. A 4.0% interest rate was used to calculate financing costs. The increase in the number of service units due to growth over the next ten years is projected as 11,454 service units. The maximum allowable water impact fee with the credit is $5,969 per service unit. The maximum allowable water impact fee calculation is summarized as follows:

Water Impact Fee:

Impact Fee Eligible Capital Improvements Costs	$102,611,265
Financing Costs	$34,131,730
Total Eligible Costs	$136,742,995
Growth in Service Units	11,454

Maximum Water Impact Fee = Total Eligible Costs/Growth in Service Units
= $136,742,995/11,454
= $11,938 per Service Unit

Maximum Allowable Water Impact Fee = Maximum Impact Fee – Credit (50%)
= $11,938 - $5,969
= **$5,969 per Service Unit**

Maximum Allowable Wastewater Impact Fee

The cost of wastewater system capital improvements to serve development projected to occur between 2023 and 2033 is $144,769,681. A 4.0% interest rate was used to calculate financing costs. The increase in the number of service units due to growth over the next ten years is projected as 11,454 service units. The maximum allowable wastewater impact fee with the credit is $8,421 per service unit. The maximum allowable wastewater impact fee calculation is summarized as follows:

Wastewater Impact Fee:	
Impact Fee Eligible Capital Improvements Costs	$144,769,681
Financing Costs	$48,154,943
Total Eligible Costs	$192,924,624
Growth in Service Units	11,454

Maximum Wastewater Impact Fee = Total Eligible Costs/Growth in Service Units
= $192,924,624/11,454
= $16,843 per Service Unit

Maximum Allowable Wastewater Impact Fee = Maximum Impact Fee – Credit (50%)
= $16,843 - $8,421
= **$8,421 per Service Unit**

Maximum Allowable Roadway Impact Fee

Systemwide, the total cost of roadway capital improvements to serve future development projected to occur between 2023 and 2033 is $355,185,239. The Town has historically not collected the maximum allowable impact fee. By the requirements of Chapter 395, collecting the maximum fee would require a specific finance study. In the alternative, the Town must credit the cost of the CIP by 50%. Systemwide, the cost attributable to ten-year growth is $277,267,044. The increase in the number of service units due to growth over the next ten-year period is 117,302 vehicle-miles. With the 50% credit to the CIP, the maximum allowable roadway impact fee is $1,334 in Service Area 1 and $1,397 in Service Area 2. The maximum allowable roadway impact fee calculation for each service area is summarized as follows:

Service Area 1: West of Railroad Tracks

Growth in Service Units (veh-mi)	79,146
Cost of CIP and Financing Attributable to New Development	$241,233,127

Maximum Roadway Impact Fee = Cost Attributable to New Dev./Growth in Serv Units
= $211,233,127/ 79,146
= $2,668 per Service Unit

Maximum Allowable Roadway Impact Fee = Maximum Impact Fee – Credit (50%)
= $2,668 - ($2,668 x 0.50)
= **$1,334 per Service Unit**

Service Area 2: East of Railroad Tracks

Growth in Service Units (veh-mi)	38,157
Cost of CIP and Financing Attributable to New Development	$106,645,086

Maximum Roadway Impact Fee = Cost Attributable to New Dev./Growth in Serv Units
= $106,645,086 / 38,157
= $2,794per Service Unit

Maximum Allowable Roadway Impact Fee = Maximum Impact Fee – Credit (50%)
= $2,794 – ($2,794 x 0.50)
= **$1,397 per Service Unit**

1.0 BACKGROUND

Chapter 395 of the Texas Local Government Code requires an impact fee analysis before impact fees can be created and assessed. Chapter 395 defines an impact fee as "a charge or assessment imposed by a political subdivision against new development in order to generate revenue for funding or recouping the costs of capital improvements or facility expansions necessitated by and attributable to the new development." Chapter 395 identifies the following items as impact fee eligible costs:

- Construction contract price
- Surveying and engineering fees
- Land acquisition costs
- Fees paid to the consultant preparing or updating the capital improvements plan (CIP)
- Projected interest charges and other finance costs for projects identified in the CIP

Chapter 395 also identifies items that impact fees cannot be used to pay for, such as:

- Construction, acquisition, or expansion of public facilities or assets other than those identified on the capital improvements plan
- Repair, operation, or maintenance of existing or new capital improvements
- Upgrading, updating, expanding, or replacing existing capital improvements to serve existing development in order to meet stricter safety, efficiency, environmental, or regulatory standards
- Upgrading, updating, expanding, or replacing existing capital improvements to provide better service to existing development
- Administrative and operating costs of the political subdivision
- Principal payments and interest or other finance charges on bonds or other indebtedness, except as allowed above

In February 2023, the Town of Prosper authorized Freese and Nichols, Inc. (FNI) to perform an impact fee analysis on the Town's water and wastewater systems as well as a roadway system impact fee analysis. The purpose of this report is to present the methodology used in the development and calculation of water, wastewater, and roadway impact fees for the Town of Prosper. The methodology used herein

satisfies the requirements of the Texas Local Government Code Chapter 395 for the establishment of water, wastewater, and roadway impact fees.

Table 1-1 provides a list of abbreviations used in this report.

Table 1-1 Abbreviations

Abbreviation	Full Nomenclature
ADS	ADS Environmental Services, Inc.
CIP	Capital Improvements Plan
CIAC	Capital Improvements Advisory Committee
EPS	Extended Period Simulation
EST	Elevated Storage Tank
ETJ	Extra-territorial Jurisdiction
GIS	Geographic Information System
gpad	Gallons Per Acre per Day
gpcd	Gallons Per Capita Per Day
gpm	gallons per minute
IFCIP	Impact Fee Capital Improvements Plan
I/I	Inflow and Infiltration
ITE	Institute of Transportation Engineers
FNI	Freese and Nichols, Inc.
LPP	Lower Pressure Plane
MGD	Million Gallons per Day
MTP	Master Thoroughfare Plan
NAICS	North American Industrial Classification System
NHTS	National Household Travel Survey
NCTCOG	North Central Texas Council of Governments
NTMWD	North Texas Municipal Water District
PRV	Pressure Reducing Valve
psi	Pounds per square inch
SCADA	Supervisory Control and Data Acquisition
SUE	Service Unit Equivalency
TCEQ	Texas Commission on Environmental Quality
UPP	Upper Pressure Plane
UTRWD	Upper Trinity Regional Water District
veh-mi	Vehicle-mile
WWTP	Wastewater Treatment Plant

2.0 LAND USE ASSUMPTIONS

Population and land use are important elements in the analysis of water, wastewater, and roadway systems. Water demands and wastewater flows depend on the residential population and commercial development served by the systems and determines the sizing and location of system infrastructure. Employment and population projections for residential and commercial developments are required to size roadway facilities by the number of dwelling units and employees. Land use assumptions for the purpose of roadway impact fees can be found in **Section 4.2.1**. A thorough analysis of historical and projected populations, along with land use, provides the basis for projecting future water demands and wastewater flows.

2.1 Service Area

The service area for Town of Prosper's water and wastewater systems is defined as the Town limits and the existing extra-territorial jurisdiction (ETJ). The current boundary of the service area encompasses the entire Town limits, with the exception of Artesia. Artesia is projected to be served water by Prosper in the buildout period, but not convey wastewater flow to the Town, as the Artesia development has its own line to the Upper Trinity Regional Water District (UTRWD) Doe Branch interceptor. Growth within the Town is concentrated in the area within the Town limits and west of the BNSF railroad. **Figures 2-1** and **2-2** illustrate the water and wastewater service area. For the purpose of calculating roadway impact fees, the Town of Prosper was divided into two service areas with the BNSF railroad being the divider. **Figure 4-1** illustrates the two roadway service areas.

2.2 Historical Population

Table 2-1 presents the historical populations for the Town of Prosper from 2012 through 2022, based on estimates from the North Central Texas Council of Governments (NCTCOG) and the US Census. The data indicated an annual average growth rate of 11.3% over the last 10 years.

Table 2-1 Historical Population

Year	Population[1]	Population Growth	Growth Rate
2012	12,190	-	-
2013	13,380	1,190	9.8%
2014	14,710	1330	9.9%
2015	15,970	1260	8.6%
2016	17,790	1820	11.4%
2017	20,160	2,370	13.3%
2018	22,650	2,490	12.4%
2019	25,630	2,980	13.2%
2020	30,165	4,535	17.7%
2021	31,090	925	3.1%
2022	35,410	4,320	13.9%
Average	-	-	**11.3%**

[1]Historical population is based on NCTCOG and Census data.

2.3 Projected Population

FNI developed population projections and non-residential growth projections as part of the Town's 2022 Comprehensive Plan Update. This data was provided for use in the impact fee update in the form of GIS shapefiles. This data consisted of planning areas, small areas of land with a designated land use, with their projected population and non-residential acreage for each planning period. A large portion of the projected growth is expected to take place in the area west of the BNSF railroad. Significant residential growth alongside substantial non-residential development is forecasted in this area in the next five to ten years. The area east of the BNSF railroad within the Town limits will continue to experience steady population growth as it is currently not completely built out.

Table 2-2 and **Table 2-3** present the population projections for the Town of Prosper water and wastewater service areas, respectively. The roadway and water service area cover the same area and align with the Town limits. Since a portion of the population is currently served by septic systems, the wastewater population served is smaller than the water service area population in 2023, 2028, and 2033. The northeast portion of the Town is not projected to experience significant growth in the next ten years. As a result, there is a CIP project in that area after 2033 to convert the existing septic system population to the Prosper wastewater system. The Artesia development is anticipated to join the Town's water service area in the buildout period but continues to manage its own wastewater conveyance through buildout. **Figure 2-1** shows the population projections by planning area.

Table 2-2 Projected Water Service Population

Year	Population	Average Annual Population Growth	Average Annual Growth Rate
2023	38,843	-	-
2028	53,393	2,910	7%
2033	64,437	2,209	4%
Buildout	82,175	-	-

Table 2-3 Projected Wastewater Service Population

Year	Population[(1)]	Average Annual Population Growth	Average Annual Growth Rate
2023	36,572	-	-
2028	51,215	2,929	7%
2033	62,259	2,209	4%
Buildout	76,811	-	

[(1)] Wastewater population is less than water population within 10-year period due to septic users. Wastewater population is less than water population in buildout period due to Artesia not requiring wastewater service from Prosper.

DRAFT FIGURE 2-1

TOWN OF PROSPER

LAND USE ASSUMPTIONS

POPULATION BY PLANNING AREAS

LEGEND

- Road
- Stream
- Lake
- Parcel
- Planning Area Boundary
- W/WW Impact Fee Service Area
- Town Limit
- ETJ Boundary
- County Boundary

FUTURE LAND USE

- Low/Medium Density Single Family
- High Density Single Family
- Floodplain
- Old Town District
- Parks
- Retail & Neighborhood Services
- Tollway District
- Town Center
- US 380 District

AREA ID
2023 Population
2028 Population
2033 Population
Buildout Population

TOWN OF PROSPER

FREESE AND NICHOLS

0 1,600 3,200

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2.4 Projected Non-Residential

Land use shapefiles were developed as part of the Town's 2022 Comprehensive Plan Update, which included population and non-residential acreages. In order to capture growth related to commercial, retail, office, institutional, and industrial development, developed non-residential acreage for each planning period was projected. **Table 2-4** shows the projected non-residential acreage for each planning period. **Figure 2-2** presents the developed non-residential acreage with water and wastewater service by planning year.

Table 2-4 Developed Non-Residential Acreage

Year	Acres	Growth in Acres
2023	1,492	-
2028	2,324	832
2033	3,640	1,316
Buildout	4,829	1,189

DRAFT FIGURE 2-2

TOWN OF PROSPER

LAND USE ASSUMPTIONS
NON-RESIDENTIAL ACREAGE
BY PLANNING AREAS

LEGEND

- Road
- Railroad
- Stream
- Lake
- Parcel
- Planning Area Boundary
- W/WW Impact Fee Service Area
- Town Limit
- ETJ Boundary
- County Boundary

FUTURE LAND USE

- Low/Medium Density Single Family
- High Density Single Family
- Floodplain
- Old Town District
- Parks
- Retail & Neighborhood Services
- Tollway District
- Town Center
- US 380 District

AREA ID
2023 Non-Residential Acreage
2028 Non-Residential Acreage
2033 Non-Residential Acreage
Buildout Non-Residential Acreage

TOWN OF PROSPER

FREESE AND NICHOLS

0 1,600 3,200
SCALE IN FEET

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3.0 WATER AND WASTEWATER ANALYSIS

Water and wastewater CIPs were developed for the Town of Prosper to promote residential and commercial development through access to quality water and wastewater service. The recommended improvements will provide the required capacity and reliability to meet projected water demands and wastewater flows through buildout. The water and wastewater projects required to meet growth in the 10-year period were used in the impact fee analysis.

3.1 Existing Water and Wastewater Systems

The existing water distribution system currently consists of a network of lines ranging in size from 1-inch to 42-inch in diameter, a pump station, two ground storage tanks, and three elevated storage tanks. The existing pump station has three pumps rated at 3.75 million gallons per day (MGD) and three pumps rated at 7.00 MGD. The total pumping capacity is 32 MGD, and the firm pumping capacity is 25 MGD. The Town receives water from the North Texas Municipal Water District (NTMWD) delivery point at the pumping station. The Town of Prosper operates the distribution system on two pressure planes: an upper pressure plane and a lower pressure plane. The Upper Pressure Plane (UPP) generally consists of the east half of the Town. The UPP has a static hydraulic gradient of 926 feet, which is established by the Preston and Prosper Trail Elevated Storage Tanks (ESTs). The Lower Pressure Plane (LPP) consists of the west half of the Town. The LPP has a static hydraulic gradient of 805 feet, which is established by the Fishtrap EST. The LPP is currently supplied by the UPP through a transfer valve on a 42-inch line. An LPP Pump Station on the same site as the existing pump station and additional 42-inch pipeline are currently under construction that will supply the LPP in the future.

The existing wastewater system has two major basins, 6 active lift stations, and a network of lines ranging from 4-inch to 36-inch in diameter. A ridge near the railroad alignment divides the Town into two major drainage basins; the wastewater system in the western portion of the Town flows into the Doe Branch interceptor owned by UTRWD and the wastewater system on the east side of the Town flows into the Upper East Fork interceptor owned by NTMWD. A portion of Prosper that would naturally flow west to UTRWD is currently pumped east to NTMWD at the existing lift station at the abandoned Wastewater Treatment Plant (WWTP). The existing lift station is expected to be abandoned and flow from this area conveyed west by 2028.

3.2 Water and Wastewater Model Update and Calibration

3.2.1 Water Model

The water system hydraulic model was developed in InfoWater Pro software by Autodesk based on the Town's water system GIS as well as plans provided by the Town. Existing water demands were allocated to the model using customer billing records for each individual account from June 2023 that were geocoded and matched spatially using the Geographic Information Systems (GIS) parcel and street centerline shapefiles. Approximately 99% of the billing records were matched. **Figure A-1** in **Appendix A** displays a map with the geocoded billing meters sized by usage.

A model calibration was performed to verify that the hydraulic model is an accurate representation of the actual distribution system. FNI conducted field pressure testing at nine locations throughout the distribution system in late June 2023 through late July 2023. The Town provided Supervisory Control and Data Acquisition (SCADA) readings for tank levels and pump status on an hourly basis during this time, and FNI used the readings to create diurnal demand curves. In order to create the curves, a mass balance of the system demand was calculated using the sum of water pumped into the distribution system from the NTMWD delivery point and adding or subtracting the demand or supply provided by the elevated storage tank.

The 24-hour period occurring on July 18, 2023, from midnight to midnight was selected for calibration. Operational data was used to determine system inputs such as ground storage tank levels and pump status. Since the model results closely matched the field pressure testing data, FNI concluded that the model is an accurate representation of field conditions and appropriate for use in CIP planning. Billing meter data, pressure recorder locations, and field pressure testing data are included in **Appendix A**.

3.2.2 Wastewater Model

The wastewater system hydraulic model was developed from the Town's wastewater system GIS. Initial wastewater loads were applied to manholes in the model based on historical wastewater flow data and water billing meter data from June 2023. Flow monitoring was conducted from early April 2023 through late June 2023 by ADS Environmental Services (ADS). Ten flow meters were deployed at the outlets of sub-basins 1 through 10 as shown on **Figure B-1** in **Appendix B**, as well as two rain gauges. The three permanent meters at the UTRWD points of entry were also used to calibrate corresponding basins, as shown on **Figure B-1**.

A model validation was performed to verify that the collection system model accurately represents the actual collection system. To analyze the performance of the collection system under average dry weather conditions, an average dry weather flow for each basin was developed based on the flow monitoring results for the period occurring from April 13th through April 19th. These specific days were selected since there was no rainfall observed during this period. The initial loads applied to each sub-basin were then scaled to their corresponding average dry weather flows. To analyze wet weather performance of the collection system, the initial loads applied to each manhole were adjusted to account for inflow and infiltration (I/I) contributions and match the peak response of the storm event on May 19th. **Appendix B** contains the final deliverable for the temporary flow monitoring study conducted by ADS.

3.3 Water and Wastewater Load Projections

The population and land use data was used to develop future water demands and wastewater flows based on a projected average day per capita use and peaking factors. The design criteria used to project water demands and wastewater flows were developed based on historical data. In the future, it is anticipated that per capita and non-residential per acre usage will increase based on the large number of irrigation systems being installed with new development and the type of commercial and industrial developments being proposed. The large increase in residential irrigation systems is expected to offset conservation measures in place for the future; therefore, for planning purposes the residential per capita used for projections is assumed to be constant in the future.

Historical water demands from 2015 through 2022 were provided to FNI by the Town for the development of projected water usage rates and peaking factors. **Table 3-1** illustrates the average and maximum day water demands for these years. Based on this data, the projected residential per capita usage rate is 185 gallons per capita per day (gpcd), and the projected non-residential usage rate is 1400 gallons per acre per day (gpad) for all planning scenarios. The maximum day to average day peaking factor is 2.2 for all land use types and planning scenarios, and the peak hour to maximum day peaking factor is 2.1 for all land use types and planning scenarios. Water system design criteria for projections is presented in **Table 3-2**. Projected water demands are presented in **Table 3-3**. Timing of the Artesia development connecting to the Town's water system is currently unknown, and water demands associated with Artesia are included in the buildout water demand projections. Detailed water demands projections by pressure plane are presented in **Appendix C**.

Table 3-1 Historical Water Demands

Year	Population[1]	Average Day Demand (MGD)	Overall Average Day per Capita Demand (gpcd)	Maximum Day Demand (MGD)	Maximum Day to Average Day Peaking Factor
2015	15,970	3.0	188	8.4	2.8
2016	17,790	3.8	211	8.7	2.3
2017	20,160	4.2	209	8.6	2.0
2018	22,650	4.8	212	11.6	2.4
2019	25,630	5.4	210	12.6	2.3
2020	30,165	6.5	217	13.0	2.0
2021	31,090	7.1	229	16.8	2.4
2022	35,410	8.2	231	18.2	2.2
Average	-	**5.4**	**213**	**12.2**	**2.3**

[1]Historical population is based on NCTCOG and Census data.

Table 3-2 Water Demand Projections Design Criteria

Average Day Residential Per Capita Usage (gpcd)	Average Day Non-Residential Usage Per Acre (gpad)	Maximum Day to Average Day Peaking Factor	Peak Hour to Maximum Day Peaking Factor
185	1400	2.2	2.1

Table 3-3 Water Demand Projections

Year	Average Day Demand (MGD)	Maximum Day Demand (MGD)	Peak Hour Demand (MGD)
2023	9.28	20.40	42.85
2028	13.13	28.89	60.67
2033	17.02	37.44	78.62
Buildout	21.96	48.32	101.47

The projected wastewater residential per capita usage rate is 95 gpcd for all future planning periods. The projected wastewater non-residential usage rate is 650 gpcd for all future planning periods. These wastewater usage rates represent a percentage of the water demand that is captured by the wastewater collection system for each planning period. The wastewater usage rate is approximately 51% of the water usage rate for residential and approximately 46% for non-residential usage. Historical wastewater flow data was used in the development of wastewater residential and non-residential usage rates. The peak wet weather peaking factor for all planning periods is 4.0. The average day flows for all planning scenarios were multiplied by this factor to calculate the peak wet weather flows. **Table 3-4** summarizes annual historical wastewater flows sent to NTMWD and UTRWD. Projected wastewater flow projections are presented in **Table 3-5**. Projected wastewater flows by sub-basin for the Town of Prosper are contained in **Appendix C**.

Table 3-4 Historical Wastewater Flow

Year	Average Flow to NTMWD (MGD)	Average Flow to UTRWD (MGD)	Total Wastewater Flow (MGD)
2015	1.32	0.02	1.34
2016	1.23	0.11	1.34
2017	1.31	0.23	1.54
2018	1.55	0.43	1.98
2019	1.26	0.62	1.88
2020	1.36	0.76	2.12
2021	1.57	0.70	2.27
2022	1.71	0.99	2.70

Table 3-5 Wastewater Flow Projections

Wholesale Provider	2023		2028		2033		Buildout	
	Average Annual Daily Flow (MGD)	Peak Wet Weather Flow (MGD)	Average Annual Daily Flow (MGD)	Peak Wet Weather Flow (MGD)	Average Annual Daily Flow (MGD)	Peak Wet Weather Flow (MGD)	Average Annual Daily Flow (MGD)	Peak Wet Weather Flow (MGD)
UTRWD	1.31	5.24	4.48	17.92	5.98	23.92	7.76	31.04
NTMWD	1.83	7.32	1.89	7.56	2.28	9.12	2.68	10.72
Total	**3.14**	**12.56**	**6.37**	**25.48**	**8.26**	**33.04**	**10.44**	**41.76**

3.4 Design Criteria

FNI coordinated with the Town of Prosper to establish design criteria for future water and wastewater facilities. Criteria were developed for sizing water transmission lines, elevated storage tanks, ground storage tanks, and pump stations for the water system and for sizing sewer trunk lines for the wastewater system.

3.4.1 Water Design Criteria

As a public water utility, the Town of Prosper must comply with the rules and regulations for public water systems set forth by Texas Commission on Environmental Quality (TCEQ) in Chapter 290. The Town is required to meet the TCEQ elevated storage capacity requirement of 100 gallons per connection and the total storage capacity requirement of 200 gallons per connection. The Town of Prosper currently maintains 14,997 connections, which requires approximately 1.5 MG of elevated storage and 3 MG of total storage. The Town of Prosper greatly exceeds the TCEQ storage requirements. TCEQ requires a total

pumping capacity of at least 1,000 gallons per minute (gpm) and the ability to meet peak hourly demands with the largest pump out of service, and the Town of Prosper exceeds this pumping requirement.

TCEQ regulations state that under normal operating conditions, a minimum pressure of 35 pounds per square inch (psi) must be maintained at all times throughout the system. The exception to this rule is under emergency fire flow situations where the pressure is then permitted to drop to 20 psi until the emergency is addressed. Residential and commercial fire flow requirements typically range from 1,000 to 1,500 gpm, while some industrial fire flows can approach 3,500 gpm or greater.

A maximum water line velocity of approximately 6 feet per second (fps) and a maximum friction loss of 3 feet per 1,000 feet of water line length are recommended for water transmission lines (diameter larger than 16 inches). A maximum water line velocity of approximately 6 fps and a maximum friction loss of 7 feet per 1,000 feet are recommended for water distribution lines (diameter 16 inches and smaller).

FNI developed criteria for sizing of storage and pumping capacity for the Town. These criteria are typically more stringent than TCEQ requirements and take into consideration many additional factors including operational flexibility, fire protection, and energy efficiency. The design criteria used to size ground storage tank capacity is to provide adequate storage volume to meet 8 to 10 hours of maximum day demand. **Figure 3-1** summarizes the recommended ground storage capacity and associated improvements based on the design criteria over the next 10 years. One additional 5 MG GST is recommended in 2034 with the LPP PS expansion to meet the Town's ultimate needs with Artesia included.

The design criteria recommended for pump station capacity is the capability to provide a firm pumping capacity to meet 60% of the peak hour demand. The firm pumping capacity is defined as the total available pumping capacity with the largest pump out of service to each pressure plane. The figures in this section assume that the area between the DNT and railroad has been shifted to the LPP. **Figures 3-2** and **3-3** display the recommended firm pumping capacity to the UPP and LPP, respectively. The UPP PS has already been constructed to meet ultimate needs and one LPP PS expansion is recommended in 2034 to meet the Town's ultimate needs including Artesia.

The design criteria recommended for elevated storage capacity is the required volume needed to meet 40% of the peak hour demand for a duration of 3 hours plus a fire flow rate of 3,500 gpm for a duration of 3 hours. **Figures 3-4** and **3-5** display the recommended elevated storage capacity and related improvements based on the typical peaking factors for the UPP and LPP, respectively. No additional

elevated tanks are recommended in the UPP, and the only recommended additional elevated tank in the LPP is the 1.5 MGD EST in 2032.

Figure 3-1 Recommended Ground Storage Capacity

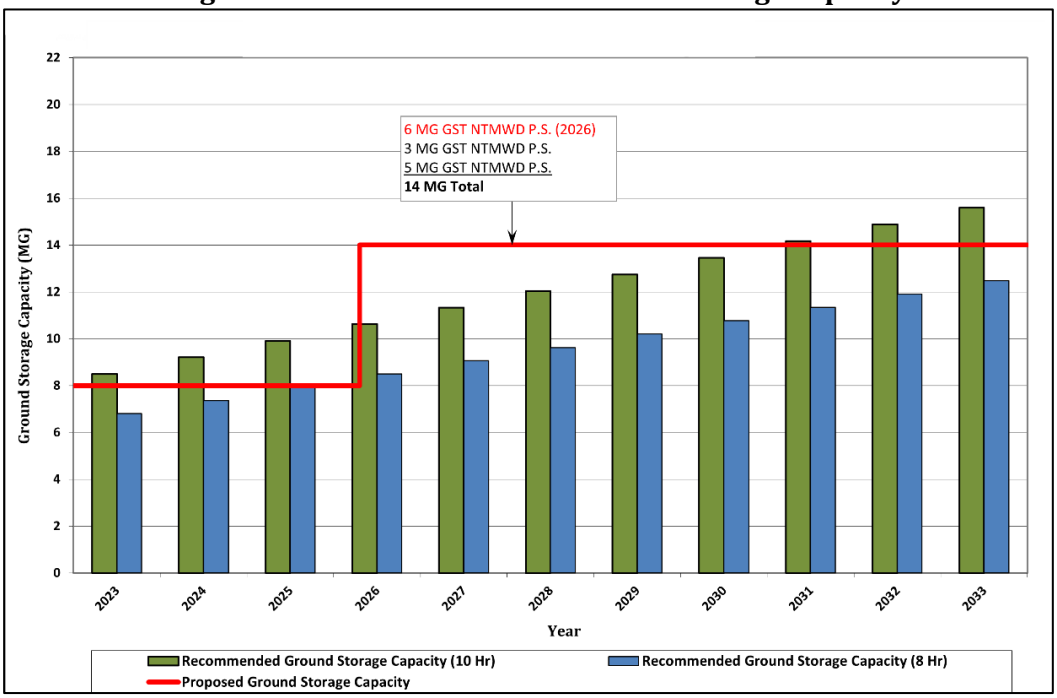


Figure 3-2 UPP Recommended Firm Pumping Capacity

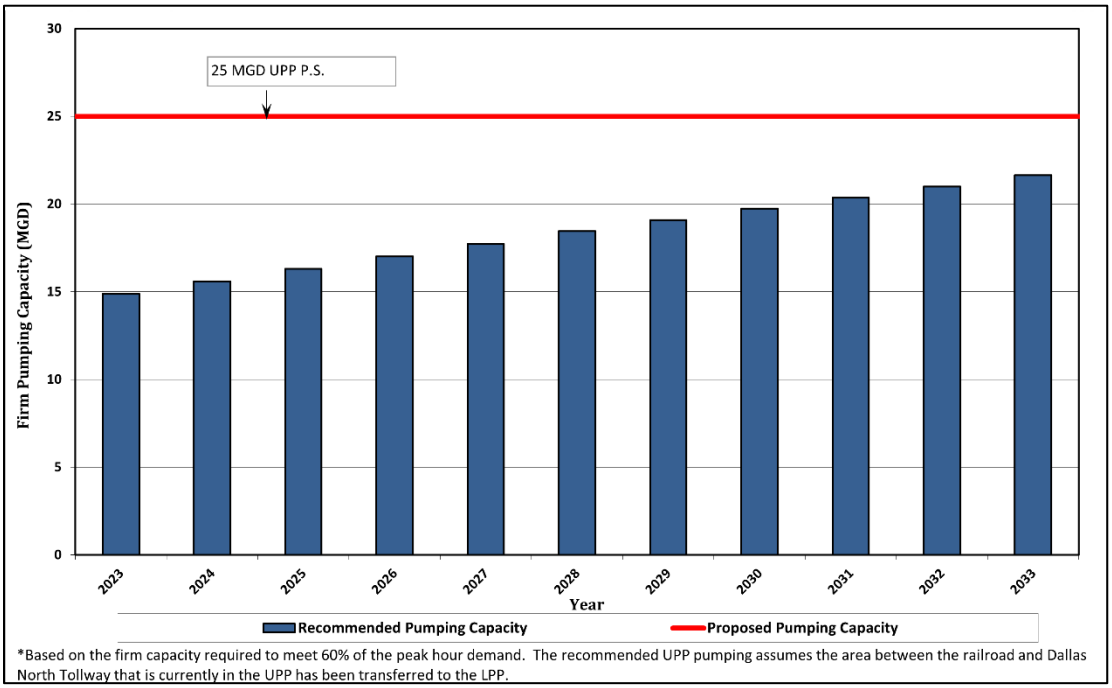
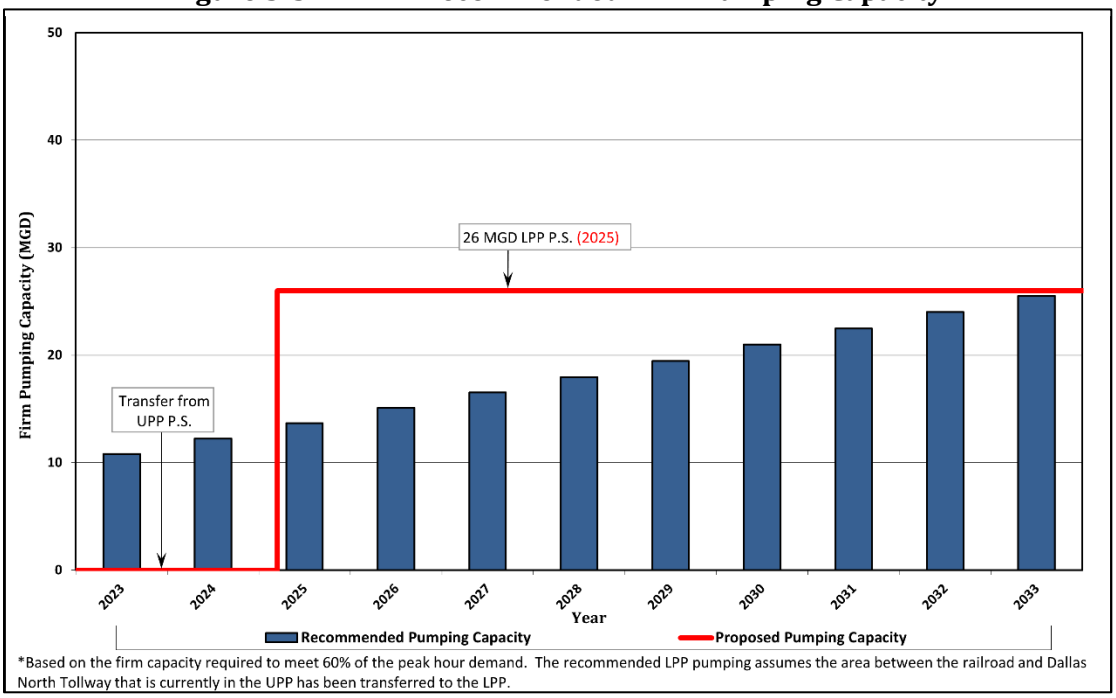
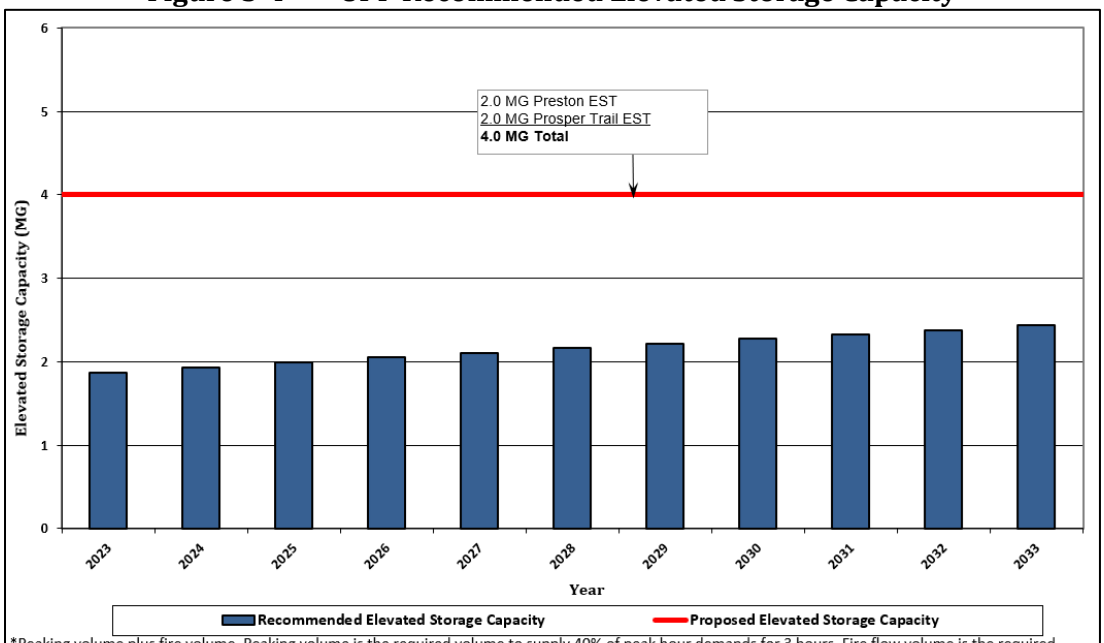


Figure 3-3 LPP Recommended Firm Pumping Capacity



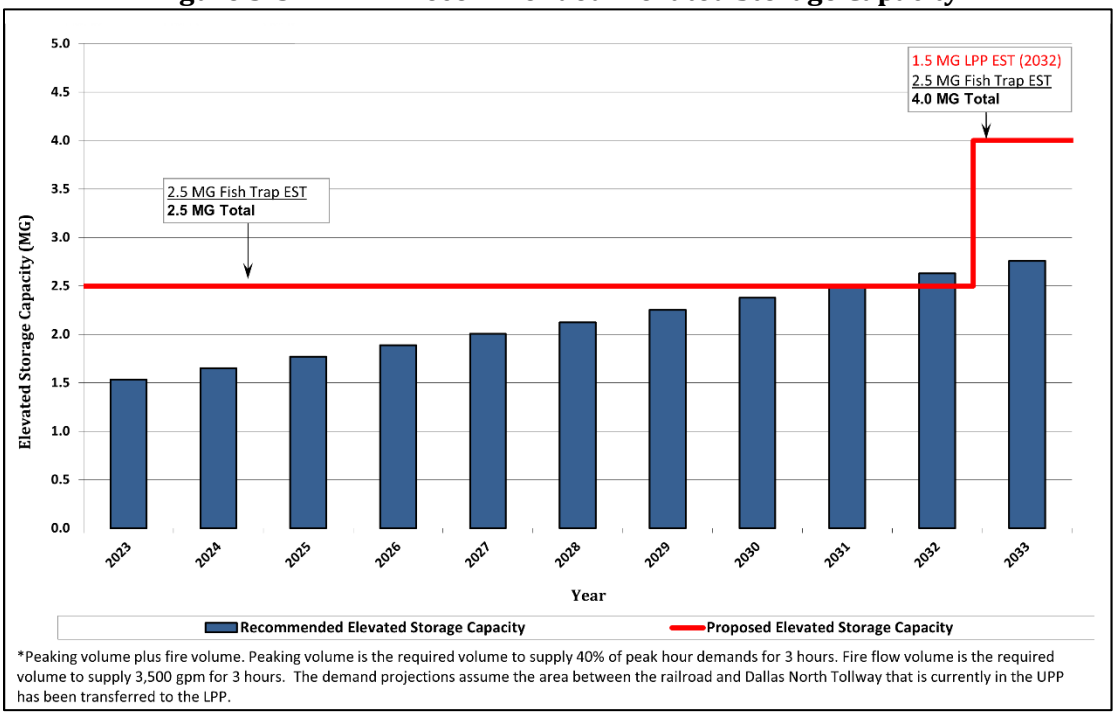
*Based on the firm capacity required to meet 60% of the peak hour demand. The recommended LPP pumping assumes the area between the railroad and Dallas North Tollway that is currently in the UPP has been transferred to the LPP.

Figure 3-4 UPP Recommended Elevated Storage Capacity



*Peaking volume plus fire volume. Peaking volume is the required volume to supply 40% of peak hour demands for 3 hours. Fire flow volume is the required volume to supply 3,500 gpm for 3 hours. The demand projections assume the area between the railroad and Dallas North Tollway that is currently in the UPP has been transferred to the LPP.

Figure 3-5 LPP Recommended Elevated Storage Capacity



*Peaking volume plus fire volume. Peaking volume is the required volume to supply 40% of peak hour demands for 3 hours. Fire flow volume is the required volume to supply 3,500 gpm for 3 hours. The demand projections assume the area between the railroad and Dallas North Tollway that is currently in the UPP has been transferred to the LPP.

3.4.2 Wastewater Design Criteria

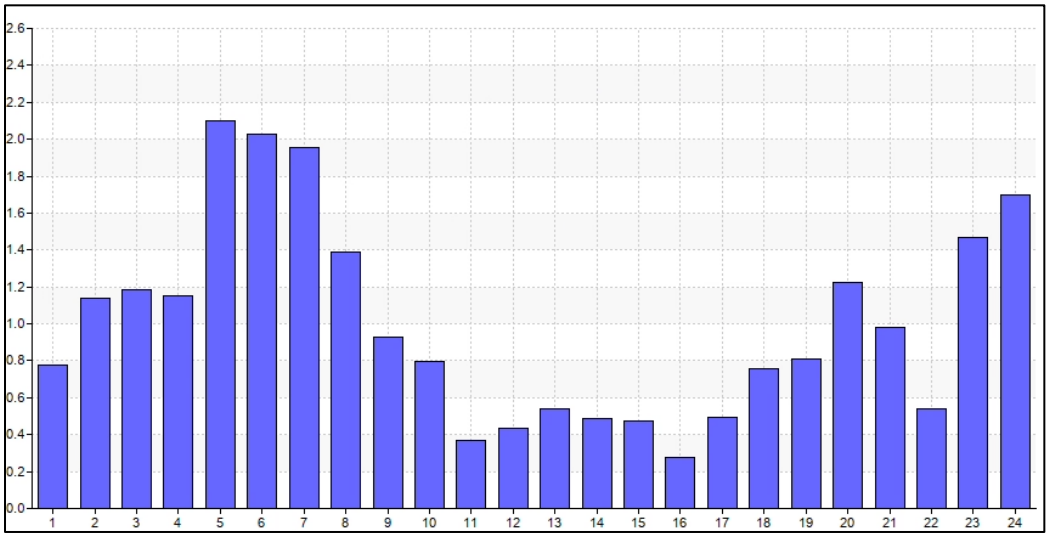
The TCEQ outlines the design criteria for domestic wastewater systems in 30 TAC Chapter 217, which governs the planning, design, operation, and maintenance of wastewater collection and treatment systems. Chapter 217 requires that wastewater systems be designed to protect public health and the environment by ensuring the safe conveyance and effective treatment of domestic wastewater. Collection systems must be designed to prevent overflows, bypasses, and I/I, with sufficient capacity to handle peak wet weather flows. Treatment facilities must reliably meet permitted effluent quality standards, and systems must be capable of operating effectively under both normal and peak flow conditions. Although the Town conveys its wastewater to a wholesale provider for treatment, it remains responsible for the proper design, operation, and maintenance of its collection system to ensure compliance with TCEQ regulations. Wastewater system operators must maintain system integrity, manage flow conditions, and ensure all infrastructure meets the applicable design, construction, and performance standards established under Chapter 217.

3.5 Water and Wastewater Model Analyses

3.5.1 Water System Evaluation

Hydraulic analyses were performed on the distribution system under maximum day demand conditions. To identify existing system deficiencies and size ultimate infrastructure, 24-hour extended period simulation (EPS) model runs were performed for maximum day demand conditions for the existing system, 10-year and buildout scenarios. The modeled hourly diurnal curve is based on SCADA data provided by the Town and shown on **Figure 3-6**. Maximum day EPS model run was performed for the 10-year scenario to determine phasing of improvements and identify CIP projects for the impact fee update. By examining the distribution system under these various operating conditions, it is possible to determine where issues with pressures occur, if tanks are filling or draining properly, and if the service pumping facilities are adequate to meet the required demand at acceptable pressures.

Figure 3-6 Modeled 24-Hour Maximum Day Diurnal Curve



A maximum day EPS model run evaluates the ability of the system to provide adequate supply to meet demands while maintaining levels in storage facilities. During a maximum day EPS analysis, the peak hour demand is also simulated through the use of a diurnal pattern. Peak hour demand represents the single hour of the year with the highest system demand. Peak hour simulations are used to assess the ability of the distribution system to maintain minimum residual pressures. Lower demand periods throughout the day are simulated in EPS modeling as well. This is when the system's ability to replenish storage tanks is evaluated.

The Town adjusted the Upper Pressure Plane and Lower Pressure Plane pressure plane boundary from the railroad to DNT to assist with perceived low pressures in the area. The Upper Pressure Plane Pump Station has already been constructed to the ultimate capacity, and projected demands in the Upper Pressure Plane through buildout exceeded what can be served by the pump station based on the pressure plane boundary at DNT. Therefore, a pressure plane boundary adjustment is recommended due to the Upper Pressure Plane Pump Station limitation and based on a review of elevations and pressure data in this area. Pressures in the pressure plane transfer area will be approximately 50 psi lower in the LPP. Elevations in the transfer area range from 622 to 662 feet. Based on the highest elevation in the transfer area (662 feet), the static pressure is 62 psi when the Fishtrap tank is full and 53 psi when the Fishtrap tank is half full.

Modeled pumping and storage operations for the 10-year (2033) system maximum day analysis with recommended improvements are shown on **Figure 3-7** and **Figure 3-8** for the UPP and LPP, respectively. Modeled LPP pressures in the 10-year maximum day EPS model run range from 53 to 112 psi, assuming the proposed adjustment of the pressure plane boundary from the DNT to the railroad. The lowest pressures in the LPP occur in the area between the DNT and railroad. Modeled UPP pressures in the 10-year maximum day EPS model run range from 47 to 136 psi. Modeled pumping and storage operations for the buildout system analysis with recommended improvements and Artesia served by the Town of Prosper are shown on **Figure 3-9** and **Figure 3-10** for the UPP and LPP, respectively. LPP pressures in the buildout system maximum day EPS model run range from 45 to 113 psi, while UPP pressures in the buildout system analysis EPS model run range from 46 to 134 psi.

Figure 3-7 2033 Maximum Day UPP Modeled Pumping and Tank Levels

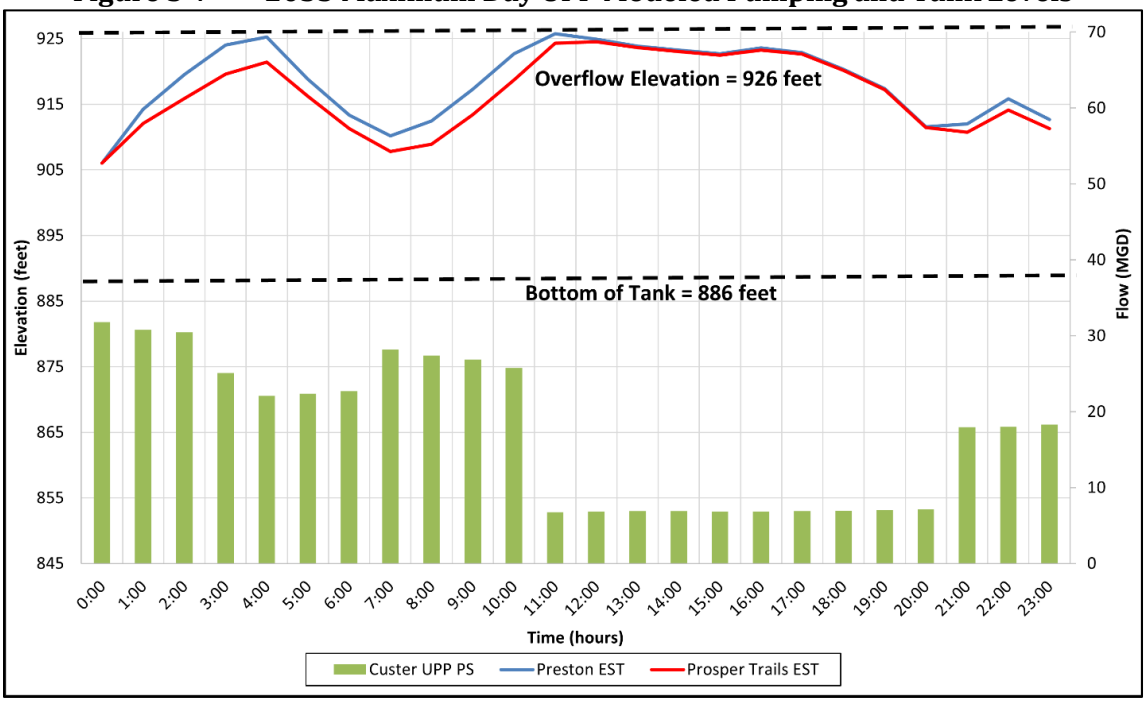


Figure 3-8 2033 Maximum Day LPP Modeled Pumping and Tank Levels

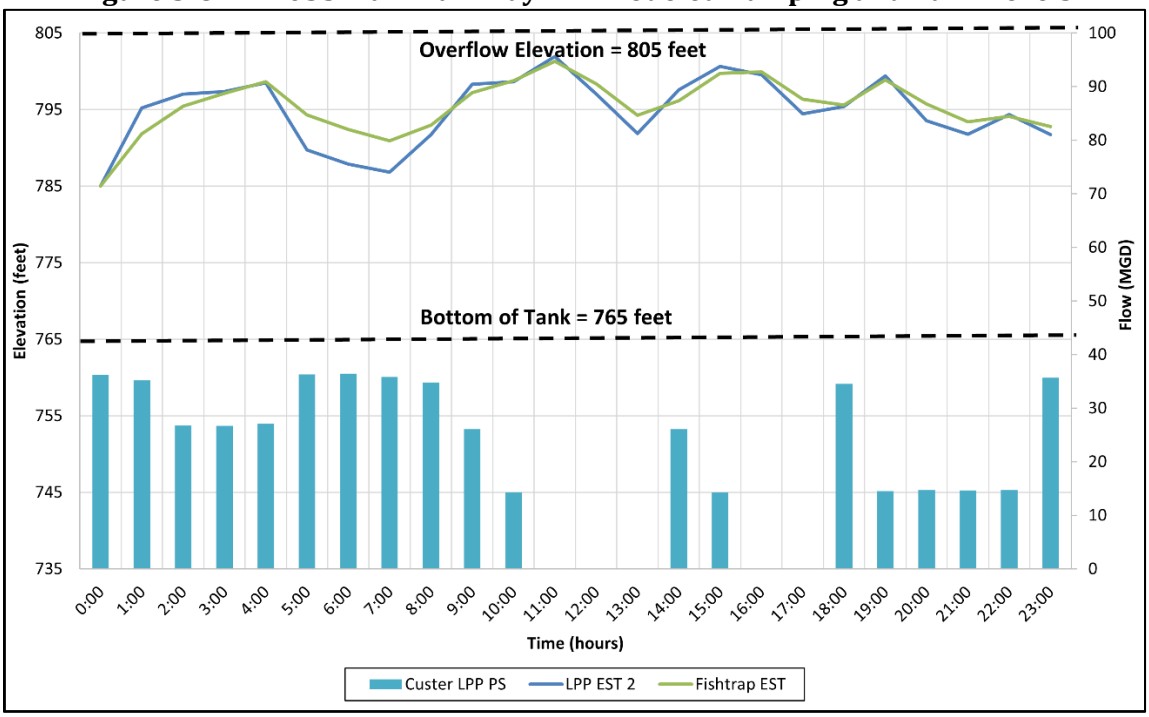


Figure 3-9 Buildout Maximum Day UPP Modeled Pumping and Tank Levels

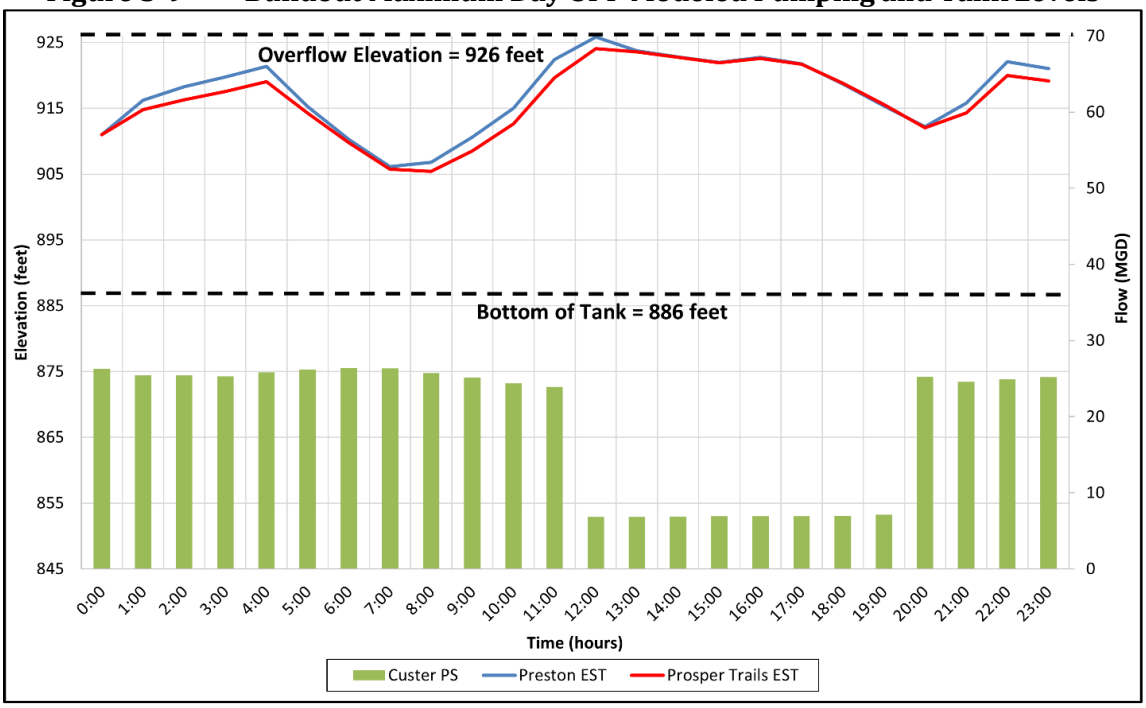
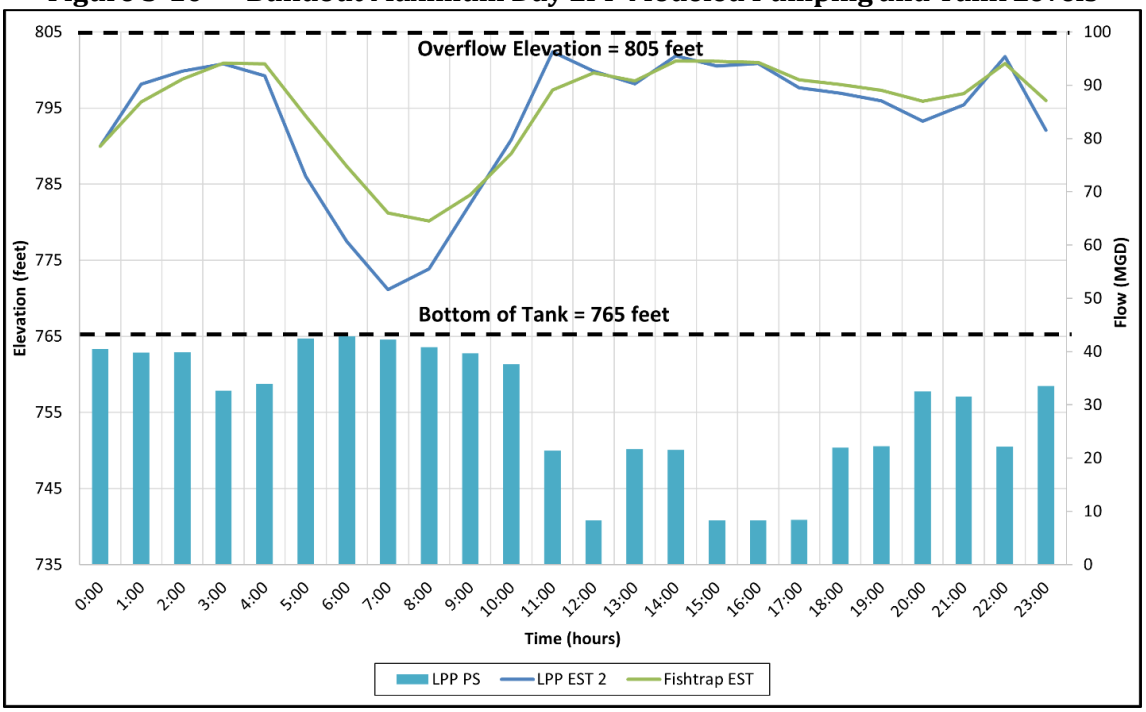


Figure 3-10 Buildout Maximum Day LPP Modeled Pumping and Tank Levels



3.5.2 Wastewater System Evaluation

Hydraulic analyses were performed on the collection system under peak flow conditions to identify deficiencies and establish a CIP to reinforce the existing system and convey projected wastewater flows through buildout. The system was evaluated under average flow conditions and peak flow conditions, which were modeled using a peaking factor of 4.0. Various combinations of improvements and modifications were investigated to determine the most appropriate approach for conveying projected flows.

Central to the wastewater system analysis was the assumed conversion of a portion of Prosper to UTRWD from NTMWD. These areas are included in basins 1 and 2, as identified in **Figure B-1**. The areas that are expected to convert are those that would naturally flow west to UTRWD but are currently pumped east to NTMWD at the existing lift station at the abandoned WWTP. The existing lift station is expected to be abandoned and flow from this area conveyed west by 2028.

A second priority in the wastewater system analysis was lift station consolidation, which will reduce regular maintenance and costs associated with operating them. The lift stations targeted for decommissioning are concentrated in the western portion of the Town, where the majority of growth is expected to take place over the next ten years.

3.6 Water and Wastewater System Improvements

Proposed water and wastewater system projects to serve the system through buildout were developed as part of this project based on load projections and design criteria. All recommended infrastructure is sized to meet the projected buildout peak water demands and wastewater flows. It is recommended that these projects be constructed generally in the order listed; however, development patterns may make it necessary to construct some projects sooner than anticipated. Locations shown for new lines and other recommended improvements were generalized for hydraulic analyses. Specific alignments and sites will be determined as part of the design process. Prioritization and phasing of these projects were determined by the required capacity as projected by the hydraulic models. The proposed water system improvements recommended to serve the Town through buildout water system are shown on **Figure 3-11** and summarized in **Table 3-6**. Water system improvements include recommendations within the Town's distribution system. It does not include meter vault improvements at the pump station site to increase supply from NTMWD. The most recent meter vault improvements included a 24-inch flow meter and 16-inch sleeve valve that should allow supply of up to 27 MGD. Based on the demand projections established

in this study, it is anticipated that the maximum day demand will exceed 27 MGD around 2027 and improvements will need to be made to increase supply from NTMWD prior to summer 2027. Water system proposed projects 1 and 2 facilitate the transfer of the area west of the railroad to the LPP by providing additional connectivity and a pressure reducing valve (PRV) to bleed from the UPP if pressures in the LPP are lower than desired in the highest elevation area of the LPP. Based on demand projections, the existing UPP PS has capacity to supply the current UPP area until 2032, but it is advantageous to move the pressure plane boundary to the DNT sooner for customers in the transfer area to have more consistent long-term pressures.

Proposed wastewater system improvements to serve the Town through buildout are shown on **Figure 3-12** and summarized in **Table 3-7**. The wastewater CIP was developed based on the assumption that the Town of Prosper will maximize flow to UTRWD's Doe Branch WWTP, at which the Town has purchased a total of 4.125 MGD annual average flow. The WWTP is being expanded and is expected to be in service in 2026. The Town has also purchased 4.125 MGD of capacity in the Doe Branch interceptor system. A parallel Doe Branch interceptor from Fishtrap Road to the WWTP is currently under design. It is also assumed that the Town will decommission the lift station at the abandoned WWTP by 2028 and convey its tributary flows west to UTRWD. Based on flow projections established in this study, it is anticipated that the Town will exceed its annual average flow subscription to UTRWD and need to purchase additional capacity by 2028.

Planning level cost estimates for the proposed water and wastewater system projects are included in **Appendix D** and **Appendix E**, respectively. Costs represent cost estimates for the design and construction of these capacity-related projects and do not include wholesale service fees or operations and maintenance costs. Unit costs are based on reviewing bid tabs for several projects ranging in size. The costs are provided as estimates based on previous similar engineering experience in 2025 dollars and include an allowance for engineering, surveying, and contingencies. The project cost estimates do not include an allowance for land or right of way acquisition. These costs are for planning and budgeting purposes only and are not to be considered as a detailed opinion of probable construction cost.

Table 3-6 Water System CIP Summary

Project Number	Project Name	Cost
2023-2028		
1	West Frontier Parkway 12-inch Water Line	$ 1,423,300
2	Talon Lane 12-inch Water Line and PRV	$ 539,100
3	Preston Road 12- and 16-inch Water Line	$ 3,922,900
4	Railroad 12-inch Water Line and PRV	$ 2,126,700
5	Railroad 12-inch Water Line	$ 2,081,100
6	South of First Street 12- and 30-inch Water Line	$ 8,357,100
7	First Street 12-inch Water Line	$ 2,236,600
8	East Broadway Street 12-inch Water Line	$ 2,185,700
9	Dallas Parkway 16-inch Water Line	$ 4,332,600
Short-Term Total		**$ 27,205,100**
2029-2033		
10	1.5 MG Prosper Road Elevated Storage Tank	$ 11,481,600
11	Legacy Drive 12- to 24-inch Water Line	$ 5,388,000
12	Frontier Parkway 12-inch Water Line	$ 3,471,400
13	Parvin Road 12- and 16-inch Water Line	$ 4,999,300
14	FM 1385 12-inch Water Line	$ 4,371,400
15	Parvin Road 12-inch Water Line	$ 6,317,900
Mid-Term Total		**$ 36,029,600**
2034-Buildout		
16	Expand LPP Firm Pumping Capacity to 40 MGD	$ 3,363,800
17	New 5 MG GST	$ 11,212,500
Long-Term Total		**$ 14,576,300**
CIP Total		**$ 77,811,000**

DRAFT FIGURE 3-11

TOWN OF PROSPER

BUILDOUT WATER SYSTEM CAPITAL IMPROVEMENT PROJECTS

LEGEND

- Pressure Reducing Valve
- Ground Storage Tank
- Elevated Storage Tank
- Pump Station
- 8" and Smaller Water Line
- 10" and Larger Water Line
- NTMWD Water Line
- Road
- Railroad
- Stream
- Lake
- Parcel
- Town Limit
- ETJ Boundary
- County Boundary

TOWN OF PROSPER

FREESE AND NICHOLS

PROPOSED IMPROVEMENTS

Under Design/Construction

- Elevated Storage Tank
- Ground Storage Tank
- Pump Station
- Water Line

5-Year Proposed Improvements

- Pressure Reducing Valve
- Water Line

10-Year Proposed Improvements

- Elevated Storage Tank
- Water Line

PRESSURE PLANES

- Upper Pressure Plane
- Lower Pressure Plane
- Transfer from UPP to LPP

Buildout Pump Station Improvements

16 Expand LPP Firm Pumping Capacity to 40 MGD (2034)

17 New 5 MG GST (2034)

The timing of projects shown is subject to change based on development patterns. The utility alignments shown in this figure are for illustration purposes only and do not set the alignments. The alignment of each utility will be determined at the time of the engineering design.

1.5 MG LPP (2032)
Elevated Storage Tank
Overflow Elev. = 805 ft.

2.5 MG Fishtrap
Elevated Storage Tank
Overflow Elev. = 805 ft.

2.0 MG Prosper Trail
Elevated Storage Tank
Overflow Elev. = 926 ft.

2.0 MG Preston
Elevated Storage Tank
Overflow Elev. = 926 ft.

Pressure Reducing Valve
(Inactive)

Modulated Transfer Valve
(Open)

Pressure Reducing Valve
(Inactive)

Pump Station
Meter Vault Improvements
LPP Firm Pumping Capacity = 26 MGD)
(1) - 6.0 MG Ground Storage Tank (2026)
UPP Firm Pumping Capacity = 25 MGD
(1) - 3.0 MG Ground Storage Tank
(1) - 5.0 MG Ground Storage Tank
Overflow Elev. = 714 ft.

DENTON CO
COLLIN CO

SCALE IN FEET
0 1,600 3,200

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Table 3-7 Wastewater System CIP Summary

Project Number	Project Name	Cost
2023-2028		
1	WWTP Lift Station and Force Main Decommissioning	$ 299,000
2	South Rutherford Branch Creek 10-inch Trunk Line	$ 762,500
3	New 10-inch Trunk Line to Under-Design 30-inch Interceptor	$ 1,300,700
4	Glenbrooke 10-inch Interceptor	$ 949,400
5	Lakes of Prosper Lift Station Decommissioning and 18-inch Interceptor	$ 4,514,900
6	Doe Branch 10- to 15-inch Lines	$ 5,643,700
	5-Year Total	**$ 13,470,200**
2029-2033		
7	University Drive and Dallas Parkway 12- and 15-inch Interceptor	$ 3,005,000
8	Gentle Creek 8-inch Gravity Main	$ 1,809,000
	10-Year Total	**$ 4,814,000**
2034-Buildout		
9	Cedar Ridge Estates and Whispering Farms 10-inch Interceptors	$ 3,191,900
10	Wilson Creek 10- to 15-inch Interceptors	$ 8,678,500
	Buildout Total	**$ 11,870,400**
	CIP Total	**$ 30,154,600**

DRAFT FIGURE 3-12

TOWN OF PROSPER

BUILDOUT WASTEWATER SYSTEM CAPITAL IMPROVEMENT PROJECTS

LEGEND

Existing Wastewater System

- Manhole
- Lift Station
- Wastewater Treatment Plant
- 8" and Smaller Wastewater Line
- 10" and Larger Wastewater Line
- Force Main
- UTRWD Wastewater Line
- NTMWD Wastewater Line
- Road
- Railroad
- Stream
- Lake
- Parcel
- Town Limit
- ETJ Boundary
- County Boundary

FREESE NICHOLS

TOWN OF PROSPER

The timing of projects shown is subject to change based on development patterns. The utility alignments shown in this figure are for illustration purposes only and do not set the alignments. The alignment of each utility will be determined at the time of the engineering design.

PROPOSED IMPROVEMENTS

Under Design/Construction

- Metering Station
- Lift Station
- Wastewater Line
- Decommission Force Main

Buildout Proposed Improvements

- Wastewater Line

5-Year Proposed Improvements

- Lift Station
- Wastewater Line
- Decommission Force Main

10-Year Proposed Improvements

- Wastewater Line

FLOW METER BASINS

- FM Basin 1
- FM Basin 2
- FM Basin 3
- FM Basin 4
- FM Basin 5
- FM Basin 6
- FM Basin 8
- FM Basin 9
- FM Basin 10
- FM Basin POE 1
- FM Basin POE 2
- FM Basin POE 3
- Not Metered

Flow to UTRWD

Flow to NTMWD (Wilson Creek)

Decommission LS and FM

Decommission LS and FM

Decommission LS and FM

Decommission LS and FM

12" F.M.

La Cima Lift Station
Capacity = 3.0 MGD

Doe Branch Wastewater Treatment Plant
(UTRWD)

DENTON CO

COLLIN CO

0 1,600 3,200

SCALE IN FEET

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3.7 Water and Wastewater Impact Fee Analysis

The impact fee analysis involves determining the utilization of existing and proposed projects required as defined by the CIP to serve new development over the next 10-year time period. For existing or proposed projects, the impact fee is calculated as a percentage of the project cost, based upon the percentage of the project's capacity required to serve development projected to occur between 2023 and 2033. Capacity serving existing development and development projected in more than 10 years in the future is not impact fee eligible.

3.7.1 Eligible CIP Costs

A summary of the costs for each of the projects required for the 10-year growth period used in the impact fee analysis for both the water and wastewater systems are shown in **Table 3-6** and **Table 3-7**, respectively. Costs listed for the existing projects are based on actual design and construction costs provided by the Town. **Table 3-8** and **Table 3-9** show 2023 percent utilization as the portion of a project's capacity required to serve existing development. It is not included in the impact fee analysis. The 2033 percent utilization is the portion of the project's capacity that will be required to serve the Town of Prosper in 2033. The 2023-2033 percent utilization is the portion of the project's capacity required to serve development from 2023 to 2033. The water and wastewater hydraulic models were used to assist in the calculation of project utilization percentages. The portion of a project's total cost that is used to serve development projected to occur from 2023 through 2033 is calculated as the total actual cost multiplied by the 2023-2033 percent utilization. Only this portion of the cost is used in the impact fee analysis. The proposed 10-year water system impact fee CIP is shown on **Figure 3-13.** Proposed 10-year wastewater impact fee CIP is shown on **Figure 3-14**.

Table 3-8 Water System Impact Fee Eligible Project Summary

No.	Description of Project	Project Status	Percent Utilization			Capital Cost	Costs Based on 2023 Dollars		
			2023	2033	2023-2033		Current Development	10-Year (2023-2033)	Beyond 2033
	EXISTING PROJECTS								
A1	Meter Vault Improvements	Existing	44%	100%	56%	$ 3,878,731	$ 1,706,642	$ 2,172,089	$ 1,706,642
A2	LPP Firm Pumping Capacity = 26 MGD	Under Design/ Construction	42%	98%	56%	$ 16,486,500	$ 6,848,238	$ 9,308,532	$ 7,177,968
A3	UPP Firm Pumping Capacity = 25 MGD	Existing	60%	87%	27%	$ 759,030	$ 455,418	$ 204,938	$ 554,092
A4	6.0 MG GST	Under Design/ Construction	0%	95%	95%	$ 12,102,970	$ -	$ 11,497,822	$ 605,148
A5	42-inch Water Line	Under Design/ Construction	27%	70%	43%	$ 8,884,707	$ 2,398,871	$ 3,820,424	$ 5,064,283
B	UPP 24- and 30-inch Transmission Main	Existing	59%	90%	31%	$ 5,385,085	$ 3,177,200	$ 1,669,376	$ 3,715,709
C	University Drive 30-inch Water Line	Existing	59%	93%	34%	$ 2,721,054	$ 1,605,422	$ 925,158	$ 1,795,896
D	University Drive 16- and 20-inch Water Line	Existing	76%	89%	13%	$ 3,015,000	$ 2,291,400	$ 391,950	$ 2,623,050
E	Legacy 16-inch Water Line, Fishtrap 20-inch Water Line and 2.5 MG EST	Existing	60%	100%	40%	$ 7,267,215	$ 4,360,329	$ 2,906,886	$ 4,360,329
F	University 20-inch Water Line, Gee 24-inch Water Line and Fishtrap 24-inch Water Line	Existing	56%	84%	28%	$ 2,303,437	$ 1,289,925	$ 644,962	$ 1,658,475
G	2.0 MG Prosper Trail EST and 20-inch Water Line	Existing	10%	60%	50%	$ 4,008,044	$ 400,804	$ 2,004,022	$ 2,004,022
H	Preston 16-inch Water Line	Under Design/ Construction	0%	98%	98%	$ 471,688	$ -	$ 463,386	$ 8,302
I	Dallas Parkway 12-inch Water Line	Under Design/ Construction	0%	75%	75%	$ 1,374,693	$ -	$ 1,031,020	$ 343,673
J	Dallas Parkway and Prosper Trail 12- and 20-inch Water Line	Existing	41%	88%	47%	$ 1,906,114	$ 781,507	$ 895,874	$ 1,010,240
K	Legacy Drive 24-inch Water Line	Under Design/ Construction	0%	90%	90%	$ 2,560,000	$ -	$ 2,304,000	$ 256,000
L	FM 1385 and University Drive 12-inch Water Line	Existing	50%	100%	50%	$ 740,559	$ 370,280	$ 370,280	$ 370,280
M	Teel Parkway 16- and 20-inch Water Line	Existing	22%	63%	41%	$ 2,685,968	$ 590,913	$ 1,101,247	$ 1,584,721
N	Prosper Road 24-inch Water Line	Under Design/ Construction	0%	78%	78%	$ 2,100,000	$ -	$ 1,638,000	$ 462,000
O	Dallas Parkway 16-inch Water Line and Prairie Drive 12-inch Line	Under Design/ Construction	0%	94%	94%	$ 2,057,543	$ -	$ 1,934,090	$ 123,453
P	Preston Road 20-inch Water Line	Existing	70%	100%	30%	$ 1,054,169	$ 737,918	$ 316,251	$ 737,918
Q	42-inch Transmission Line, Dallas Parkway 24-inch Parallel and First Street 20-inch Water Line	Existing	7%	90%	82.8%	$ 12,916,706	$ 924,054	$ 10,700,981	$ 2,215,725
R	Impact Fee Study	Existing	0%	100%	100%	$ 129,857	$ -	$ 129,857	$ -
Existing Project Subtotal						**$ 94,809,070**	**$ 27,938,921**	**$ 56,431,145**	**$ 38,377,926**
	PROPOSED PROJECTS								
1	West Frontier Parkway 12-inch Water Line	Proposed	0%	82%	82%	$ 1,423,300	$ -	$ 1,167,106	$ 256,194
2	Talon Lane 12-inch Water Line and PRV	Proposed	0%	100%	100%	$ 539,100	$ -	$ 539,100	$ -
3	Preston Road 12- and 16-inch Water Line	Proposed	0%	97%	97%	$ 3,922,900	$ -	$ 3,805,213	$ 117,687
4	Railroad 12-inch Water Line and PRV	Proposed	0%	100%	100%	$ 2,126,700	$ -	$ 2,126,700	$ -
5	Railroad 12-inch Water Line	Proposed	0%	85%	85%	$ 2,081,100	$ -	$ 1,768,935	$ 312,165
6	South of First Street 12- and 30-inch Water Line	Proposed	0%	95%	95%	$ 8,357,100	$ -	$ 7,939,245	$ 417,855
7	First Street 12-inch Water Line	Proposed	0%	95%	95%	$ 2,236,600	$ -	$ 2,124,770	$ 111,830
8	East Broadway Street 12-inch Water Line	Proposed	25%	86%	61%	$ 2,185,700	$ 546,425	$ 1,879,702	$ 305,998
9	Dallas Parkway 16-inch Water Line	Proposed	0%	82%	82%	$ 4,332,600	$ -	$ 3,552,732	$ 779,868
10	1.5 MG Prosper Road Elevated Storage Tank	Proposed	0%	20%	20%	$ 11,481,600	$ -	$ 2,296,320	$ 9,185,280
11	Legacy Drive 12- to 24-inch Water Line	Proposed	0%	80%	80%	$ 5,388,000	$ -	$ 4,310,818	$ 1,077,182
12	Frontier Parkway 12-inch Water Line	Proposed	0%	78%	78%	$ 3,471,400	$ -	$ 2,696,546	$ 774,854
13	Parvin Road 12- and 16-inch Water Line	Proposed	0%	89%	89%	$ 4,999,300	$ -	$ 4,445,385	$ 553,915
14	FM 1385 12-inch Water Line	Proposed	0%	70%	70%	$ 4,371,400	$ -	$ 3,067,532	$ 1,303,868
15	Parvin Road 12-inch Water Line	Proposed	0%	71%	71%	$ 6,317,900	$ -	$ 4,460,016	$ 1,857,884
Proposed Project Subtotal						**$ 63,234,700**	**$ 546,425**	**$ 46,180,120**	**$ 17,054,580**
Total Capital Improvements Cost						**$ 158,043,770**	**$ 28,485,346**	**$ 102,611,265**	**$ 55,432,506**

(1) Utilization in 2023 on Proposed Projects indicates a portion of the project that will be used to address deficiencies within the existing system or serve existing system, and therefore are not eligible for impact fee cost recovery for future growth.

Table 3-9 Wastewater System Impact Fee Eligible Project Summary

No.	Description of Project	Project Status	Percent Utilization			Capital Cost	Costs Based on 2023 Dollars		
			2023	2033	2023-2033		Current Development	10-Year (2023-2033)	Beyond 2033
EXISTING PROJECTS									
A	18- to 30-inch Interceptor to old WWTP site	Existing	55%	98%	43%	$ 2,319,193	$ 1,275,556	$ 997,253	$ 1,321,940
B	FM 2478 8- to 24-inch Interceptor	Existing	14%	84%	70%	$ 2,172,409	$ 304,137	$ 1,520,686	$ 651,723
C	Basin 4/5 12- and 24-inch interceptor	Existing	80%	93%	13%	$ 2,245,000	$ 1,796,000	$ 291,850	$ 1,953,150
D	Basin 6/POE 1 18- to 27-inch Interceptor	Existing	17%	88%	71%	$ 1,700,000	$ 289,000	$ 1,207,000	$ 493,000
E	Basin 6 15- and 18-inch Interceptor	Existing	5%	72%	67%	$ 777,639	$ 38,882	$ 521,018	$ 256,621
F	West Prosper 10- to 36-inch Trunk Line	Existing	11%	61%	50%	$ 5,700,000	$ 627,000	$ 2,850,000	$ 2,850,000
G	10-inch Force Main and 12- and 18-inch Interceptor to convey flow from La Cima LS	Existing	90%	100%	10%	$ 435,000	$ 391,500	$ 43,500	$ 391,500
H	21- and 24-inch Interceptor from old WWTP site	Existing	46%	55%	9%	$ 1,028,198	$ 472,971	$ 92,538	$ 935,660
I	Doe Branch Creek 24- to 36-inch Interceptor	Existing	15%	77%	62%	$ 3,075,469	$ 461,320	$ 1,906,791	$ 1,168,678
J	DISD 18-inch Wastewater Line	Under Design/ Construction	0%	69%	69%	$ 116,010	$ -	$ 80,047	$ 35,963
K	Frontier Parkway 12- to 27-inch Interceptor	Under Design/ Construction	0%	69%	69%	$ 5,492,167	$ -	$ 3,789,595	$ 1,702,572
L	Teel Parkway 10-inch Wastewater Line	Under Design/ Construction	0%	100%	100%	$ 107,603	$ -	$ 107,603	$ -
M	Impact Fee Study	Existing	0%	100%	100%	$ 129,857	$ -	$ 129,857	$ -
Existing Project Subtotal						**$ 25,298,545**	**$ 5,656,366**	**$ 13,537,738**	**$ 11,760,807**
PROPOSED PROJECTS									
2	South Rutherford Branch Creek 10-inch Trunk Line	Proposed	0%	99%	99%	$ 762,500	$ -	$ 754,875	$ 7,625
3	New 10-inch Trunk Line to Under-Design 30-inch Interceptor	Proposed	0%	55%	55%	$ 1,300,700	$ -	$ 717,973	$ 582,727
4	Glenbrooke 10-inch Interceptor	Proposed	0%	64%	64%	$ 949,400	$ -	$ 607,616	$ 341,784
5	Lakes of Prosper Lift Station Decommissioning and 18-inch Interceptor	Proposed	73%	96%	23%	$ 4,514,900	$ 3,295,877	$ 1,038,427	$ 3,476,473
6	Doe Branch 10- to 15-inch Lines	Proposed	0%	64%	64%	$ 5,643,700	$ -	$ 3,611,968	$ 2,031,732
7	University Drive and Dallas Parkway 12- and 15-inch Interceptor	Proposed	0%	51%	51%	$ 3,005,000	$ -	$ 1,532,550	$ 1,472,450
8	Gentle Creek 8-inch Gravity Main	Proposed	0%	100%	100%	$ 1,809,000	$ -	$ 1,809,000	$ -
-	Doe Branch WWTP Expansion	Under Design/ Construction	0%	100%	100%	$ 104,906,277	$ -	$ 104,906,277	$ -
-	Doe Branch Interceptor Expansion	Under Design/ Construction	0%	100%	100%	$ 16,253,257	$ -	$ 16,253,257	$ -
Proposed Project Subtotal						**$ 139,144,734**	**$ 3,295,877**	**$ 131,231,943**	**$ 7,912,791**
Total Capital Improvements Cost						**$ 164,443,279**	**$ 8,952,243**	**$ 144,769,681**	**$ 19,673,598**

(1)Utilization in 2023 on Proposed Projects indicates a portion of the project that will be used to address deficiencies within the existing system or serve existing system, and therefore are not eligible for impact fee cost recovery for future growth.

(2)Capital cost includes construction, engineering, inspection, land and permit costs. The cost does not include project management and overhead costs.

DRAFT FIGURE 3-13

TOWN OF PROSPER

WATER SYSTEM
IMPACT FEE ELIGIBLE
CAPITAL IMPROVEMENT PROJECTS

LEGEND

- Pressure Reducing Valve
- Ground Storage Tank
- Elevated Storage Tank
- Pump Station
- 8" and Smaller Water Line
- 10" and Larger Water Line
- NTMWD Water Line
- Road
- Railroad
- Stream
- Lake
- Parcel
- Town Limit
- ETJ Boundary
- County Boundary

TOWN OF PROSPER

FREESE AND NICHOLS

IMPACT FEE ELIGIBLE IMPROVEMENTS

Existing IF Eligible Improvements

- Elevated Storage Tank
- Ground Storage Tank
- Pump Station
- Water Line

5-Year Proposed IF Eligible Improvements

- Pressure Reducing Valve
- Water Line

10-Year Proposed IF Eligible Improvements

- Elevated Storage Tank
- Water Line

PRESSURE PLANES

- Upper Pressure Plane
- Lower Pressure Plane
- Transfer from UPP to LPP

The timing of projects shown is subject to change based on development patterns. The utility alignments shown in this figure are for illustration purposes only and do not set the alignments. The alignment of each utility will be determined at the time of the engineering design.

1.5 MG LPP (2032)
Elevated Storage Tank
Overflow Elev. = 805 ft.

2.5 MG Fishtrap
Elevated Storage Tank
Overflow Elev. = 805 ft.

2.0 MG Prosper Trail
Elevated Storage Tank
Overflow Elev. = 926 ft.

2.0 MG Preston
Elevated Storage Tank
Overflow Elev. = 926 ft.

Pressure Reducing Valve
(Inactive)

Modulated Transfer Valve
(Open)

Pressure Reducing Valve
(Inactive)

Pump Station
A1: Meter Vault Improvements
A2: LPP Firm Pumping Capacity = 26 MGD
A3: UPP Firm Pumping Capacity = 25 MGD
A4: (1) - 6.0 MG Ground Storage Tank (2026)
(1) - 3.0 MG Ground Storage Tank
(1) - 5.0 MG Ground Storage Tank
Overflow Elev. = 714 ft.

DENTON CO
COLLIN CO

0 1,600 3,200
SCALE IN FEET

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DRAFT FIGURE 3-14

TOWN OF PROSPER

WASTEWATER SYSTEM
IMPACT FEE ELIGIBLE
CAPITAL IMPROVEMENT PROJECTS

LEGEND

Existing IF Eligible Improvements
- Metering Station
- Lift Station
- Wastewater Line
- Force Main

5-Year Proposed IF Eligible Improvements
- Lift Station
- Wastewater Line
- Decommission Force Main

10-Year Proposed IF Eligible Improvements
- Wastewater Line

Existing Wastewater System
- Manhole
- Lift Station
- Wastewater Treatment Plant
- 8" and Smaller Wastewater Line
- 10" and Larger Wastewater Line
- Force Main
- UTRWD Wastewater Line
- NTMWD Wastewater Line
- Road
- Railroad
- Stream
- Lake
- Parcel
- Town Limit
- ETJ Boundary
- County Boundary

TOWN OF PROSPER

FREESE AND NICHOLS

FLOW METER BASINS

- FM Basin 1
- FM Basin 2
- FM Basin 3
- FM Basin 4
- FM Basin 5
- FM Basin 6
- FM Basin 8
- FM Basin 9
- FM Basin 10
- FM Basin POE 1
- FM Basin POE 2
- FM Basin POE 3
- Not Metered

The timing of projects shown is subject to change based on development patterns. The utility alignments shown in this figure are for illustration purposes only and do not set the alignments. The alignment of each utility will be determined at the time of the engineering design.

Flow to UTRWD

Flow to NTMWD (Wilson Creek)

Decommission LS and FM

Decommission LS and FM

Decommission LS and FM

Decommission LS and FM

La Cima Lift Station
Capacity = 3.0 MGD

Doe Branch Wastewater Treatment Plant
(UTRWD)

12" F.M.

10" F.M.

DENTON CO

COLLIN CO

SCALE IN FEET
0 1,600 3,200

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3.7.2 Service Units

The maximum impact fee may not exceed the amount determined by dividing the cost of capital improvements required by the total number of service units attributed to new development during the impact fee eligibility period. A water service unit is defined as the service equivalent to a water connection for a single-family residence. The Town of Prosper does not directly meter wastewater flows and bills for wastewater services based on the customer's water consumption. Therefore, a wastewater service unit is defined as the wastewater service provided to a customer with a water connection for a single-family residence.

The service associated with public, commercial, and industrial connections is converted into service units based upon the capacity of the meter used to provide service. The number of service units required to represent each meter size is based on the safe maximum operating capacity of the appropriate meter type. The Town primarily uses displacement meters size 2-inch and smaller for domestic service. Turbine meters are reserved for high flow service like irrigation. Compound meters are typically used for sizes greater than 2-inches. Compound meters are typically used for customers that have a large range of flows like a school, car wash or restaurant. The Town of Prosper provided the safe maximum operating capacity for each meter size based on guidance from Neptune meters. The service unit equivalent for each meter size used by the Town is listed in **Table 3-10**.

Typically, in Prosper, single-family residences are served with 1-inch positive displacement water meters. Larger meters represent multi-family, public, commercial, and industrial water use. The Town provided data that included the meter size of each active water meter as of March 2024. **Table 3-11** shows the actual number of water meters assumed for 2023 and the projected number of water meters for 2033. **Table 3-12** shows the wastewater service units for 2023 and the projected service units for 2033.

Table 3-10 Service Unit Equivalencies

Meter Size	Meter Type	Safe Maximum Operating Capacity (gpm)[1]	Service Unit Equivalent
5/8"	Displacement	20	0.4
1"	Displacement	50	1.0
1-1/2"	Displacement	100	2.0
1-1/2"	Turbine	160	3.2
2"	Displacement	160	3.2
2"	Turbine	200	4.0
3"	Compound	450	9.0
3"	Turbine	450	9.0
4"	Compound	1,000	20.0
4"	Turbine	1,200	24.0
6"	Compound	2,000	40.0
6"	Turbine	2,500	50.0
8"	Turbine	4,000	80.0
10"	Turbine	6,500	130.0

[1] Safe maximum operating capacity is based on Neptune Technology Meter capacities provided by the Town of Prosper.

Table 3-11 Water Service Units

Meter Size	2023 Meters[2]	2023 Service Units[1]	2033 Meters	2033 Service Units[1]	Growth in Service Units[1]
5/8"	2,146	858	2,146	858	0
1"	10,984	10,984	20,461	20,461	9,477
1 1/2"	129	258	255	510	252
2"	233	746	557	1,782	1,036
3"	18	162	39	351	189
4"	13	260	34	680	420
6"	0	0	2	80	80
Total	**13,523**	**13,268**	**23,494**	**24,722**	**11,454**

[1]Assumed all meters were displacement (5/8" through 2") or compound types (3" through 6") for the purpose of calculating service units.
[2] Meters smaller than 1" have been grandfathered into the system. All future water meters will be 1" or larger.

Table 3-12 Wastewater Service Units

Meter Size	2023 Meters[2]	2023 Service Units[1]	2033 Meters	2033 Service Units[1]	Growth in Service Units[1]
5/8"	2,027	811	2,027	811	0
1"	10,391	10,391	19,868	19,868	9,477
1 1/2"	121	242	247	494	252
2"	212	679	536	1,715	1,036
3"	17	153	38	342	189
4"	12	240	33	660	420
6"	0	0	2	80	80
Total	**12,780**	**12,516**	**22,751**	**23,970**	**11,454**

[1]Assumed all meters were displacement (5/8" through 2") or compound (3" through 6") types for the purpose of calculating service units.
[2] Meters smaller than 1" have been grandfathered into the system. All future water meters will be 1" or larger.

3.7.3 Maximum Impact Fee Calculations

Texas Government Code Chapter 395 outlines the procedures and requirements for calculating maximum allowable impact fees to recover costs associated with capital improvement projects needed due to growth over a 10-year period. Chapter 395 also requires a plan that addresses possible duplication of payments for capital improvements. This plan can either provide a credit for the portion of revenues generated by new development that is used for the payment of eligible improvements, including payment of debt, or reduce the total eligible project costs by 50 percent. The Town of Prosper has selected to utilize the reduction of the total eligible project costs by 50 percent to determine the maximum allowable impact fees.

Chapter 395 of the Texas Local Government Code states that the maximum impact fee may not exceed the amount determined by dividing the cost of capital improvements required by the total number of service units attributed to new development during the impact fee eligibility period less the credit to account for water and wastewater revenues used to finance CIPs.

The total projected costs include the projected capital improvements costs to serve 10-year development, the projected finance cost for the capital improvements, and the consultant cost for preparing and updating the CIP. A 4.0% interest rate was used to calculate financing costs. **Table 3-13** displays the maximum allowable impact fee for water and wastewater by meter size.

Water Impact Fee:

Impact Fee Eligible Capital Improvements Costs	$102,611,265
Financing Costs	$34,131,730
Total Eligible Costs	$136,742,995
Growth in Service Units	11,454

Maximum Water Impact Fee = Total Eligible Costs/Growth in Service Units
= $136,742,995/11,454
= $11,938 per Service Unit

Maximum Allowable Water Impact Fee = Maximum Impact Fee – Credit (50%)
= $11,938 - $5,969
= **$5,969 per Service Unit**

Wastewater Impact Fee:

Impact Fee Eligible Capital Improvements Costs	$144,769,681
Financing Costs	$48,154,943
Total Eligible Costs	$192,924,624
Growth in Service Units	11,454

Maximum Wastewater Impact Fee = Total Eligible Costs/Growth in Service Units
= $192,924,624/11,454
= $16,843 per Service Unit

Maximum Allowable Wastewater Impact Fee = Maximum Impact Fee – Credit (50%)
= $16,843 - $8,421
= **$8,421 per Service Unit**

Table 3-13 Impact Fee by Meter Size

Meter Size	Meter Type	Service Unit Equivalent	Water Fee[1]	Wastewater Fee[1]
5/8"	Displacement	0.4	$ 2,387	$ 3,368
1"	Displacement	1.0	$ 5,969	$ 8,421
1-1/2"	Displacement	2.0	$ 11,938	$ 16,842
1-1/2"	Turbine	3.2	$ 19,101	$ 26,947
2"	Displacement	3.2	$ 19,101	$ 26,947
2"	Turbine	4.0	$ 23,876	$ 33,684
3"	Compound	9.0	$ 53,721	$ 75,789
3"	Turbine	9.0	$ 53,721	$ 75,789
4"	Compound	20.0	$ 119,380	$ 168,420
4"	Turbine	24.0	$ 143,256	$ 202,104
6"	Compound	40.0	$ 238,760	$ 336,840
6"	Turbine	50.0	$ 298,450	$ 421,050
8"	Turbine	80.0	$ 477,520	$ 673,680
10"	Turbine	130.0	$ 775,970	$ 1,094,730

[1] Based on maximum allowable water and wastewater impact fees.

4.0 ROADWAY IMPACT FEE ANALYSIS

Chapter 395 of the Texas Local Government Code prescribes that roadway impact fees have service areas that are limited to six-miles, and within the Town limits, to ensure that capital improvements are built within the vicinity of new growth. Two service areas, bisected by the BNSF Railroad, were created as part of the initial program and remain the same today. Therefore, land use assumptions, capital improvements programming, and resultant impact fees are derived and administered for each service area. Capital improvements programming is rooted in the official Thoroughfare Plan of Prosper. Roadways classified as arterial, or collector class facilities are eligible for inclusion into the impact fee program. The recommended improvements for this programmatic update align with the Thoroughfare Plan and are aimed to address growth over the ten-year planning period.

4.1 Methodology

A series of work tasks were undertaken as part of this programmatic update and are described below.

1. Meetings were held with the Town Staff and the Capital Improvements Advisory Committee (CIAC) to discuss the methodology to be used in the update.
2. The roadway service area structure was retained from the previous 2017 study.
3. Vehicle-miles of travel in the PM peak hour were retained as the service unit measure for roadway impact fee calculations.
4. A roadway conditions inventory was conducted to update lane geometries, roadway classifications and segment lengths, as necessary, of facilities in the impact fee program. Using updated traffic volumes provided by the Town, service area deficiencies were identified within the network.
5. Projected growth (vehicle-miles) by service area over the ten-year planning period was forecasted using the defined Land Use Assumptions (Chapter 2) along with updated land use equivalencies of residential, office, industrial and commercial development. Projected growth between the years 2023 and 2033 of population and employment are detailed in Section 4.2.
6. The previous roadway impact fee capital improvements program (IFCIP) was reviewed to ensure excess capacity remained in the program and to incorporate revised growth figures for each service area. Town staff identified completed projects and updated the program.

7. Roadway cost data of construction, engineering, and right-of-way for planned impact fee projects were developed and compiled by service area based on data provided by the Town. For recently completed projects, actual costs were incorporated into the service area database.
8. For each service area, the cost of capacity provided by the CIP, cost attributable to ten-year growth, and the maximum cost per service unit were calculated. A credit of 50% was applied to the cost of the road CIP.
9. The Land Use Equivalency Table (service unit generation for specific land use categories) was updated to incorporate new trip rate and trip length data. Trip rate data was obtained from *Trip Generation, 11th Edition* by the Institute of Transportation Engineers (ITE). Trip length statistics of land use types were obtained from the NCTCOG travel demand model statistics and National Household Travel Survey data.

4.2 Roadway Impact Fee Calculation Inputs

4.2.1 Land Use Assumptions

Land use assumptions, presented in Section 2 of this report, detail forecasted demographic growth between 2023 and 2033 in Prosper. For roads, non-residential development expressed in terms of employment, were defined because of the different travel characteristics associated with these land use types. Data was derived by road service area as shown in **Figure 4-1**. **Table 4-1** presents the land use assumptions utilized in the roadway impact fee component.

Population and employment estimates and projections were all compiled in accordance with the following categories:

1. Dwelling Units: Number of dwelling units, both single and multi-family.
2. Employment: Square feet of building area based on three different classifications listed below. Each classification has their own unique trip making characteristics.
    - Retail: Land use activities which provide for the retail sale of goods that primarily serve households and whose locations choice is oriented toward the household sector, such as grocery stores and restaurants.
    - Service: Land use activities which provide personal and professional services such as government and other professional administrative offices.

- Basic: Land use activities that produce goods and services such as those that export outside of the local economy, such as manufacturing, construction, transportation, wholesale, trade, warehousing, and other industrial uses.

Table 4-1 Land Use Assumptions for Roadway Impact Fees

SA	Year	Population	Employment			
			Basic	Service	Retail	Total
SA 1 (W of RR)	2023	16,486	418	3,139	375	3,932
	2033	34,454	1,365	11,044	1,143	13,552
SA 2 (E of RR)	2023	22,357	601	4,523	541	5,665
	2033	29,983	1,090	8,821	916	10,827

4.2.2 Capital Improvements Plan

The Town has identified the Town-funded transportation projects needed to accommodate the projected growth within the Town. The CIP for Roadway Impact Fees is made up of:

- Recently completed projects with excess capacity available to serve new growth;
- Projects currently under construction; and
- Remaining projects needed to complete the Town's Master Thoroughfare Plan (MTP).

The defined roadway CIP is listed by service area in **Table 4-2** and **Table 4-3**, and mapped in **Figure 4-1**. Defined projects in the CIP, their limits, project length and project status (new or recoupment as a result of completion) are detailed. The CIP was developed in conjunction with input from Town Staff and represents those projects that will be needed to accommodate the growth projected in the *Land Use Assumptions* (**see Section 4.2.1**).

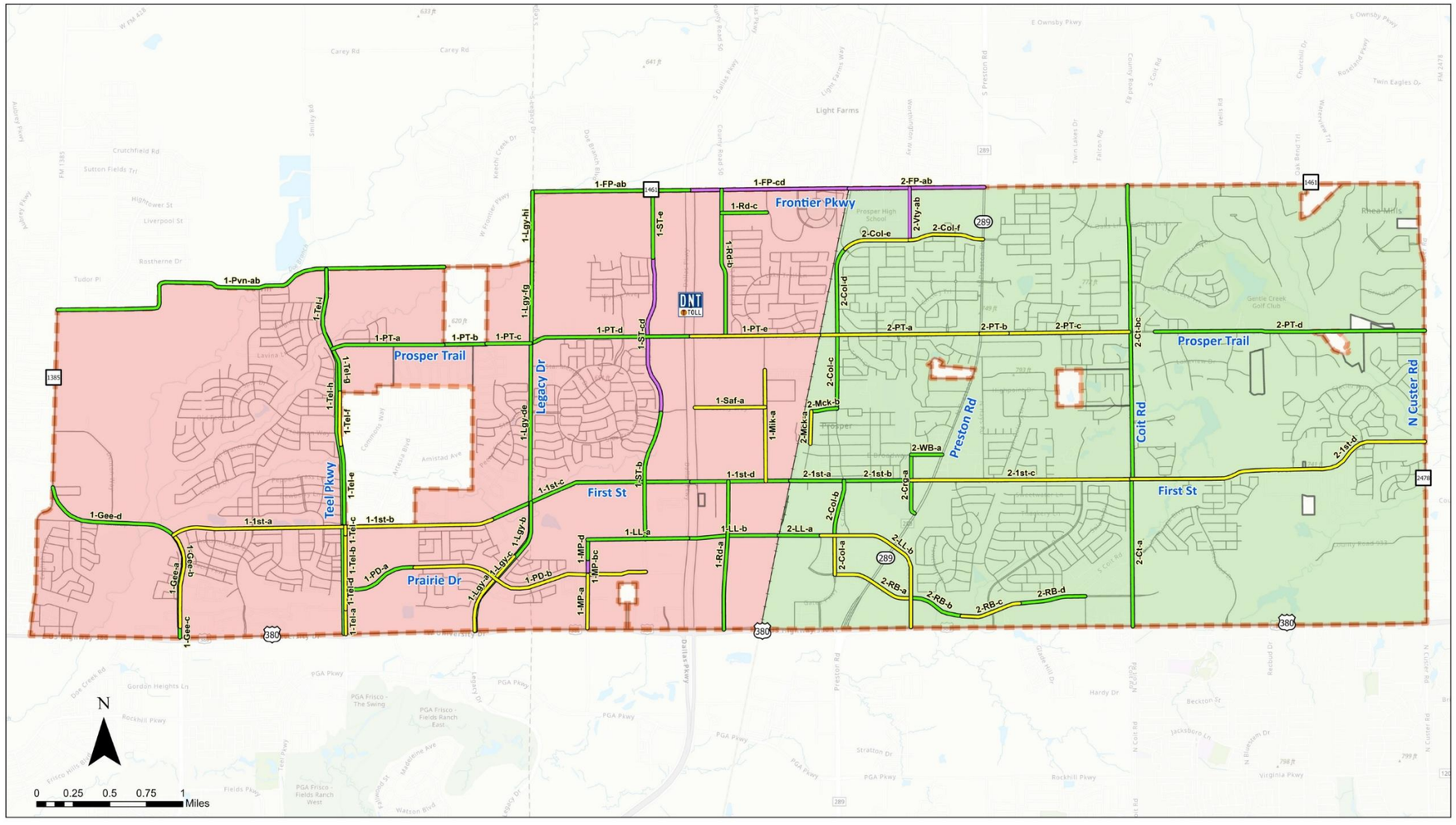
Table 4-2 10-Year Capital Improvements Plan for Roadway Impact Fees – Service Area 1

Serv Area	Reference CIP No.	Roadway	From	To	Project Status	Length (mi)	Added Lanes	Thoroughfare Plan Description	Pct. in Serv. Area
1	1-Gee-a	Gee Rd	0.187 mi N of US 380	First St	Recoup	0.65	2	Major Thoroughfare	100%
1	1-Gee-b	Gee Rd	0.187 mi N of US 380	First St	New	0.65	2	Major Thoroughfare	100%
1	1-Gee-c	Gee Rd	US 380	0.187 mi N of US 380	New	0.07	2	Major Thoroughfare	100%
1	1-Gee-d	Gee Rd	First St	FM 1385	New	0.97	4	Major Thoroughfare	100%
1	1-Tel-a	Teel Pkwy	US 380	871ft N of US 380	Recoup	0.17	2	Major Thoroughfare	100%
1	1-Tel-c	Teel Pkwy	First St	314 ft S of First St	Recoup	0.05	2	Major Thoroughfare	100%
1	1-Tel-b	Teel Pkwy	871ft N of US 380	314 ft S of First St	Recoup	0.51	2	Major Thoroughfare	100%
1	1-Tel-d	Teel Pkwy	US 380	First St	New	0.73	2	Major Thoroughfare	100%
1	1-Tel-e	Teel Pkwy	First St	381 ft N of Roundtree Dr	New	0.56	2	Major Thoroughfare	100%
1	1-Tel-f	Teel Pkwy	88 ft N of N Windsong Pkwy	381 ft N of Roundtree Dr	Recoup	0.36	2	Major Thoroughfare	100%
1	1-Tel-g	Teel Pkwy	88 ft N of N Windsong Pkwy	Prosper Trl	New	0.30	2	Major Thoroughfare	100%
1	1-Tel-h	Teel Pkwy	First St	Parvin Rd	New	1.77	2	Major Thoroughfare	100%
1	1-Tel-i	Teel Pkwy	Prosper Trl	Parvin Rd	New	1.23	2	Major Thoroughfare	100%
1	1-Lgy-b	Legacy Dr	Scarlet	First St	New	0.41	4	Major Thoroughfare	100%
1	1-Lgy-a	Legacy Dr	US 380	Scarlet Dr	Recoup	0.60	4	Major Thoroughfare	100%
1	1-Lgy-c	Legacy Dr	US 380	First St	New	1.00	2	Major Thoroughfare	100%
1	1-Lgy-f	Legacy Dr	Prosper Trl	Parvin Rd	New	0.57	2	Major Thoroughfare	100%
1	1-Lgy-g	Legacy Dr	Prosper Trl	Parvin Rd	New	0.57	2	Major Thoroughfare	100%
1/X	1-Lgy-h	Legacy Dr	Parvin Rd	Frontier Pkwy	New	0.47	2	Major Thoroughfare	50%
1/X	1-Lgy-i	Legacy Dr	Parvin Rd	Frontier Pkwy	New	0.47	2	Major Thoroughfare	50%
1	1-Lgy-d	Legacy Dr	First St	Prosper Trl	New	1.09	2	Major Thoroughfare	100%
1	1-Lgy-e	Legacy Dr	First St	Prosper Trl	New	1.09	2	Major Thoroughfare	100%
1	1-Rd-a	New Road A	US 380	First St	New	1.01	2	Commercial Collector	100%
1	1-Rd-c	New Road C	New Road B	Greenwood Memorial Dr	New	0.31	3	Commercial Collector	100%
1	1-Rd-b	New Road B	Prosper Trl	Frontier Pkwy	New	1.01	2	Commercial Collector	100%
1/X	1-Pvn-a	Parvin Rd	FM 1385	0.61 mi W of Legacy Drive	New	2.84	2	Major Thoroughfare	50%
1/X	1-Pvn-b	Parvin Rd	FM 1385	0.61 mi W of Legacy Drive	New	2.84	2	Major Thoroughfare	50%
1/X	1-FP-a	Frontier Pkwy	Legacy Dr	DNT	New	1.08	2	Major Thoroughfare	50%
1/X	1-FP-b	Frontier Pkwy	Legacy Dr	DNT	New	1.08	2	Major Thoroughfare	50%
1/X	1-FP-c	Frontier Pkwy	DNT	BNSF RR	Recoup	1.08	2	Major Thoroughfare	50%
1/X	1-FP-d	Frontier Pkwy	DNT	BNSF RR	New	1.08	2	Major Thoroughfare	50%
1	1-MP-a	Mahard Pkwy	US 380	Prairie Dr	Recoup	0.36	4	Major Thoroughfare	100%
1	1-MP-b	Mahard Pkwy	Prairie Dr	500 N of Prairie Dr	Recoup	0.10	2	Major Thoroughfare	100%
1	1-MP-c	Mahard Pkwy	Prairie Dr	500 N of Prairie Dr	New	0.10	2	Major Thoroughfare	100%
1	1-MP-d	Mahard Pkwy	500 N of Prairie Dr	Lovers Lane	New	0.13	4	Major Thoroughfare	100%
1	1-Saf-a	Safety Way	DNT	Mike Howard	Recoup	0.48	2	Commercial Collector	100%
1	1-PT-a	Prosper Trl	Teel Pkwy	2550' E of Teel Pkwy	New	0.77	2	Minor Thoroughfare	100%
1	1-PT-b	Prosper Trl	1617' E of Teel Pkwy	3149' E of Teel Pkwy	New	0.29	2	Minor Thoroughfare	100%
1	1-PT-c	Prosper Trl	3149' E of Teel Pkwy	Legacy Dr	New	0.30	2	Minor Thoroughfare	100%
1	1-PT-d	Prosper Trl	Legacy Dr	DNT	New	1.09	2	Minor Thoroughfare	100%
1	1-PT-e	Prosper Trl	DNT	BNSF RR	Recoup	0.88	2	Minor Thoroughfare	100%
1	1-1st-a	First St	Gee Rd	Teel Pkwy	Recoup	1.19	2	Minor Thoroughfare	100%
1	1-1st-b	First St	Teel Pkwy	Stuber E.S.	Recoup	1.01	2	Minor Thoroughfare	100%
1	1-1st-c	First St	Stuber E.S.	DNT	New	1.41	2	Minor Thoroughfare	100%
1	1-1st-d	First St	DNT	BNSF RR	New	0.68	2	Minor Thoroughfare	100%
1	1-PD-a	Prairie Dr	Teel Pkwy	290 ft W of Waters Edge Way	New	0.52	4	Minor Thoroughfare	100%
1	1-PD-b	Prairie Dr	290 ft W of Waters Edge Way	Shawnee Trl	Recoup	1.64	4	Minor Thoroughfare	100%
1	1-ST-c	Shawnee Trl	Star Trace Pkwy	982 ft N of Caruth Dr	Recoup	1.09	2	Minor Thoroughfare	100%
1	1-ST-b	Shawnee Trl	Lovers Lane	Star Trace Pkwy	New	0.88	4	Minor Thoroughfare	100%
1	1-ST-d	Shawnee Trl	Star Trace Pkwy	982 ft N of Caruth Dr	New	1.09	2	Minor Thoroughfare	100%
1	1-ST-e	Shawnee Trl	982 ft N of Caruth Dr	Frontier Pkwy	New	0.46	4	Minor Thoroughfare	100%
1	1-LL-b	Lovers Lane	DNT	BNSF RR	New	0.59	4	Minor Thoroughfare	100%
1	1-LL-a	Lovers Lane	Mahard Pkwy	DNT	New	0.72	4	Minor Thoroughfare	100%
1	1-Mik-a	Mike Howard	First St	1,200 ft S of Prosper Trl	Recoup	0.76	2	Commercial Collector	100%

Table 4-3 10-Year Capital Improvements Plan for Roadway Impact Fees – Service Area 2

Serv Area	Reference CIP No.	Roadway	From	To	Project Status	Length (mi)	Added Lanes	Thoroughfare Plan Description	Pct. in Serv. Area
2	2-Ct-a	Coit Rd	US 380	First St	New	1.01	2	Major Thoroughfare	100%
2	2-Ct-b	Coit Rd	First St	Frontier Pkwy	New	2.00	2	Major Thoroughfare	100%
2	2-Ct-c	Coit Rd	First St	Frontier Pkwy	New	2.00	2	Major Thoroughfare	100%
2/X	2-FP-a	Frontier Pkwy	BNSF RR	Preston Rd	Recoup	1.01	2	Major Thoroughfare	50%
2/X	2-FP-b	Frontier Pkwy	BNSF RR	Preston Rd	New	1.01	2	Major Thoroughfare	50%
2	2-PT-a	Prosper Trl	BNSF RR	Preston Rd	Recoup	1.11	2	Minor Thoroughfare	100%
2	2-PT-c	Prosper Trl	560' E of Preston Rd	Coit Rd	Recoup	0.83	2	Minor Thoroughfare	100%
2	2-PT-b	Prosper Trl	560' E of Preston Rd	Preston Rd	Recoup	0.18	2	Minor Thoroughfare	100%
2	2-PT-d	Prosper Trl	864' E of Coit Rd	Custer Rd	New	1.76	2	Minor Thoroughfare	100%
2	2-1st-a	First St	BNSF RR	N Coleman St	New	0.37	2	Minor Thoroughfare	100%
2	2-1st-b	First St	N Coleman St	Craig St	New	0.46	2	Minor Thoroughfare	100%
2	2-1st-c	First St	Craig St	Coit Rd	Recoup	1.51	2	Minor Thoroughfare	100%
2	2-1st-d	First St	Coit Rd	Custer Rd	Recoup	2.06	2	Minor Thoroughfare	100%
2	2-RB-a	Richland Blvd	Coleman	Lovers Lane	Recoup	0.56	4	Minor Thoroughfare	100%
2	2-RB-b	Richland Blvd	Lovers Lane	287' W of La Cima	New	0.37	4	Minor Thoroughfare	100%
2	2-RB-c	Richland Blvd	287' W of La Cima	160' E of La Cima	Recoup	0.41	4	Minor Thoroughfare	100%
2	2-RB-d	Richland Blvd	160' E of La Cima	Prosper Commons	New	0.45	4	Minor Thoroughfare	100%
2	2-Col-a	Coleman St	Richland Blvd	Lovers Lane	Recoup	0.27	2	Minor Thoroughfare	100%
2	2-Col-b	Coleman St	Lovers Lane	First St	New	0.38	2	Minor Thoroughfare	100%
2	2-Col-c	Coleman St	Gorgeous Rd	Prosper Trl	New	0.50	2	Minor Thoroughfare	100%
2	2-Col-d	Coleman St	Prosper Trl	Talon	New	0.61	2	Minor Thoroughfare	100%
2	2-Col-e	Coleman St	Talon	Victory Way	Recoup	0.46	2	Minor Thoroughfare	100%
2	2-Col-f	Coleman St	Victory Way	Preston Rd	Recoup	0.51	4	Minor Thoroughfare	100%
2	2-LL-b	Lovers Lane	Gateway Dr	US 380	Recoup	1.12	4	Minor Thoroughfare	100%
2	2-LL-a	Lovers Lane	BNSF RR	Gateway Dr	New	0.29	4	Minor Thoroughfare	100%
2	2-Vty-a	Victory Way	Coleman St	Frontier Pkwy	Recoup	0.36	2	Minor Thoroughfare	100%
2	2-Vty-b	Victory Way	Coleman St	Frontier Pkwy	New	0.36	2	Minor Thoroughfare	100%
2	2-Mck-a	McKinley St	Gorgeous Rd	W 5th St	Recoup	0.22	2	Old Town District	100%
2	2-Mck-b	McKinley St	Gorgeous Rd	Coleman St	New	0.18	2	Old Town District	100%
2	2-Crg-a	Craig Rd	Preston Rd	West Broadway St	New	0.42	2	Commercial Couplet	100%
2	2-WB-a	West Broadway St	Craig	Preston Rd	New	0.21	2	Old Town District	100%

Figure 4-1 CIP for Roadway Impact Fees



TOWN OF PROSPER

FREESE AND NICHOLS

Figure 4-1

Town of Prosper
Roadway Impact Fee
Capital Improvements Plan

Legend

Roadway Service Areas
- Service Area 1
- Service Area 2
- Roads
- Railroads

Status
- New
- Recoup
- Both

4.2.3 Service Area

Chapter 395 requires that service areas be defined for roadway impact fees to ensure that facility improvements are in proximity to areas generating needs. Legislative requirements stipulate that roadway service areas be limited to a six-mile maximum and must be located within the current Town limits. Transportation service areas are different from water and wastewater systems, which can include the Town limits and its ETJ or other defined service area. This is primarily because roadway systems are "open" to both local and regional (non-Town) use as opposed to a defined level of utilization from residents within a water and wastewater system. The result is that new development can only be assessed an impact fee based on the cost of necessary capital improvements within that service area. Two roadway service areas, illustrated in **Figure 4-1**, were retained in this update with revisions made to include any annexations since the last programmatic update.

4.2.4 Service Units

Service units establish a relationship between roadway projects and demand placed on the street system by development, as well as provide the ability to calculate and assess impact fees for specific development proposals. As defined in Chapter 395, "Service unit means a standardized measure of consumption, use, generation, or discharge attributable to an individual unit of development in accordance with generally accepted engineering or planning standards for a particular category of capital improvements or facility expansions."

To determine the roadway impact fee for a particular development, the service unit must accurately identify the impact that the development will have on the major roadway system (i.e., arterial and collector roads) serving the development. This impact is a combination of the number of new trips generated by the development, the particular peaking characteristics of the land-use(s) within the development, and the length of each new trip on the transportation system.

The service unit must also reflect the capacity provided by the roadway system and the demand placed on the system during peak, or design, conditions. Transportation facilities are designed and constructed to accommodate volumes expected to occur during peak hours (design hours). These peak hour volumes typically occur during the typical weekday as motorists travel to and from work.

The vehicle-mile during the PM peak hour serves as the service unit for impact fees in Prosper. This service unit establishes a more precise measure of capacity, utilization and intensity of land development through the use of published trip generation data. It also recognizes legislative requirements regarding trip length.

Another aspect of the service unit is the service volume that is provided (supplied) by a lane-mile of roadway facility. This number, also referred to as capacity, is a function of the facility type, facility configuration, number of lanes, and level of service. The hourly service volumes used in the Roadway Impact Fee Update are based upon Thoroughfare Capacity Criteria published by the NCTCOG and a review of its travel demand model hourly capacities. **Table 4-4** and **Table 4-5** show the service volumes utilized in this report.

Table 4-4 Service Capacity for Proposed Facility Types

Roadway Type (Classification)	Median Configuration	Hourly Vehicle-Mile Capacity per Lane-Mile of Roadway Facility
Collector Street (2LC)	Undivided	450
Commercial Couplet (3L)	Undivided	500
Minor Thoroughfare (4UA)	Undivided	525
Minor Thoroughfare (4LD)	Divided	650
Ultimate Major Thoroughfare (6LD)	Divided	700

Table 4-5 Service Capacity for Existing Facility Types

Roadway Type	Description	Hourly Vehicle-Mile Capacity per Lane-Mile of Roadway Facility
2UR	Rural Cross-Section (i.e., gravel, dirt, etc.)	150
2UA	Two lane undivided – Arterial Type	700
2UC	Two lane undivided – Collector Type	450
3SC	Three lane undivided (TWLTL) – Collector Type	500
3SA	Three lane undivided (TWLTL) – Arterial Type	700
4UA	Four lane undivided (TWLTL) – Arterial Type	525
4DA	Four lane divided – Arterial Type	650
5SA	Five lane undivided (TWLTL) – Arterial Type	700
6DA	Six lane divided – Arterial Type	700
SRA	Strategic Regional Arterial	925

4.2.5 Cost Per Service Unit

A fundamental step in the impact fee process is to establish the cost for each service unit. For roadways, this is the cost per vehicle-mile of capacity provided by the impact fee CIP improvements. This cost per service unit is the cost to construct a roadway (lane-mile) needed to accommodate a vehicle-mile of growth and is aligned with level of service corresponding to the Town's standards. The costs for service units are calculated based on the specific list of projects within each service area.

The cost per service unit is also rooted in capacity necessitated to address forecasted ten-year growth by service area. Chapter 395 requires that only the cost attributable to growth be considered in the impact fee calculation **(see Section 4.4**).

4.2.6 Cost of the CIP

In general, those costs associated with implementation of a roadway are eligible for inclusion and into the CIP and include design, right-of-way acquisition, and construction. Debt service is also eligible for inclusion. It is important to note that upon completion of the capital improvements identified in the CIP, the Town must recalculate the impact fee using the *actual* costs and make refunds if the difference of actual cost, less the impact fee paid, is greater than 10 percent. To prevent this situation, conservative estimates of project cost are considered.

Chapter 395.012 identifies roadway costs eligible for impact fee recovery. The law states that:

> *"An impact fee may be imposed only to pay the cost of constructing capital improvements for facility expansions, including and limited to the construction contract price, surveying and engineering fees, land acquisition costs, including land purchases, court awards and costs, attorney fees, and expert witness fees; and fees actually paid or contracted to be paid to an independent qualified engineer or financial consultant preparing or updating the capital improvements plan who is not an employee of the political subdivision."*
>
> *"Projected interest charges and other finance costs may be included in determining the amount of impact fees only if the impact fees are used for the payment of principal and interest on bonds, notes, or other obligations issued by or on behalf of the political subdivision to finance the capital improvements or facility expansions identified in the capital improvements plan and are not used to reimburse bond funds expended for facilities that are not identified in the capital improvements plan."*

The following details the individual cost components of the impact fee CIP.

Construction: Construction costs include those costs which are normally associated with construction, including: paving, dirt work (including sub-grade preparation, embankment fill and excavation), clearing and grubbing, retaining walls or other slope protection measures, and general drainage items which are necessary in order to build the roadway and allow the roadway to fulfill its vehicle carrying capability. Individual items may include; bridges, culverts, inlets and storm sewers, junction boxes, man holes, curbs and/or gutters, and channel linings and other erosion protection appurtenances. Other items included in cost estimates may include: sidewalks, traffic control devices at select locations (initial cost only), and minimal sodding/landscaping.

Engineering: These are the costs associated with the design and surveying necessary to construct the roadway. Because the law specifically references fees, it has generally been understood that in-house Town design and surveying cannot be included. Only those services that are contracted out can be included and it may be necessary to use outside design and surveying firms to perform the work. For planned projects, a percentage based on typical engineering contracts was used to estimate these fees.

Right-of-Way: Any land acquisition cost estimated to be necessary to construct a roadway can be included in the cost estimate. For planning purposes, only the additional amount of land needed to bring a roadway right-of-way to thoroughfare standard was considered. For example, if a 120' right-of-way for an arterial road was needed and 80' of right-of-way currently existed, only 40' would be considered in the acquisition cost.

The cost for right-of-way may vary based on location of project and will be based on data from the most current County Appraisal District data.

Debt Service: Predicted interest charges and finance costs may be included in determining the amount of impact fees only if the impact fees are used for the payment of principle and interest on bonds, notes, or other obligations issued by the Town to finance capital improvements identified in the impact fee capital improvements plans. They cannot be used to reimburse bond funds for other facilities.

Study Updates: The fees paid or contracted to be paid to an independent qualified engineer or financial consultant preparing or updating the capital improvements plan who is not an employee of the political subdivision can be included in the impact fees.

Only the cost necessitated by new development within the 10-year plan period will be considered for impact fee consideration. For example, if only 60% of the capacity provided by the impact fee CIP is

needed over the ten-year window, then only 60% of the cost associated with those facilities is considered in the cost per service unit calculation.

Table 4-6 and **Table 4-7** are the list of CIP projects for the Town of Prosper with conceptual level project cost estimates. Detailed cost estimates and the methodology used for each individual project can be seen in **Appendix F -** Conceptual Level Project Cost Estimates. It should be noted that these tables reflect only conceptual-level opinions or assumptions regarding the portions of future project costs that are potentially recoverable through impact fees. Actual costs of construction are likely to change with time and are dependent on market and economic conditions that cannot be precisely predicted at this time.

This CIP establishes the list of projects for which impact fees may be utilized. Monies collected in each roadway service area may only be used to fund those specific projects listed within the impact fee CIP.

Table 4-6 10-Year Capital Improvements Plan for Roadway Impact Fees with Conceptual Level Cost Projections – Service Area 1

Serv Area	Reference CIP No.	Roadway	From	To	Project Status	Length (mi)	Added Lanes	Thoroughfare Plan Description	Pct. in Serv. Area	**Total Project Cost**
1	1-Gee-a	Gee Rd	0.187 mi N of US 380	First St	Recoup	0.65	2	Major Thoroughfare	100%	1,949,400
1	1-Gee-b	Gee Rd	0.187 mi N of US 380	First St	New	0.65	2	Major Thoroughfare	100%	3,966,408
1	1-Gee-c	Gee Rd	US 380	0.187 mi N of US 380	New	0.07	2	Major Thoroughfare	100%	435,758
1	1-Gee-d	Gee Rd	First St	FM 1385	New	0.97	4	Major Thoroughfare	100%	24,314,353
1	1-Tel-a	Teel Pkwy	US 380	871ft N of US 380	Recoup	0.17	2	Major Thoroughfare	100%	306,932
1	1-Tel-c	Teel Pkwy	First St	314 ft S of First St	Recoup	0.05	2	Major Thoroughfare	100%	90,274
1	1-Tel-b	Teel Pkwy	871ft N of US 380	314 ft S of First St	Recoup	0.51	2	Major Thoroughfare	100%	920,795
1	1-Tel-d	Teel Pkwy	US 380	First St	New	0.73	2	Major Thoroughfare	100%	4,441,859
1	1-Tel-e	Teel Pkwy	First St	381 ft N of Roundtree Dr	New	0.56	2	Major Thoroughfare	100%	7,632,773
1	1-Tel-f	Teel Pkwy	88 ft N of N Windsong Pkwy	381 ft N of Roundtree Dr	Recoup	0.36	2	Major Thoroughfare	100%	669,865
1	1-Tel-g	Teel Pkwy	88 ft N of N Windsong Pkwy	Prosper Trl	New	0.30	2	Major Thoroughfare	100%	1,822,747
1	1-Tel-h	Teel Pkwy	First St	Parvin Rd	New	1.77	2	Major Thoroughfare	100%	6,910,570
1	1-Tel-i	Teel Pkwy	Prosper Trl	Parvin Rd	New	1.23	2	Major Thoroughfare	100%	8,522,232
1	1-Lgy-b	Legacy Dr	Scarlet	First St	New	0.41	4	Major Thoroughfare	100%	13,376,910
1	1-Lgy-a	Legacy Dr	US 380	Scarlet Dr	Recoup	0.60	4	Major Thoroughfare	100%	625,627
1	1-Lgy-c	Legacy Dr	US 380	First St	New	1.00	2	Major Thoroughfare	100%	3,652,778
1	1-Lgy-f	Legacy Dr	Prosper Trl	Parvin Rd	New	0.57	2	Major Thoroughfare	100%	3,964,230
1	1-Lgy-g	Legacy Dr	Prosper Trl	Parvin Rd	New	0.57	2	Major Thoroughfare	100%	2,238,493
1/X	1-Lgy-h	Legacy Dr	Parvin Rd	Frontier Pkwy	New	0.47	2	Major Thoroughfare	50%	1,635,260
1/X	1-Lgy-i	Legacy Dr	Parvin Rd	Frontier Pkwy	New	0.47	2	Major Thoroughfare	50%	923,822
1	1-Lgy-d	Legacy Dr	First St	Prosper Trl	New	1.09	2	Major Thoroughfare	100%	7,552,957
1	1-Lgy-e	Legacy Dr	First St	Prosper Trl	New	1.09	2	Major Thoroughfare	100%	4,258,508
1	1-Rd-a	New Road A	US 380	First St	New	1.01	2	Commercial Collector	100%	5,925,959
1	1-Rd-c	New Road C	New Road B	Greenwood Memorial Dr	New	0.31	3	Commercial Collector	100%	3,263,777
1	1-Rd-b	New Road B	Prosper Trl	Frontier Pkwy	New	1.01	2	Commercial Collector	100%	5,925,959
1/X	1-Pvn-a	Parvin Rd	FM 1385	0.61 mi W of Legacy Drive	New	2.84	2	Major Thoroughfare	50%	9,818,745
1/X	1-Pvn-b	Parvin Rd	FM 1385	0.61 mi W of Legacy Drive	New	2.84	2	Major Thoroughfare	50%	5,529,895
1/X	1-FP-a	Frontier Pkwy	Legacy Dr	DNT	New	1.08	2	Major Thoroughfare	50%	4,791,816
1/X	1-FP-b	Frontier Pkwy	Legacy Dr	DNT	New	1.08	2	Major Thoroughfare	50%	2,382,041
1/X	1-FP-c	Frontier Pkwy	DNT	BNSF RR	Recoup	1.08	2	Major Thoroughfare	50%	1,833,000
1/X	1-FP-d	Frontier Pkwy	DNT	BNSF RR	New	1.08	2	Major Thoroughfare	50%	2,115,007
1	1-MP-a	Mahard Pkwy	US 380	Prairie Dr	Recoup	0.36	4	Major Thoroughfare	100%	602,928
1	1-MP-b	Mahard Pkwy	Prairie Dr	500 N of Prairie Dr	Recoup	0.10	2	Major Thoroughfare	100%	594,948
1	1-MP-c	Mahard Pkwy	Prairie Dr	500 N of Prairie Dr	New	0.10	2	Major Thoroughfare	100%	721,004
1	1-MP-d	Mahard Pkwy	500 N of Prairie Dr	Lovers Lane	New	0.13	4	Major Thoroughfare	100%	1,315,106
1	1-Saf-a	Safety Way	DNT	Mike Howard	Recoup	0.48	2	Commercial Collector	100%	1,628,259
1	1-PT-a	Prosper Trl	Teel Pkwy	2550' E of Teel Pkwy	New	0.77	2	Minor Thoroughfare	100%	5,215,825
1	1-PT-b	Prosper Trl	1617' E of Teel Pkwy	3149' E of Teel Pkwy	New	0.29	2	Minor Thoroughfare	100%	1,973,358
1	1-PT-c	Prosper Trl	3149' E of Teel Pkwy	Legacy Dr	New	0.30	2	Minor Thoroughfare	100%	1,871,352
1	1-PT-d	Prosper Trl	Legacy Dr	DNT	New	1.09	2	Minor Thoroughfare	100%	5,625,916
1	1-PT-e	Prosper Trl	DNT	BNSF RR	Recoup	0.88	2	Minor Thoroughfare	100%	1,148,752
1	1-1st-a	First St	Gee Rd	Teel Pkwy	Recoup	1.19	2	Minor Thoroughfare	100%	2,866,000
1	1-1st-b	First St	Teel Pkwy	Stuber E.S.	Recoup	1.01	2	Minor Thoroughfare	100%	3,574,937
1	1-1st-c	First St	Stuber E.S.	DNT	New	1.41	2	Minor Thoroughfare	100%	9,537,195
1	1-1st-d	First St	DNT	BNSF RR	New	0.68	2	Minor Thoroughfare	100%	4,598,025
1	1-PD-a	Prairie Dr	Teel Pkwy	290 ft W of Waters Edge Way	New	0.52	4	Minor Thoroughfare	100%	5,448,010
1	1-PD-b	Prairie Dr	290 ft W of Waters Edge Way	Shawnee Trl	Recoup	1.64	4	Minor Thoroughfare	100%	4,523,471
1	1-ST-c	Shawnee Trl	Star Trace Pkwy	982 ft N of Caruth Dr	Recoup	1.09	2	Minor Thoroughfare	100%	3,986,439
1	1-ST-b	Shawnee Trl	Lovers Lane	Star Trace Pkwy	New	0.88	4	Minor Thoroughfare	100%	9,197,679
1	1-ST-d	Shawnee Trl	Star Trace Pkwy	982 ft N of Caruth Dr	New	1.09	2	Minor Thoroughfare	100%	5,885,726
1	1-ST-e	Shawnee Trl	982 ft N of Caruth Dr	Frontier Pkwy	New	0.46	4	Minor Thoroughfare	100%	4,815,524
1	1-LL-b	Lovers Lane	DNT	BNSF RR	New	0.59	4	Minor Thoroughfare	100%	6,185,000
1	1-LL-a	Lovers Lane	Mahard Pkwy	DNT	New	0.72	4	Minor Thoroughfare	100%	7,533,275
1	1-Mik-a	Mike Howard	First St	1,200 ft S of Prosper Trl	Recoup	0.76	2	Commercial Collector	100%	1,550,000
Sub-total SA 1						43.16				**$232,197,483**

Table 4-7 10-Year Capital Improvements Plan for Roadway Impact Fees With Conceptual Level Cost Opinions – Service Area 2

Serv Area	Reference CIP No.	Roadway	From	To	Project Status	Length (mi)	Added Lanes	Thoroughfare Plan Description	Pct. in Serv. Area	Total Project Cost
2	2-Ct-a	Coit Rd	US 380	First St	New	1.01	2	Major Thoroughfare	100%	3,950,065
2	2-Ct-b	Coit Rd	First St	Frontier Pkwy	New	2.00	2	Major Thoroughfare	100%	13,576,260
2	2-Ct-c	Coit Rd	First St	Frontier Pkwy	New	2.00	2	Major Thoroughfare	100%	7,794,571
2/X	2-FP-a	Frontier Pkwy	BNSF RR	Preston Rd	Recoup	1.01	2	Major Thoroughfare	50%	3,650,000
2/X	2-FP-b	Frontier Pkwy	BNSF RR	Preston Rd	New	1.01	2	Major Thoroughfare	50%	3,141,042
2	2-PT-a	Prosper Trl	BNSF RR	Preston Rd	Recoup	1.11	2	Minor Thoroughfare	100%	1,523,845
2	2-PT-c	Prosper Trl	560' E of Preston Rd	Coit Rd	Recoup	0.83	2	Minor Thoroughfare	100%	4,392,425
2	2-PT-b	Prosper Trl	560' E of Preston Rd	Preston Rd	Recoup	0.18	2	Minor Thoroughfare	100%	952,574
2	2-PT-d	Prosper Trl	864' E of Coit Rd	Custer Rd	New	1.76	2	Minor Thoroughfare	100%	12,354,891
2	2-1st-a	First St	BNSF RR	N Coleman St	New	0.37	2	Minor Thoroughfare	100%	2,494,351
2	2-1st-b	First St	N Coleman St	Craig St	New	0.46	2	Minor Thoroughfare	100%	3,138,400
2	2-1st-c	First St	Craig St	Coit Rd	Recoup	1.51	2	Minor Thoroughfare	100%	2,589,861
2	2-1st-d	First St	Coit Rd	Custer Rd	Recoup	2.06	2	Minor Thoroughfare	100%	11,321,640
2	2-RB-a	Richland Blvd	Coleman	Lovers Lane	Recoup	0.56	4	Minor Thoroughfare	100%	4,795,327
2	2-RB-b	Richland Blvd	Lovers Lane	287' W of La Cima	New	0.37	4	Minor Thoroughfare	100%	3,883,952
2	2-RB-c	Richland Blvd	287' W of La Cima	160' E of La Cima	Recoup	0.41	4	Minor Thoroughfare	100%	1,994,836
2	2-RB-d	Richland Blvd	160' E of La Cima	Prosper Commons	New	0.45	4	Minor Thoroughfare	100%	4,708,890
2	2-Col-a	Coleman St	Richland Blvd	Lovers Lane	Recoup	0.27	2	Minor Thoroughfare	100%	2,312,032
2	2-Col-b	Coleman St	Lovers Lane	First St	New	0.38	2	Minor Thoroughfare	100%	2,291,711
2	2-Col-c	Coleman St	Gorgeous Rd	Prosper Trl	New	0.50	2	Minor Thoroughfare	100%	3,006,788
2	2-Col-d	Coleman St	Prosper Trl	Talon	New	0.61	2	Minor Thoroughfare	100%	3,667,058
2	2-Col-e	Coleman St	Talon	Victory Way	Recoup	0.46	2	Minor Thoroughfare	100%	500,000
2	2-Col-f	Coleman St	Victory Way	Preston Rd	Recoup	0.51	4	Minor Thoroughfare	100%	311,830
2	2-LL-b	Lovers Lane	Gateway Dr	US 380	Recoup	1.12	4	Minor Thoroughfare	100%	9,590,652
2	2-LL-a	Lovers Lane	BNSF RR	Gateway Dr	New	0.29	4	Minor Thoroughfare	100%	3,046,358
2	2-Vty-a	Victory Way	Coleman St	Frontier Pkwy	Recoup	0.36	2	Minor Thoroughfare	100%	2,137,560
2	2-Vty-b	Victory Way	Coleman St	Frontier Pkwy	New	0.36	2	Minor Thoroughfare	100%	2,166,613
2	2-Mck-a	McKinley St	Gorgeous Rd	W 5th St	Recoup	0.22	2	Old Town District	100%	1,769,839
2	2-Mck-b	McKinley St	Gorgeous Rd	Coleman St	New	0.18	2	Old Town District	100%	1,561,888
2	2-Crg-a	Craig Rd	Preston Rd	West Broadway St	New	0.42	2	Commercial Couplet	100%	2,861,045
2	2-WB-a	West Broadway St	Craig	Preston Rd	New	0.21	2	Old Town District	100%	1,434,455
Sub-total SA 2						22.99				**$122,920,757**

4.2.7 Service Unit Calculation

To determine the cost per service unit, it is necessary to project the growth in vehicle-miles of travel for the service area for the ten-year study period. Growth from 2023 to 2033 is based upon projected changes in residential and non-residential growth for the period. In order to determine this growth, baseline estimates of population, basic square feet, service square feet, and retail square feet for 2023 were made along with projections for each of these demographic statistics through 2033. The *Land Use Assumptions* (**see Section 4.2.1**) details the growth estimates used for the impact fee determination.

The residential and non-residential statistics in the *Land Use Assumptions* provide the "independent variables" that are used to calculate the existing (2023) and projected (2033) transportation service units used to establish the roadway impact fee maximum rates within each service area. The roadway demand service units (vehicle-miles) for each service area are the sum of the vehicle-miles "generated" by each category of land use in the service area.

Land Use Assumptions: For the purpose of impact fees, all developed and developable land is categorized as either residential or non-residential. For residential land uses, the existing and projected population is converted to dwelling units. The number of dwelling units in each service area is multiplied by a *service unit equivalence* (SUE) to compute the vehicle-miles of travel that occur during the afternoon peak hour. This factor computes the average amount of demand caused by the residential land uses in the service area. The *service unit equivalence* is discussed in more detail below.

For non-residential land uses, the process is similar. The *Land Use Assumptions* provide the existing and projected amount of building square footages for three categories of non-residential land uses – basic, service, and retail. These categories correspond to an aggregation of other specific land use categories based on the North American Industrial Classification System (NAICS).

Building square footage is the most common independent variable for the estimation of non-residential trips in the *ITE Trip Generation Manual, 11th Edition*. This independent variable is more appropriate than the number of employees because building square footage is tied more closely to trip generation and is known at the time of application for any development or development modification that would require the assessment of an impact fee.

The existing and projected land use assumptions for the dwelling units and the square footage of basic, service, and retail land uses provided the basis for the projected increase in vehicle-miles of travel. As noted earlier, a *service unit equivalency* is applied to these values and then summed to calculate the total peak-hour vehicle-miles of demand for each service area.

Service Unit Equivalencies: The *service unit equivalencies* are aggregate rates derived from several sources – the *ITE, Trip Generation Manual, 11th Edition,* and the regional Origin-Destination Travel Survey performed by NCTCOG and the National Household Travel Survey (NHTS). The *ITE, Trip Generation Manual, 11th Edition,* provides the number of trips that are produced or attracted to the land use for each dwelling unit, square foot of building, or other corresponding unit. For the retail category of land uses, the rate is adjusted to account for the fact that a percentage of retail trips are made by people who would otherwise be traveling past that particular establishment anyway, such as a trip between work and home. These trips are called pass-by trips, and since the travel demand is accounted for in the land use calculations relative to the primary trip, it is necessary to discount the retail rate to avoid double-counting trips.

The next component of the *service unit equivalency* accounts for the length of each trip. The average trip length for each category is based on the region-wide travel characteristics survey conducted by the NCTCOG and the NHTS.

The computation of the *service unit equivalency* can be expressed as the product of the trip generation rate of the development, reduced for pass-by trips, and the average trip length, with a maximum length of 6 miles per service area limitations. For example, a development generating 100 vehicle trips in the PM peak hour with an average trip length of two miles would generate:

100 vehicle-trips x 2 miles/trip = 200 vehicle-miles

For land uses which are characterized by longer average trip lengths (primarily residential uses), the maximum trip length has been limited to six miles based on the maximum trip length within each service area per Chapter 395 of the Texas Local Government Code.

Additionally, the assessment of an individual development's impact fee is based on the premise that each vehicle-trip has an origin and a destination, and that the development end should pay for one-half of the cost necessary to complete each trip. To prevent the potential of double charging, trip lengths were divided by two to reflect half of the vehicle trip associated with development.

Table 4-8 shows the derivation of the *Service Unit Equivalency* for residential land uses and the three non-residential land use (employment by type) categories. The values utilized for all variables shown in the *service unit equivalency* equation are also shown in the table.

Table 4-8 Service Unit Equivalency Calculations

Variable	Residential	Basic	Service	Retail
Trip Rate	0.94	0.65	1.44	1.36
Pass-by Rate	0%	0%	0%	34%
Full Trip Length	14.82	10.02	10.92	6.43
Average Trip Length*	6.00	5.01	6.0	5.09
SUE	**5.64**	**3.26**	**8.64**	**6.92**

***** Average Trip Length is 79% (percent local trips) of the full trip length. All trip lengths were capped at 6.00 miles due to the maximum size of service areas.

The application of the demographic projections and the *service unit equivalencies* are presented in the 10-Year Growth Projections in **Table 4-9**. This table shows the total vehicle miles by service area for the years 2023 and 2033. These estimates and projections lead to the Vehicle Miles of Travel for both 2023 and 2033.

Table 4-9 Vehicle-Mile Trip Generation

Estimated Residential Growth Vehicle-Mile Trip Generation

Service Area	Added Population	Added Dwelling Units	Vehicle-Miles per DU	Total Vehicle-Miles
1	17,968	6,568	5.64	37,043
2	7,626	2,766	5.64	15,602

Estimated Basic Employment Growth Vehicle-Mile Generation

Service Area	Total Square Feet	Vehicle-Miles Per 1000/SF	Total Vehicle-Miles
1	1,136,400	3.26	3,701
2	586,800	3.26	1,911

Estimated Service Employment Growth Vehicle-Mile Generation

Service Area	Total Square Feet	Vehicle-Miles Per 1000/SF	Total Vehicle-Miles
1	3,952,500	8.64	34,150
2	2,149,000	8.64	18,567

Estimated Retail Employment Growth Vehicle-Mile Generation

Service Area	Total Square Feet	Vehicle-Miles Per 1000/SF	Total Vehicle-Miles
1	614,400	6.92	4,253
2	300,000	6.92	2,077

Persons Per DU

Service Area	Persons / DU
1	2.74
2	2.76

Square Ft per Employee

Type	SF/Employee
Basic	1,200
Service	500
Retail	800

Vehicle-mile Generation Summary

Service Area	Residential Growth Vehicle-Miles	Basic Growth Vehicle-Miles	Service Growth Vehicle-Miles	Retail Growth Vehicle-Miles	Total Growth Vehicle-Miles
1	37,043	3,701	34,150	4,253	**79,146**
2	15,602	1,911	18,567	2,077	**38,157**
Totals	52,644	5,612	52,717	6,329	**117,302**

4.3 Impact Fee Calculation

4.3.1 Maximum Assessable Roadway Impact Fee Per Service Unit

This section presents the maximum assessable roadway impact fee rate calculated for each service area. The maximum assessable roadway impact fee is the sum of the eligible Impact Fee CIP costs for the service area divided by the growth in travel attributable to new development projected to occur within the 10-year period. A majority of the components of this calculation have been described and presented in previous sections of this report. The purpose of this section is to document the computation for each service area and to demonstrate that the guidelines provided by Chapter 395 of the Texas Local Government Code have been addressed. **Table 4-10** illustrates the computation of the maximum assessable impact fee computed for each service area. Each row in the table is numbered to simplify the explanation of the calculation.

Line	Title	Description
1	*Total Vehicle-Miles of Capacity Added by the CIP*	The total number of vehicle-miles added to the service area based on the capacity, length, and number of lanes in each project. (from **Appendix G** – CIP Service Units of Supply)

Each project identified in the Roadway Impact Fee CIP will add a certain amount of capacity to the Town's roadway network based on its length and classification. This line displays the total amount added within the service area.

2	*Total Vehicle-Miles of Existing Demand*	A measure of the amount of traffic currently using the roadway facilities upon which capacity is being added. (from **Appendix G** – CIP Service Units of Supply)

A number of facilities identified in the Roadway Impact Fee CIP have traffic currently utilizing a portion of their existing capacity. This line displays the total amount of capacity along these facilities currently being used by existing traffic.

3	*Total Vehicle-Miles of Existing Deficiencies*	Number of vehicle-miles of travel that are not accommodated by the existing roadway system. (from **Appendix H** – Existing Roadway Facilities Inventory)

In order to ensure that existing deficiencies on the Town's roadway network are not recoverable through impact fees, this line is based on the entire roadway network within the service area. Any roadway within the service area that is deficient – even those not identified on the Roadway Impact Fee CIP – will have these additional trips removed from the calculation.

4	*Net Amount of Vehicle-Miles of Capacity Added*	A measurement of the amount of vehicle-miles added by the CIP that will not be utilized by existing demand. **(Line 1 – Line 2 – Line 3)**

5	*Total Cost of the CIP within the Service Area*	The total cost of the projects within the service area (from **Table 4-6/Table 4-7** - 10-Year Roadway Capital Improvements Plan with Conceptual Level Cost Projections)

This line simply identifies the total cost of all of the projects identified in the service area.

6	*Cost of Net Capacity Supplied*	The total CIP cost (**Line 5**) prorated by the ratio of Net Capacity Added (**Line 4**) to Total Capacity Added (**Line 1**). **[(Line 4 / Line 1) * (Line 5)]**

Using the ratio of vehicle-miles added by the Roadway Impact Fee CIP available to serve future growth to the total vehicle-miles added, the total cost of the Impact Fee CIP is reduced to the amount available for future growth (i.e., excluding existing usage and deficiencies).

7	*Cost to Meet Existing Needs and Usage*	The ratio of net capacity supplied (Line 4) divided by the total capacity supplied **(Line 1)** multiplied total project cost of the CIP **(Line 6)** subtracted from total project cost of the CIP (**Line 6**). **(Line 6 – ((Line 4/Line 1)*(Line 6))**

This line is provided for information purposes only – it is to present the portion of the total cost of the Roadway Impact Fee CIP that is required to meet existing demand.

8	*Total Vehicle-Miles of New Demand over Ten Years*	Based upon the growth projection provided in the *Land Use Assumptions* (**see Section 4.1.1**), an estimate of the number of new vehicle-miles within the service area over the next ten years. (from **Table 4-9**)

This line presents the amount of growth (in vehicle-miles) projected to occur within each service area over the next ten years.

9	*Percent of Capacity Added Attributable to New Growth* *Chapter 395 Check*	The result of dividing Total Vehicle-Miles of New Demand (**Line 8**) by the Net Amount of Capacity Added (**Line 4**), limited to 100% (**Line 10**). This calculation is required by Chapter 395 to ensure capacity added is attributable to new growth.

In order to ensure that the vehicle-miles added by the Roadway Impact Fee CIP do not exceed the amount needed to accommodate growth beyond the ten-year window, a comparison of the two values is performed. If the amount of vehicle-miles added by the Roadway Impact Fee CIP exceeds the growth projected to occur in the next ten years, the Roadway Impact Fee CIP cost is reduced accordingly.

10	*Cost of Capacity Added Attributable to New Growth*	The result of multiplying the Cost of Net Capacity Added (**Line 6**) by the Percent of Capacity Added Attributable to New Growth, limited to 100% (**Line 9**).

The value of the total Roadway Impact Fee CIP project costs (excluding financial costs) that may be recovered through impact fees. This line is determined considering the limitations to impact fees required by the Texas legislature.

4.3.2 Awarding the Roadway Impact Fee Credit

Chapter 395 of the Texas Local Government Code requires the capital improvements plan for roadway impact fees to contain specific enumeration of a plan for awarding the impact fee credit. Section 395.014 of the Code states:

"(7) A plan for awarding:

(A) a credit for the portion of ad valorem tax and utility service revenues generated by new service units during the program period that is used for the payment of improvements, including the payment of debt, that are included in the capital improvements plan; or

(B) In the alternative, a credit equal to 50 percent of the total projected cost of implementing the capital improvements plan…"

The following table summarizes the portions of **Table 4-10** that utilize this credit calculation, based on awarding a 50 percent credit.

Line	Title	Description
8	*Projected 10-yr Demand*	Projected 10 year Demand based on population and employment growth
11	*Financing Costs*	Using 4.0% Interest Rate for Bond Debt Service.
12	*Existing Impact Fee Fund Balance*	Existing Roadway Impact Fees in fund balance as of 2023.
13	*Cost of the CIP and Financing Attributable to New Growth*	The sum of the Cost of Capacity Added Attributable to New Growth, Financing Costs minus the Impact Fee Fund Balance. (**Line 10 + Line 11 – Line 12**)
14	*Pre-Credit Maximum Fee Per Service Unit*	Found by dividing the Cost of the CIP Attributable to New Growth (**Line 13**) by the Total Vehicle-Miles of New Demand Over Ten Years (**Line 8**). (**Line 13 / Line 8**)
15	*Maximum Assessable Fee Per Service Unit (50%)*	Found by dividing the Recoverable Cost of the CIP and Financing (**Line 13**) by the Total Vehicle-Miles of New Demand Over Ten Years (**Line 8**) and applying a credit equal to 50% of the total projected cost, as per section 395.014 of the Texas Local Government Code. (**Line 13 / Line 8**)

Table 4-10 Maximum Assessable Roadway Impact Fee

		SERVICE AREA	
LINE	**TITLE**	**1 (W. of RR)**	**2 (E. of RR)**
1	TOTAL VEH-MI OF CAPACITY ADDED BY THE CIP (FROM CIP SERVICE UNITS OF SUPPLY, **APPENDIX G**)	59,144	33,060
2	TOTAL VEH-MI OF EXISTING DEMAND (FROM CIP SERVICE UNITS OF SUPPLY, **APPENDIX G**)	6,363	6,345
3	TOTAL VEH-MI OF EXISTING DEFICIENCIES (FROM EXISTING ROADWAY FACILITIES INVENTORY, **APPENDIX H**)	6,566	956
4	NET AMOUNT OF VEH-MI OF CAPACITY ADDED (LINE 1- LINE 2 - LINE 3)	46,215	25,759
5	TOTAL COST OF THE CIP WITHIN SERVICE AREA (LINE 5)	$232,240,460	$122,944,780
6	COST OF NET CAPACITY SUPPLIED (LINE 4 / LINE 1)*(LINE 5)	$181,472,814	$95,794,229
7	COST TO MEET EXISTING NEEDS AND USAGE (LINE 5 - LINE 6)	$50,767,645	$27,150,551
8	TOTAL VEH-MI OF NEW DEMAND OVER TEN YEARS (FROM **Table 4-9** AND **Land Use Assumptions**)	79,146	38,157
9	PERCENT OF CAPACITY ADDED ATTRIBUTABLE TO GROWTH (LINE 8 / LINE 4)	100%	100%
10	COST OF CAPACITY ADDED ATTRIBUTABLE TO GROWTH (LINE 6 * LINE 10)	$181,472,814	$95,794,229
11	FINANCING COSTS	$29,760,312	$10,850,857
12	EXISTING IMPACT FEE FUND BALANCE	$0	$0
13	COST OF CIP AND FINANCING ATTRIBUTABLE TO GROWTH (LINE 11 + LINE 12 – LINE 13)	$211,233,127	$106,645,086
14	PRE-CREDIT MAX FEE PER SERVICE UNIT ($ PER VEH-MI) (LINE 14 / LINE 8)	$2,668	$2,794
15	MAX ASSESSABLE FEE PER SERVICE UNIT ($ PER VEH-MI) (LINE 13 / 10 Yr VMT Demand)	**$1,334**	**$1,397**

4.3.3 Roadway Impact Fee Equivalency Table

The roadway impact fee is determined by multiplying the impact fee rate by the number of service units projected for the proposed development. For this purpose, the Town utilizes the Land Use/Vehicle-Mile Equivalency Table, presented in **Table 4-11**. This table lists the predominant land uses that may occur within the Town of Prosper. For each land use, the development unit that defines the development's magnitude with respect to transportation demand is shown. If the exact use is not listed, one similar in trip-making characteristics can serve as a reasonable proxy. The individual land uses are grouped into categories, such as residential, office, commercial, industrial, and institutional.

The right-most column shows the vehicle-miles per development unit. This number is the product of the trip rate and the maximum trip length. This number, referred to as the *Service Unit Equivalence*, is used in the impact fee estimate to compute the number of service units consumed by each land use application. ***The number of service units is multiplied by the impact fee rate (established by ordinance, if applicable) in order to determine the impact fee for a development.***

Table 4-11 Land Use / Vehicle-Mile Equivalency Table

ITE Land Use	ITE Code	Development Unit	Trip Gen Rate (PM)	Pass By Rate	Diverted Trips	Ave. Trip Rate w/ Deductions	FNI Trip Length (mi)	Adj. Trip Length (mi)	Max. Trip Length (mi)	Veh-Mi Per Dev Unit
			1	2	3	4	5	6	7	8
RESIDENTIAL										
Single-family detached housing	210	Dwelling Units	0.94	0.0%	0.0%	0.94	14.82	7.41	6.00	**5.64**
Single-Family Attached Housing	215	Dwelling Units	0.57	0.0%	0.0%	0.57	14.82	7.41	6.00	**3.42**
Multifamily Housing (Low-Rise, 1-3 floors)	220	Dwelling Units	0.51	0.0%	0.0%	0.51	14.82	7.41	6.00	**3.06**
Multifamily Housing (Mid-Rise, 4-10 floors)	221	Dwelling Units	0.39	0.0%	0.0%	0.39	14.82	7.41	6.00	**2.34**
Condominium / Townhouse	230	Dwelling Units	0.36	0.0%	0.0%	0.36	14.82	7.41	6.00	**2.16**
Mid-Rise Residential w/Ground Floor Commercial (4-10 Foors)	231	Dwelling Units	0.17	0.0%	0.0%	0.17	14.82	7.41	6.00	**1.02**
Senior Adult Housing - Single Family	251	Dwelling Units	0.3	0.0%	0.0%	0.3	9.16	4.58	4.58	**1.37**
Senior Adult Housing - Multi-Family	252	Dwelling Units	0.25	0.0%	0.0%	0.25	9.16	4.58	4.58	**1.15**
Congregate Care Facility	253	Dwelling Units	0.18	0.0%	0.0%	0.18	10.3	5.15	5.15	**0.93**
Assisted Living Center	254	Beds	0.24	0.0%	0.0%	0.24	7.55	3.78	3.78	**0.91**
Continuing Care Retirement Community	255	Dwelling Units	0.19	0.0%	0.0%	0.19	7.55	3.78	3.78	**0.72**
Nursing Home	620	1,000 Sq Ft GFA	0.59	0.0%	0.0%	0.59	7.55	3.78	3.78	**2.23**
OFFICE										
General Office	710	1000 sq. ft.	1.44	0.0%	0.0%	1.44	10.92	8.64	6.00	**8.64**
Small Office Building	712	1000 sq. ft.	2.16	0.0%	0.0%	2.16	10.92	8.64	6.00	**12.96**
Corporate Headquarters Bldg	714	1000 sq. ft.	1.3	0.0%	0.0%	1.3	10.92	8.64	6.00	**7.80**
Medical-Dental Office	720	1000 sq. ft.	3.93	0.0%	0.0%	3.93	10.92	8.64	6.00	**23.58**
Government Building	730	1000 sq. ft.	1.71	0.0%	0.0%	1.71	10.92	8.64	6.00	**10.26**
U.S. Post Office	732	1000 sq. ft.	11.21	70.0%	0.0%	3.36	10.92	8.64	6.00	**20.16**
Office Park	750	1000 sq. ft.	1.3	0.0%	0.0%	1.3	10.92	8.64	6.00	**7.80**
Research and Development Center	760	1000 sq. ft.	0.98	0.0%	0.0%	0.98	10.92	8.64	6.00	**5.88**
Business Park	770	1000 sq. ft.	1.22	0.0%	0.0%	1.22	10.92	8.64	6.00	**7.32**
COMMERCIAL / Retail										
Automobile Related										
Automobile Sales (New)	840	1000 sq. ft.	2.42	0.0%	0.0%	2.42	4.47	3.54	3.54	**8.56**
Automobile Sales (used)	841	1000 sq. ft.	3.75	0.0%	0.0%	3.75	4.47	3.54	3.54	**13.27**
Recreational Vehicle Sales	842	1000 sq. ft.	0.77	0.0%	0.0%	0.77	5.8	4.59	4.59	**3.54**
Auto Parts Sales	843	1000 sq. ft.	4.9	43.0%	13.0%	2.16	6.43	5.09	5.09	**10.99**
Tire Store	848	1000 sq. ft.	3.75	28.0%	10.0%	2.33	6.43	5.09	5.09	**11.86**
Tire Superstore	849	1000 sq. ft.	2.11	24.5%	10.0%	1.38	6.43	5.09	5.09	**7.02**
Quick Lubrication Vehicle Shop	941	Service Positions	4.85	43.0%	0.0%	2.76	6.43	5.09	5.09	**14.05**
Automotive Care Center	942	1000 sq. ft.	3.11	43.0%	0.0%	1.77	6.43	5.09	5.09	**9.01**
Automobile Parts Service Center	943	1000 sq. ft.	2.06	0.0%	0.0%	2.06	6.43	5.09	5.09	**10.48**
Gasoline/Service Station	944	Fueling Positions	13.91	42.0%	31.2%	3.72	1.2	0.95	0.95	**3.53**
Convenience Store / Gas Station (2-4k sf)	945	Fueling Positions	18.42	56.0%	31.2%	2.35	1.2	0.95	0.95	**2.23**
Convenience Store / Gas Station (4-5.5k sf)	945	Fueling Positions	18.42	56.0%	31.2%	2.35	1.2	0.95	0.95	**2.23**
Convenience Store / Gas Station (5.5-10k sf)	945	Fueling Positions	18.42	56.0%	31.2%	2.35	1.2	0.95	0.95	**2.23**
Self-Service Car Wash	947	Wash Stalls	5.54	47.0%	25.7%	1.51	1.2	0.95	0.95	**1.43**
Automated Car Wash	948	Wash Tunnels	77.5	47.0%	25.7%	21.18	1.2	0.95	0.95	**20.12**
Car Wash and Detail Center	949	Wash Stalls	13.6	47.0%	25.7%	3.72	2.72	2.15	2.15	**8.01**
Truck Stop	950	Fueling Positions	15.42	42.0%	31.0%	4.16	8.6	6.81	6.00	**24.96**
Dining										
Fast Casual Restaurant	930	1000 sq. ft.	12.55	44.0%	27.0%	3.64	3.87	3.06	3.06	**11.15**
Quality Restaurant	931	1000 sq. ft.	7.8	44.0%	27.0%	2.26	3.87	3.06	3.06	**6.92**
High Turnover Restaurant (Sit-down)	932	1000 sq. ft.	9.05	42.6%	25.9%	2.85	3.87	3.06	3.06	**8.73**
Fast-Food Restaurant w/o Drive-Through Window	933	1000 sq. ft.	33.21	50.0%	23.3%	8.87	3.64	2.88	2.88	**25.56**
Fast Food Restaurant w/ Drive-Thru	934	1000 sq. ft.	33.03	55.0%	19.0%	8.59	3.64	2.88	2.88	**24.75**
Fast-Food Rest. w/Drive-Thru Window & No Indoor Seating	935	Drive Thru Lanes	59.5	31.0%	25.0%	26.18	3.64	2.88	2.88	**75.43**
Coffee/Donut Shop w/o Drive-Thru Window	936	1000 sq. ft.	32.29	0.0%	0.0%	32.29	3.64	2.88	2.88	**93.04**
Coffee/Donut Shop w/ Drive-Thru Window	937	1000 sq. ft.	38.99	50.0%	23.3%	10.42	3.64	2.88	2.88	**30.02**
Coffee/Donut Shop w/ Drive-Thru Window and No Indoor Seating	938	Drive Thru Lanes	15.08	83.0%	0.0%	2.56	3.64	2.88	2.88	**7.38**
Wine Tasting Room	970	1000 sq. ft.	7.31	44.0%	27.0%	2.12	3.87	3.06	3.06	**6.49**
Brewery Tap Room	971	1000 sq. ft.	9.83	44.0%	27.0%	2.85	3.87	3.06	3.06	**8.73**
Drinking Place/Bar	975	1000 sq. ft.	11.36	44.0%	27.0%	3.29	3.87	3.06	3.06	**10.08**
Other Retail										
Tractor Supply Store	810	1000 sq. ft.	1.4	0.0%	0.0%	1.4	4.26	3.37	3.37	**4.72**
Construction Equipment Rental Store	811	1000 sq. ft.	0.99	0.0%	0.0%	0.99	4.26	3.37	3.37	**3.34**
Building Materials and Lumber Store	812	1000 sq. ft.	2.25	0.0%	0.0%	2.25	4.06	3.21	3.21	**7.23**
Free-Standing Discount Superstore	813	1000 sq. ft.	4.33	29.0%	0.0%	3.07	2.35	1.86	1.86	**5.71**
Variety Store	814	1000 sq. ft.	6.7	34.0%	0.0%	4.42	2.35	1.86	1.86	**8.22**
Free-Standing Discount Store	815	1000 sq. ft.	4.86	17.0%	0.0%	4.03	2.35	1.86	1.86	**7.50**
Hardware/Paint Store	816	1000 sq. ft.	2.98	26.0%	28.0%	1.37	5.6	4.43	4.43	**6.07**
Garden Center	817	1000 sq. ft.	6.94	0.0%	0.0%	6.94	4.26	3.37	3.37	**23.40**
Nursery (Wholesale)	818	1000 sq. ft.	5.24	0.0%	0.0%	5.24	4.26	3.37	3.37	**17.67**
Retail/Shopping Center	820	1000 sq. ft.	3.4	34.0%	26.0%	1.36	6.43	5.09	5.09	**6.92**
Shopping Plaza (40-150K)	821	1000 sq. ft.	9.03	34.0%	26.0%	3.61	2.35	1.86	1.86	**6.72**
Strip Retail Plaza (<40K)	822	1000 sq. ft.	6.59	34.0%	26.0%	2.64	5.8	4.59	4.59	**12.12**
Supermarket	850	1000 sq. ft.	8.95	36.0%	28.0%	3.22	6.43	5.09	5.09	**16.39**
Convenience Store / Market	851	1000 sq. ft.	49.11	51.0%	20.0%	14.24	5.8	4.59	4.59	**65.38**
Discount Club	857	1000 sq. ft.	4.19	37.0%	0.0%	2.64	4.11	3.25	3.25	**8.59**
Wholesale Market	860	1000 sq. ft.	1.76	0.0%	0.0%	1.76	2.7	2.14	2.14	**3.76**
Sporting Goods Superstore	861	1000 sq. ft.	2.14	34.0%	26.0%	0.86	4.26	3.37	3.37	**2.90**
Home Improvement Superstore	862	1000 sq. ft.	2.29	42.0%	24.0%	0.78	4.26	3.37	3.37	**2.63**
Electronic Superstore	863	1000 sq. ft.	4.25	40.0%	33.0%	1.15	5.64	4.46	4.46	**5.13**
Pet Supply Superstore	866	1000 sq. ft.	3.55	40.0%	33.0%	0.96	4.26	3.37	3.37	**3.24**
Office Supply Superstore	867	1000 sq. ft.	2.77	40.0%	33.0%	0.75	4.26	3.37	3.37	**2.53**
Book Superstore	868	1000 sq. ft.	15.83	40.0%	33.0%	4.27	4.76	3.77	3.77	**16.09**
Discount Home Furnishing Superstore	869	1000 sq. ft.	1.57	40.0%	33.0%	0.42	4.26	3.37	3.37	**1.42**
Bed and Linen Superstore	872	1000 sq. ft.	2.22	40.0%	33.0%	0.6	4.26	3.37	3.37	**2.02**
Department Store	875	1000 sq. ft.	1.95	0.0%	0.0%	1.95	2.7	2.14	2.14	**4.17**
Apparel Store	876	1000 sq. ft.	4.12	0.0%	0.0%	4.12	3.5	2.77	2.77	**11.41**
Arts and Crafts Store	879	1000 sq. ft.	6.21	30.0%	0.0%	4.35	5.8	4.59	4.59	**19.97**
Pharmacy without drive thru	880	1000 sq. ft.	8.51	53.0%	14.0%	2.81	2.35	1.86	1.86	**5.23**
Pharmacy with drive thru	881	1000 sq. ft.	10.25	49.0%	13.0%	3.9	2.35	1.86	1.86	**7.25**
Furniture Store	890	1000 sq. ft.	0.52	53.0%	31.0%	0.08	4.83	3.82	3.82	**0.31**
Liquor Store	899	1000 sq. ft.	16.62	0.0%	0.0%	16.62	1.9	1.50	1.50	**25.00**

ITE Land Use	ITE Code	Development Unit	Trip Gen Rate (PM)	Pass By Rate	Diverted Trips	Ave. Trip Rate w/ Deductions	FNI Trip Length (mi)	Adj. Trip Length (mi)	Max. Trip Length (mi)	Veh-Mi Per Dev Unit
			1	2	3	4	5	6	7	8
SERVICES										
Bank Walk-In	911	1000 sq. ft.	12.13	47.0%	25.7%	3.32	3.39	2.68	2.68	**8.91**
Bank Drive-In	912	1000 sq. ft.	21.01	35.0%	19.0%	9.66	3.39	2.68	2.68	**25.92**
Hair Salon	918	1000 sq. ft.	1.45	0.0%	0.0%	1.45	3.39	2.68	2.68	**3.89**
LODGING										
Hotel	310	Rooms	0.59	0.0%	0.0%	0.59	6.43	3.22	3.22	**1.90**
All Suites Hotel (Extended Stay/Residency Hotel)	311	Rooms	0.36	0.0%	0.0%	0.36	6.43	3.22	3.22	**1.16**
Motel	320	Rooms	0.36	0.0%	0.0%	0.36	6.43	3.22	3.22	**1.16**
RECREATIONAL										
City Park	411	Acres	0.11	0.0%	0.0%	0.11	4.86	2.43	2.43	**0.27**
Golf Course	430	Holes	2.91	0.0%	0.0%	2.91	7.86	3.93	3.93	**11.44**
Golf Driving Range	432	Driving Positions	1.25	0.0%	0.0%	1.25	7.86	3.93	3.93	**4.91**
Batting Cages	433	Cages	2.22	0.0%	0.0%	2.22	2.09	1.05	1.05	**2.32**
Multi-Recreational Facility	435	1,000 Sq Ft GFA	3.58	0.0%	0.0%	3.58	2.09	1.05	1.05	**3.74**
Soccer Complex	488	Fields	16.43	0.0%	0.0%	16.43	2.09	1.05	1.05	**17.17**
Tennis and Pickleball Courts	490	Courts	4.21	0.0%	0.0%	4.21	2.35	1.18	1.18	**4.95**
Racquet/Tennis Club	491	Courts	3.82	0.0%	0.0%	3.82	6.43	3.22	3.22	**12.28**
Health/Fitness Club	492	1,000 Sq Ft GFA	3.45	0.0%	0.0%	3.45	6.43	3.22	3.22	**11.09**
Athletic Club	493	1,000 Sq Ft GFA	6.29	0.0%	0.0%	6.29	2.35	1.18	1.18	**7.39**
Health/Fitness Club	492	1,000 Sq Ft GFA	3.45	0.0%	0.0%	3.45	6.43	3.22	3.22	**11.09**
INDUSTRIAL										
General Light Industrial	110	1000 sq. ft.	0.65	0.0%	0.0%	0.65	10.02	5.01	5.01	**3.26**
Industrial Park	130	1000 sq. ft.	0.34	0.0%	0.0%	0.34	10.02	5.01	5.01	**1.70**
Manufacturing	140	1000 sq. ft.	0.74	0.0%	0.0%	0.74	12.12	6.06	6.00	**4.44**
Warehousing	150	1000 sq. ft.	0.18	0.0%	0.0%	0.18	11.15	5.58	5.58	**1.00**
Mini Warehouse (Self Storage)	151	1000 sq. ft.	0.15	0.0%	0.0%	0.15	10.83	5.42	5.42	**0.81**
Data Center	160	1000 sq. ft.	0.09	0.0%	0.0%	0.09	9.13	4.57	4.57	**0.41**
Utilities	170	1000 sq. ft.	2.16	0.0%	0.0%	2.16	9.13	4.57	4.57	**9.86**
MEDICAL										
Hospital	610	Beds	1.69	0.0%	0.0%	1.69	7.55	3.78	3.78	**6.38**
Clinic	630	1,000 Sq Ft GFA	3.69	0.0%	0.0%	3.69	7.55	3.78	3.78	**13.93**
Animal Hospital/Veterinary Clinic	640	1,000 Sq Ft GFA	3.53	0.0%	0.0%	3.53	7.55	3.78	3.78	**13.33**
Free-Standing Emergency Room	650	1,000 Sq Ft GFA	1.52	0.0%	0.0%	1.52	7.6	3.80	3.80	**5.78**
INSTITUTIONAL										
Elementary School	520	Students	0.16	0.0%	0.0%	0.16	3.41	1.71	1.71	**0.27**
Middle/Jr high school	522	Students	0.15	0.0%	0.0%	0.15	4.2	2.10	2.10	**0.32**
High School	525	Students	0.14	0.0%	0.0%	0.14	4.2	2.10	2.10	**0.29**
School District Office	528	1,000 Sq Ft GFA	2.04	0.0%	0.0%	8.16	4.2	2.10	2.10	**17.14**
Private School (K-8)	530	Students	0.26	0.0%	0.0%	0.26	6.2	3.10	3.10	**0.81**
Private School (K-12)	532	Students	0.17	0.0%	0.0%	0.17	6.2	3.10	3.10	**0.53**
Charter Elementary School	536	Students	0.16	0.0%	0.0%	0.16	6.2	3.10	3.10	**0.50**
Jr. / Community College	540	Students	0.11	0.0%	0.0%	0.11	4.2	2.10	2.10	**0.23**
University / College	550	Students	0.15	0.0%	0.0%	0.15	4.2	2.10	2.10	**0.32**
Church/House of Worship	560	1,000 Sq Ft GFA	0.49	0.0%	0.0%	0.49	6.44	3.22	3.22	**1.58**
Synagogue	561	Member Families	0.27	0.0%	0.0%	0.27	6.44	3.22	3.22	**0.87**
Mosque	562	1,000 Sq Ft GFA	4.22	0.0%	0.0%	4.22	6.44	3.22	3.22	**13.59**
Day Care Center	565	Students	0.79	44.0%	32.0%	0.19	3.09	1.55	1.55	**0.29**
Cemetary	566	Employees	3.81	0.0%	0.0%	3.81	3	1.50	1.50	**5.72**
Fire and Rescue Station	575	1,000 Sq Ft GFA	0.48	0.0%	0.0%	0.48	2.65	1.33	1.33	**0.64**
Library	590	1,000 Sq Ft GFA	8.16	0.0%	0.0%	8.16	2.76	1.38	1.38	**11.26**

Sample Calculations

The following section details two (2) examples of maximum assessable roadway impact fee calculations.

Example 1:

- **Development Type - One (1) Unit of Single-Family Housing in Service Area 1**

Roadway Impact Fee Calculation Steps – Example 1	
Step 1	**Determine Development Unit and Vehicle-Miles Per Development Unit**
	From Table 4.11 [Land Use – Vehicle Mile Equivalency Table] Development Type: 1 Dwelling Unit of Single-Family Detached Housing Number of Development Units: 1 Dwelling Unit Veh-Mi Per Development Unit: 5.64
Step 2	**Determine Maximum Assessable Impact Fee Per Service Unit**
	From Table 4.10, Line 15 [Maximum Assessable Fee Per Service Unit] Service Area 1: $1,334
Step 3	**Determine Maximum Assessable Impact Fee**
	Impact Fee = # of Development Units * Veh-Mi Per Dev Unit * Max. Fee Per Service Unit Impact Fee = 1 * 5.64 * $1,334 Maximum Assessable Impact Fee = $7,523.76

Example 2:

- **Development Type – 125,000 square foot Home Improvement Superstore in Service Area 2**

Roadway Impact Fee Calculation Steps – Example 2	
Step 1	**Determine Development Unit and Vehicle-Miles Per Development Unit**
	From Table 4.11 [Land Use – Vehicle Mile Equivalency Table] Development Type: 125,000 square feet of Home Improvement Superstore Development Unit: 1,000 square feet of Gross Floor Area Veh-Mi Per Development Unit: 3.97
Step 2	**Determine Maximum Assessable Impact Fee Per Service Unit**
	From Table 4.10, Line 15 [Maximum Assessable Fee Per Service Unit] Service Area 2: $1,397
Step 3	**Determine Maximum Assessable Impact Fee**
	Impact Fee = # of Development Units * Veh-Mi Per Dev Unit * Max. Fee Per Service Unit Impact Fee = (125,000/1,000) * 3.97 * $1,397 Maximum Assessable Impact Fee = $693,261.25

4.4 Conclusion

The Town of Prosper has established a process to implement the assessment and collection of roadway impact fees through the adoption of an impact fee ordinance that is consistent with Chapter 395 of the Texas Local Government Code.

This report establishes the maximum allowable roadway impact fee that could be assessed by the Town of Prosper within each Service Area. The maximum credited assessable fees for each service area calculated in this programmatic update are as follows (from **Table 4-10**):

Table 4-12 Maximum Assessable Fee Per Service Unit by Service Area

		SERVICE AREA	
LINE	**TITLE**	**1 (W. of RR)**	**2 (E. of RR)**
15	MAX ASSESSABLE FEE PER SERVICE UNIT ($ PER VEH-MI)	**$1,334**	**$1,397**

This document serves as a guide to the assessment of roadway impact fees pertaining to future development and the Town's need for roadway improvements to accommodate that growth. Following the public hearing process, the Town Council may establish an amount to be assessed (if any) up to the maximum established within this report and update the Roadway Impact Fee Ordinance accordingly.

In conclusion, it is our opinion that the data and methodology used in this update are appropriate and consistent with Chapter 395 of the Texas Local Government Code. Furthermore, the Land Use Assumptions and the proposed capital improvements plan are appropriately incorporated into the process.

Appendix A
Water System Model Calibration Data

DRAFT FIGURE A-1

TOWN OF PROSPER

JUNE 2023

BILLING METER DATA

LEGEND

- Road
- Railroad
- Stream
- Lake
- Parcel
- Town Limit
- ETJ Boundary
- Other City Limit
- County Boundary

TOTAL CONSUMPTION

- Less than 15,000 gal
- 15,000 - 50,000 gal
- Greater than 50,000 gal

TOWN OF PROSPER

FREESE AND NICHOLS

0 1,600 3,200

SCALE IN FEET

Created By Freese and Nichols, Inc.
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Updated: Friday, June 13, 2025 12:39 PM
User Name: SDW0

DRAFT FIGURE A-2

TOWN OF PROSPER

PRESSURE RECORDER LOCATIONS

LEGEND

- Pressure Recorder
- Pressure Reducing Valve
- Ground Storage Tank
- Elevated Storage Tank
- Pump Station
- 8" and Smaller Water Line
- 10" and Larger Water Line
- NTMWD Water Line
- Road
- Railroad
- Stream
- Lake
- Parcel
- Town Limit
- ETJ Boundary
- County Boundary

PRESSURE PLANES

- Upper Pressure Plane
- Lower Pressure Plane

PR - 1
Elev. = 704 ft.

PR - 2
Elev. = 730 ft.

PR - 3
Elev. = 579 ft.

PR - 5
Elev. = 658 ft.

PR - 6
Elev. = 788 ft.

PR - 7
Elev. = 568 ft.

PR - 8
Elev. = 632 ft.

PR - 9
Elev. = 754 ft.

PR - 10
Elev. = 553 ft.

2.5 MG Lower Pressure Plane #1
Elevated Storage Tank
Overflow Elev. = 805 ft.

2 MG Prosper Trail
Elevated Storage Tank
Overflow Elev.= 926 ft.

2 MG Preston EST
Elevated Storage Tank
Overflow Elev. = 926 ft.

Pump Station
Total Pumping Capacity= 32 MGD
Firm Pumping Capacity = 25 MGD
(1) - 3 MG Ground Storage Tank
(1) - 5 MG Ground Storage Tank
Overflow Elev.= 714 ft.

Pressure Reducing Valve

Pressure Reducing Valve

Modulated Transfer Valve

DENTON CO
COLLIN CO

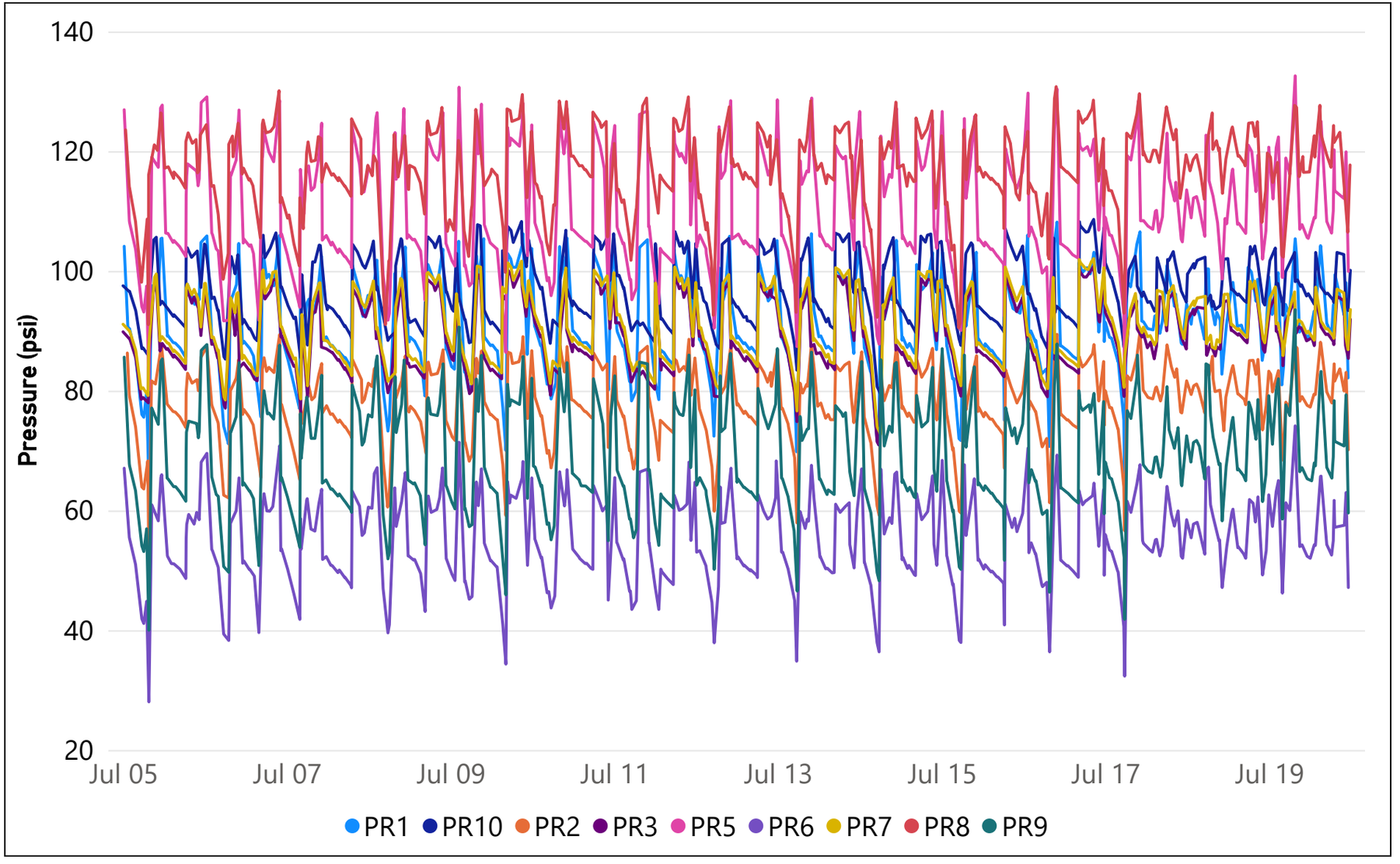
0 1,600 3,200
SCALE IN FEET

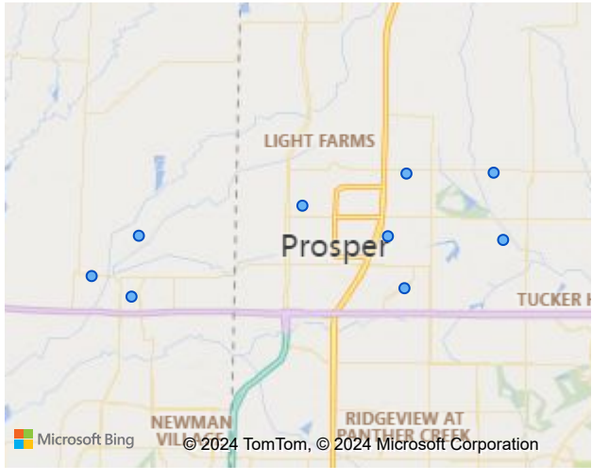
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Updated: Friday, June 13, 2025 8:16 AM
User Name: ISW

Date Range

7/5/2023 7/19/2023

DRAFT
Town of Prosper
Field Pressure Testing Results





Address

1500 Highland Meadows Ct

Pressure Statistics	Pressure Recorders
Min: 28 psi **Max: 133 psi** **Avg: 89 psi**	Select all Lower Upper

Appendix B
Wastewater System Flow Monitoring and Model Validation Data

DRAFT FIGURE B-1

TOWN OF PROSPER

FLOW METER LOCATIONS

LEGEND

- Temporary Flow Meter
- UTRWD Permanent Flow Meter
- Rain Gauge
- Manhole
- Lift Station
- Wastewater Treatement Plant
- 8" and Smaller Modeled Wastewater Line
- 10" and Larger Modeled Wastewater Line
- Force Main
- UTRWD Wastewater Line
- NTMWD Wastewater Line
- Road
- Railroad
- Stream
- Lake
- Parcel
- Town Limit
- ETJ Boundary
- County Boundary

FLOW METER BASINS

- FM Basin 1
- FM Basin 2
- FM Basin 3
- FM Basin 4
- FM Basin 5
- FM Basin 6
- FM Basin 8
- FM Basin 9
- FM Basin 10
- FM Basin POE 1
- FM Basin POE 2
- FM Basin POE 3
- Not Metered

FM - 1
10"

FM - 2
24" NTMWD Line

FM - 3
15"

FM - 4
24"

FM - 5
21"

FM - 6
21"

FM - 7
21"

FM - 8
36"

FM - 9
36"

FM - 10
24" NTMWD Line

POE #1
27"

POE #2
36"

POE #3
36"

RG-1

RG-2

La Cima Lift Station
Capacity = 3.0 MGD

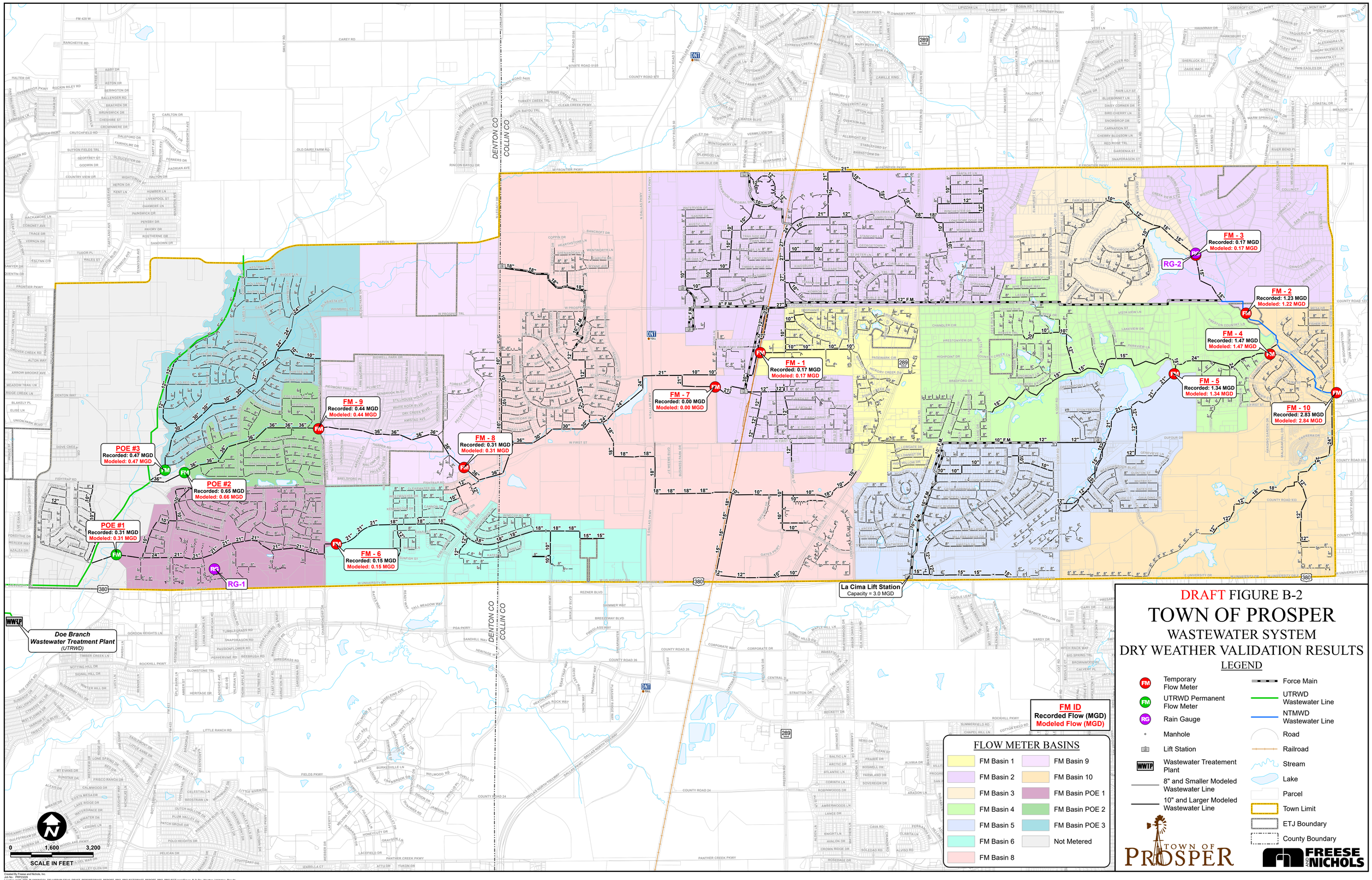
WWTP
Doe Branch Wastewater Treatment Plant
(UTRWD)

0 1,600 3,200
SCALE IN FEET

TOWN OF PROSPER

FREESE AND NICHOLS

Created By Freese and Nichols, Inc.
Job No.: PRP23029
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DRAFT FIGURE B-2

TOWN OF PROSPER

WASTEWATER SYSTEM
DRY WEATHER VALIDATION RESULTS

LEGEND

- Temporary Flow Meter
- UTRWD Permanent Flow Meter
- Rain Gauge
- Manhole
- Lift Station
- Wastewater Treatement Plant
- 8" and Smaller Modeled Wastewater Line
- 10" and Larger Modeled Wastewater Line
- Force Main
- UTRWD Wastewater Line
- NTMWD Wastewater Line
- Road
- Railroad
- Stream
- Lake
- Parcel
- Town Limit
- ETJ Boundary
- County Boundary

FM ID
Recorded Flow (MGD)
Modeled Flow (MGD)

FLOW METER BASINS

- FM Basin 1
- FM Basin 2
- FM Basin 3
- FM Basin 4
- FM Basin 5
- FM Basin 6
- FM Basin 8
- FM Basin 9
- FM Basin 10
- FM Basin POE 1
- FM Basin POE 2
- FM Basin POE 3
- Not Metered

TOWN OF PROSPER

FREESE AND NICHOLS

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Location: H:\W_WW_PLANNING\01_DELIVERABLES\10_DRAFT_REPORT\DRAFT_REPORT_PRO_PROJECT\DRAFT_REPORT_PRO_PROJECT.aprx\Figure_B-2-Dry_Weather_Validation_Results
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DRAFT FIGURE B-3

TOWN OF PROSPER

WASTEWATER SYSTEM
WET WEATHER VALIDATION RESULTS

Doe Branch Wastewater Treatment Plant (UTRWD)

FM - 1
Recorded: 0.37 MGD
Modeled: 0.37 MGD

FM - 2
Recorded: 1.37 MGD
Modeled: 1.37 MGD

FM - 3
Recorded: 0.32 MGD
Modeled: 0.32 MGD

FM - 4
Recorded: 1.97 MGD
Modeled: 1.96 MGD

FM - 5
Recorded: 1.49 MGD
Modeled: 1.48 MGD

FM - 6
Recorded: 0.43 MGD
Modeled: 0.43 MGD

FM - 7
Recorded: 0.16 MGD
Modeled: 0.00 MGD

FM - 8
Recorded: 1.60 MGD
Modeled: 1.60 MGD

FM - 9
Recorded: 1.85 MGD
Modeled: 1.85 MGD

FM - 10
Recorded: 3.58 MGD
Modeled: 3.63 MGD

POE #1
Recorded: 0.70 MGD
Modeled: 0.70 MGD

POE #2
Recorded: 2.73 MGD
Modeled: 2.73 MGD

POE #3
Recorded: 1.57 MGD
Modeled: 1.57 MGD

RG-1

RG-2

La Cima Lift Station
Capacity = 3.0 MGD

0 1,600 3,200
SCALE IN FEET

FM ID
Recorded Flow (MGD)
Modeled Flow (MGD)

FLOW METER BASINS

- FM Basin 1
- FM Basin 2
- FM Basin 3
- FM Basin 4
- FM Basin 5
- FM Basin 6
- FM Basin 8
- FM Basin 9
- FM Basin 10
- FM Basin POE 1
- FM Basin POE 2
- FM Basin POE 3
- Not Metered

LEGEND

- Temporary Flow Meter
- UTRWD Permanent Flow Meter
- Rain Gauge
- Manhole
- Lift Station
- Wastewater Treatement Plant
- 8" and Smaller Modeled Wastewater Line
- 10" and Larger Modeled Wastewater Line
- Force Main
- UTRWD Wastewater Line
- NTMWD Wastewater Line
- Road
- Railroad
- Stream
- Lake
- Parcel
- Town Limit
- ETJ Boundary
- County Boundary

TOWN OF PROSPER

FREESE AND NICHOLS

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User Name: G2499

Temporary Flow Monitoring Study

Prosper, Texas

Prepared for: Freese and Nichols, Inc.

Revised July 15, 2024



ADS ENVIRONMENTAL SERVICES

Temporary Flow Monitoring Study

Prosper, Texas

Prepared For:

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Revised
July 15, 2024

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Appendix A: ADS Site Reports

Appendix B: Graphical Outputs

Introduction

ADS Environmental Services (ADS) was retained by Freese and Nichols, Inc. (FNI) to gather and evaluate flow monitor and rainfall monitor data within portions of the existing sanitary sewer system located in the Town of Prosper, Texas. The scope of this study is to characterize dry weather and wet weather flow conditions in designated portions of the sanitary sewer system, evaluate key performance indicators, and rank the relative severity of observed groundwater infiltration (GWI) and rainfall dependent infiltration and inflow (RDII) to assist FNI to direct subsequent planning, condition assessment, and rehabilitation activities.

Methodology

Dry weather and wet weather performance data were obtained within the Town of Prosper by installing sewer flow monitors to observe and document existing flow conditions. A total of nine sewer basins were evaluated using 10 temporary flow monitors and two temporary rainfall monitors. Note that the flow monitor without a corresponding basin was installed to capture potential flow transfers between the east and west sewer basin. Descriptions of the monitor basins, equipment, study period, and data format are detailed in the following sections.

Flow Monitor and Rain Gauge Locations

Preliminary flow monitor and rainfall monitor locations were selected by FNI. Final locations were selected by ADS, in consultation with FNI, based on observed flow conditions, site access, and site safety considerations. Descriptions of each sewer basin and its associated flow monitor location are provided in **Table 1**.

TABLE 1: Flow Monitor Locations

Basin	Latitude (degrees)	Longitude (degrees)	Diameter (inches)	MH Depth (inches)	Basin Size (LF)
FM-01	33.2433391	-96.8051518	10	96.0	44,931
FM-02	33.2471982	-96.7437876	24	156.0	177,745
FM-03	33.2529391	-96.7498051	15	288.0	40,594
FM-04	33.2422685	-96.7405864	24	252.0	56,245
FM-05	33.2404247	-96.7527596	21	309.6	143,876
FM-06	33.2236620	-96.8591947	21	228.0	42,644
FM-07	33.2397997	-96.8108073	21	240.0	—
FM-08	33.2316158	-96.8428855	36	264.0	129,449
FM-09	33.2354954	-96.8611057	36	252.0	3,077
FM-10	33.2380440	-96.7317371	24	228.0	33,263

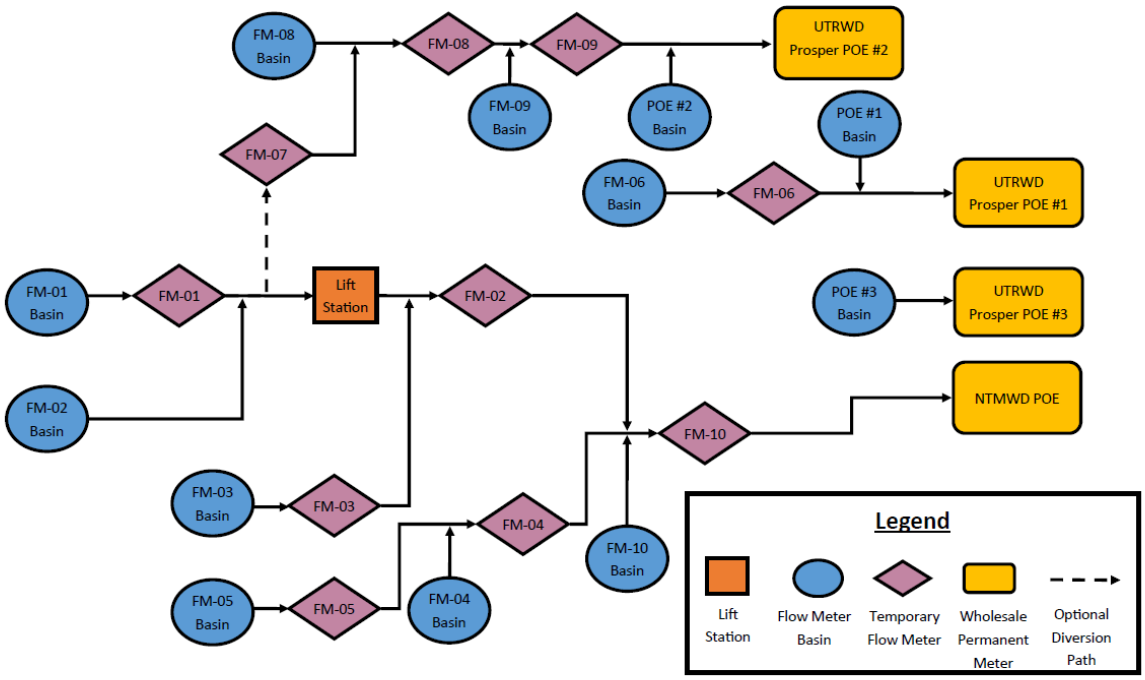
A general schematic provided by FNI showing the upstream and downstream relationship between each flow monitor is provided in **Figure 1**. Rain Gauge RG01 was located at 4450 West University Drive, and Rain Gauge RG02 was located at 1320 Winding Creek Road.

FIGURE 1: Flow Monitor Schematic

Town of Prosper

Wastewater Collection System

Temporary Flow Monitoring Schematic



Note: Flow from Basin FM-01 and FM-02 can be diverted at will by the Town of Prosper through Flow Monitor FM-07.

Per FNI, the reported size for Basin FM-09 only accounts for sewers owned by the Town of Prosper. It does not account for Elm Ridge Water Control and Improvement District (WCID) owned sewers.

Prosper Point-of-Entry (POE) #1, #2, and #3 are permanent flow monitors owned and maintained by the Upper Trinity Regional Water District (UTRWD). A flow imbalance was observed between POE #2 and ADS Flow Monitor FM-09 and was discussed with FNI.

Flow Monitor Equipment

Sewer flow monitoring was performed using TRITON+® area-velocity flow monitors manufactured, installed, and maintained by ADS. Each flow monitor is mounted near the top of a manhole and is connected to flow depth and velocity sensors positioned in an incoming sewer. Each flow monitor is equipped with an area-velocity (AV) sensor that includes an ultrasonic depth sensor, a velocity sensor, and a pressure depth sensor.

Rainfall Monitor Equipment

Rainfall monitoring was performed using RAINALERT® III rainfall monitors manufactured, installed, and maintained by ADS. Each rainfall monitor is equipped with a TB6 standard tipping bucket rain gauge manufactured by HyQuest Solutions.

Study Period

All of the temporary flow monitors were installed from 04.04.2023 to 04.11.2023. The temporary rainfall monitors were installed on 04.06.2023. Based on these installation dates, the Study Period began on 04.12.2023 and continued through 06.20.2023 – a 70-day period.

Data Format

Flow depth (d), flow velocity (v), and flow rate (Q) data from each sewer flow monitor, as well as rainfall depth data from each rainfall monitor are maintained by ADS in PRISM™, a Cloud-based data management system. Archived data from the Study Period are accessible to FNI via secure user accounts at www.adsprism.com. Additional graphical outputs are provided in the attached appendices.

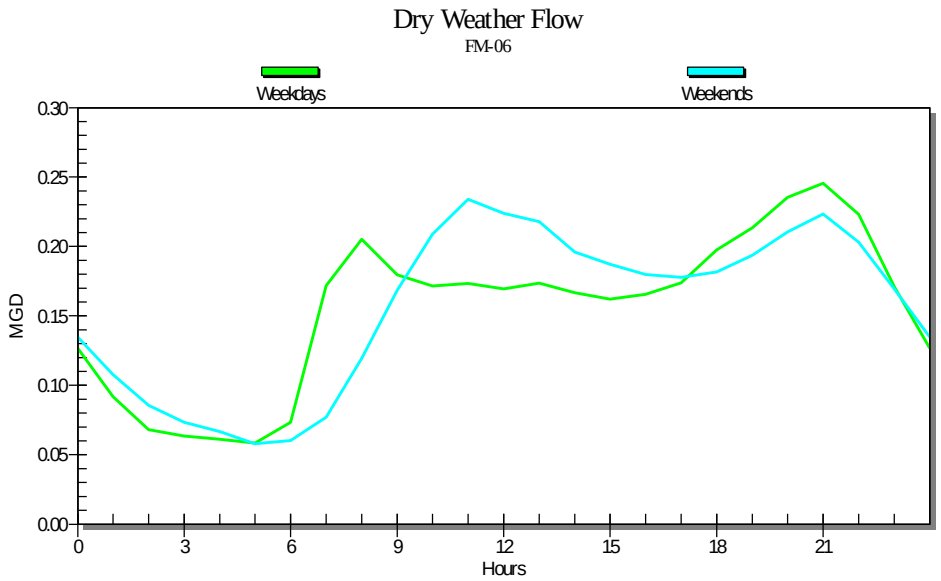
Results

Flow monitor and rainfall monitor data provide insight into sewer performance – revealing important information about how the existing sewer system accommodates observed flow rates. The following sections evaluate flow monitor data observed during both dry weather and wet weather periods using a variety of key performance indicators (KPIs).

Flow Rates and Peaking Factors

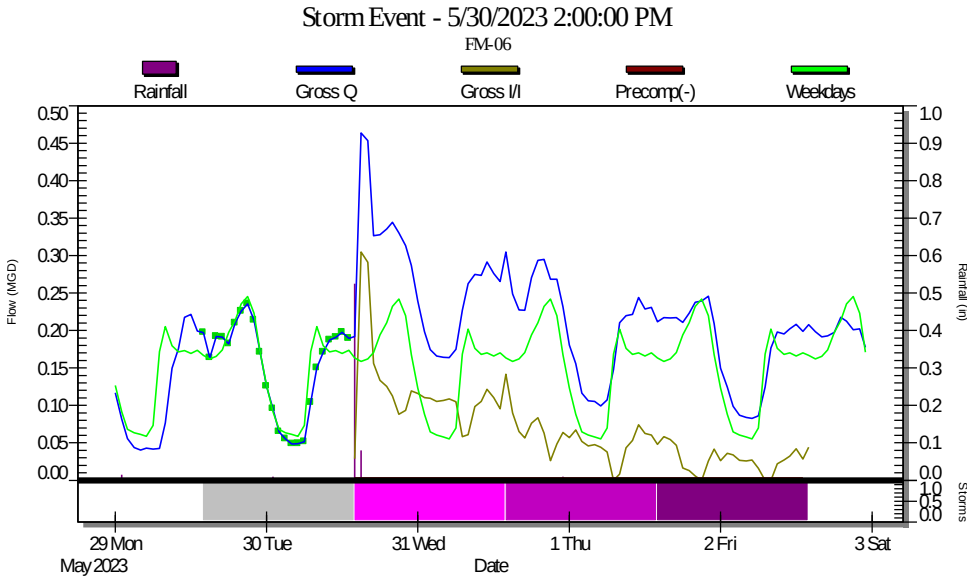
Dry weather flow conditions are characterized by evaluating flow monitor data observed during normal conditions, excluding wet weather events and the periods associated with the recovery from these events. The average dry day pattern is identified as a diurnal pattern and results from the collective sewer use of residential, commercial, institutional, and industrial users located upstream from a given flow monitor. Land use within a particular area affects the shape of the diurnal pattern. An example of a representative diurnal pattern observed during the Study Period is shown in **Figure 2**.

FIGURE 2: Dry Weather Hydrograph – Residential Land Use



Wet weather flow conditions are characterized by evaluating flow monitor data observed during significant storm events that occurred during the study period. An example of a representative wet weather hydrograph observed during the Study Period is provided in **Figure 3** and shows the observed flow rate during a storm event compared to the average dry day diurnal pattern. The difference between the two is the RDII measured by the flow monitor. The storm event is depicted by the purple bands, and a precompensation period prior to the storm event is depicted by the light gray band. Precompensation is used when needed to adjust the average dry day diurnal pattern to match observed conditions more closely prior to each storm event for proper RDII analysis.

FIGURE 3: Wet Weather Storm Decomposition Hydrograph



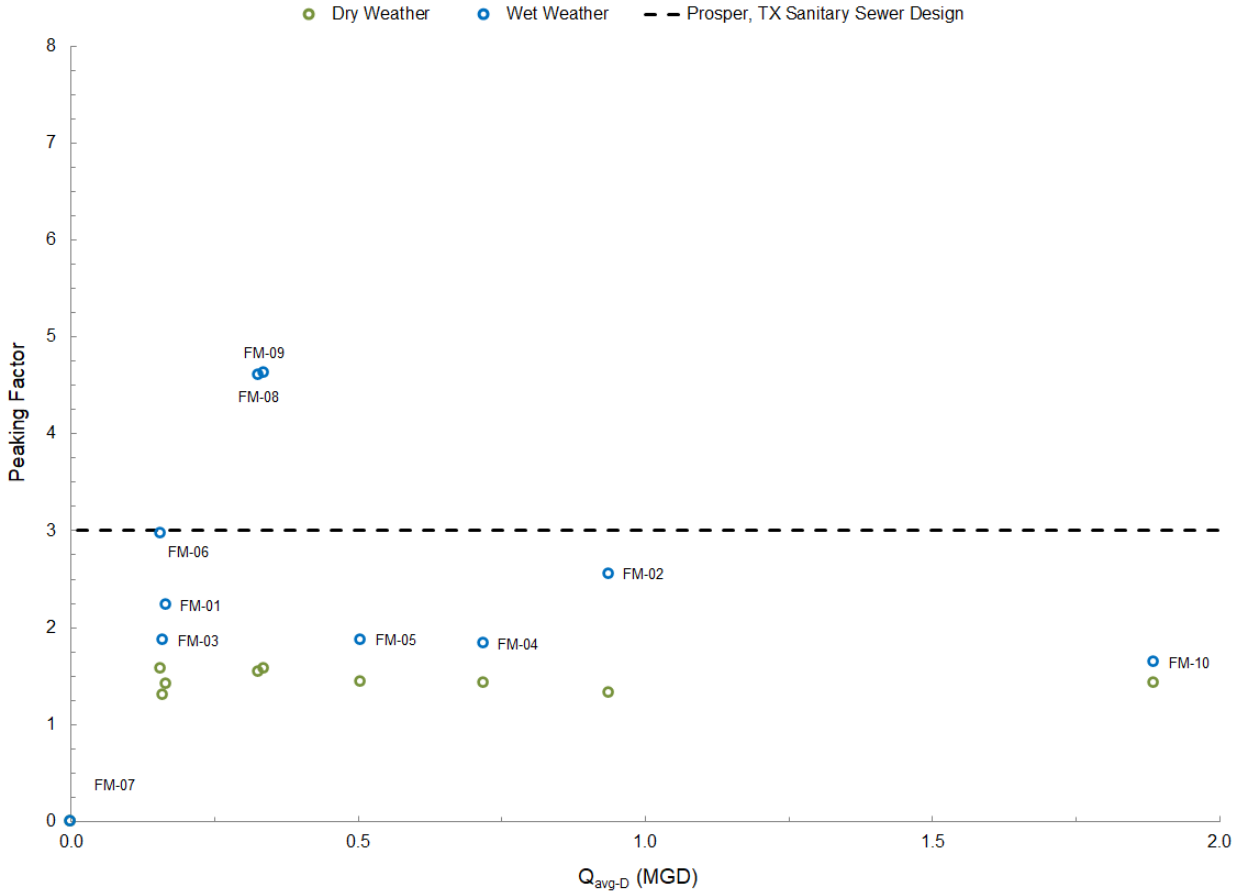
The minimum, average, and maximum dry weather flow rates ($Q_{min\text{-}D}$, $Q_{avg\text{-}D}$, and $Q_{max\text{-}D}$) are determined from the dry weather diurnal pattern for each flow monitor location and are provided in **Table 2**, along with the resulting dry weather peaking factor (PF_D). The maximum wet weather flow rate ($Q_{max\text{-}W}$) observed for each flow monitor location is also provided, along with the resulting wet weather peaking factor (PF_W).

TABLE 2: Dry and Wet Weather Flow Rates and Peaking Factors

Monitor	$Q_{min\text{-}D}$ (MGD)	$Q_{avg\text{-}D}$ (MGD)	$Q_{max\text{-}D}$ (MGD)	$Q_{max\text{-}W}$ (MGD)	PF_D	PF_W
FM-01	0.065	0.165	0.233	0.368	1.41	2.23
FM-02	0.321	0.936	1.236	2.392	1.32	2.56
FM-03	0.081	0.161	0.209	0.301	1.30	1.87
FM-04	0.324	0.718	1.023	1.315	1.42	1.83
FM-05	0.206	0.505	0.729	0.947	1.44	1.88
FM-06	0.059	0.156	0.245	0.464	1.57	2.97
FM-07	0.000	0.000	0.000	0.119	—	—
FM-08	0.116	0.326	0.503	1.500	1.54	4.60
FM-09	0.079	0.336	0.531	1.556	1.58	4.63
FM-10	0.749	1.886	2.702	3.097	1.43	1.64

Peaking factors are commonly used to estimate maximum flow rates based on average flow rate estimates and play a key role in sewer design. Dry weather and wet weather peaking factors observed during the Study Period are compared with corresponding Prosper design guidance, and the results are shown in **Figure 4**.

FIGURE 4: Peaking Factors Compared to Design Guidance



During dry weather conditions observed during the Study Period, all peaking factors fall within Prosper design requirements. During wet weather conditions observed during the Study Period, all peaking factors fall within Prosper design requirements, except Flow Monitors FM-08 and FM-09. The peaking factors reported at Flow Monitors FM-08 and FM-09 were observed during periods when active flow diversions at Flow Monitor FM-07 were suspected. Flow diversions were not a regular occurrence and were only noted a handful of times during wet weather conditions in the Study Period. Wet weather peaking factors observed during the Study Period ranged from 1.64 to 4.63.

Depth-to-Diameter Ratios

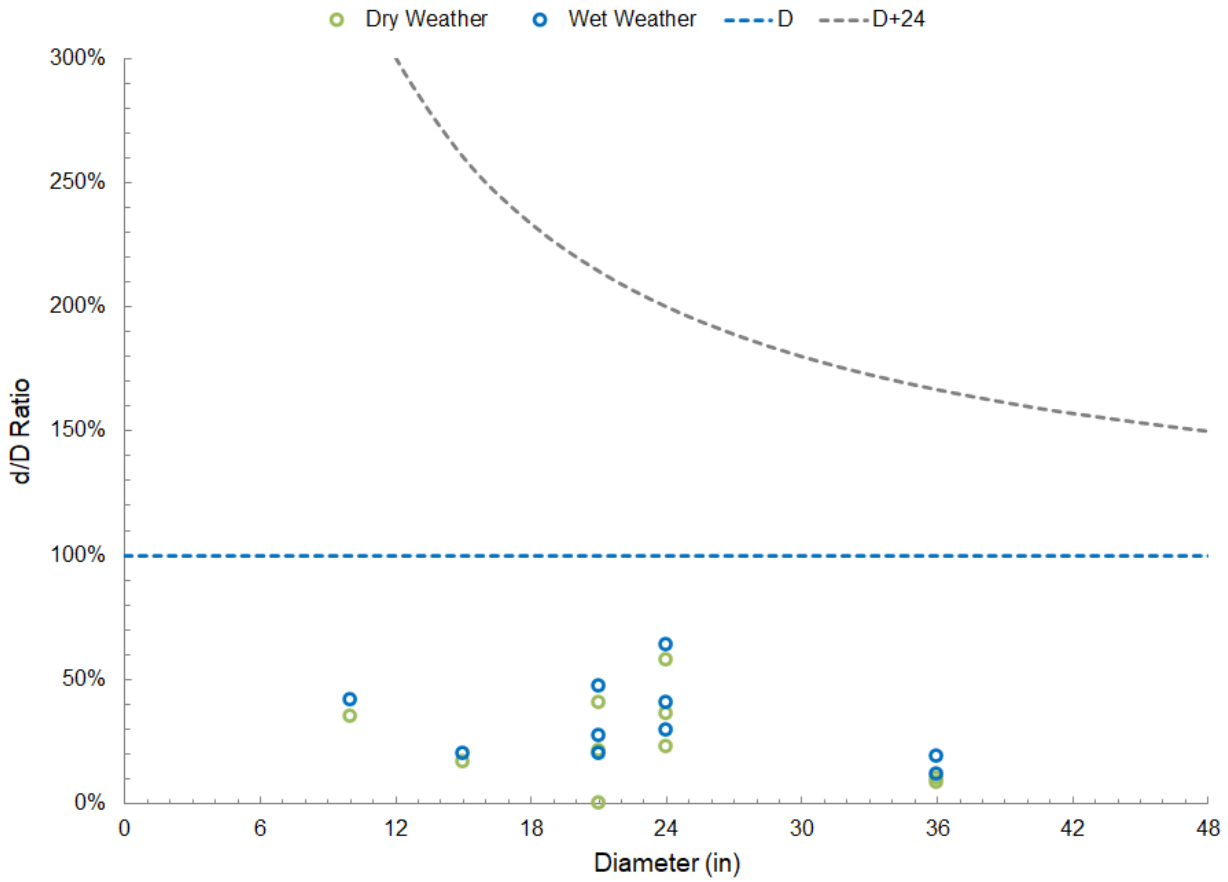
Once dry weather and wet weather flow rates are characterized, the hydraulic conditions under which they occur are evaluated. The maximum flow depth observed during dry weather (d_{max-D}) and wet weather (d_{max-W}), and their corresponding flow depth-to-diameter (d/D) ratios observed during the Study Period are provided in **Table 3**. The maximum dry weather flow depth is the maximum flow depth that is consistently observed each day during normal dry weather conditions. The maximum wet weather flow depth may or may not be directly associated with the maximum wet weather flow rate, depending on the hydraulic conditions observed at a given flow monitor location.

TABLE 3: Dry and Wet Weather Depth-to-Diameter Ratios

Monitor	D (inches)	d_{max-D} (inches)	d_{max-D} / D (%)	d_{max-W} (inches)	d_{max-W} / D (%)
FM-01	10	3.47	35%	4.17	42%
FM-02	24	5.48	23%	7.02	29%
FM-03	15	2.51	17%	2.99	20%
FM-04	24	8.61	36%	9.69	40%
FM-05	21	8.49	40%	9.92	47%
FM-06	21	4.38	21%	5.70	27%
FM-07	21	0.00	0%	4.17	20%
FM-08	36	3.59	10%	6.78	19%
FM-09	36	3.01	8%	4.28	12%
FM-10	24	13.88	58%	15.30	64%

The d/D ratio is a performance indicator used to assess sewer capacity. Prosper design guidelines indicate that sewers should flow under open channel conditions with a d/D ratio less than or equal to 1.00. Sewers are not generally designed to operate under surcharge conditions with wet weather d/D ratios greater than 100%. Observed wet weather d/D ratios are also compared to additional capacity assurance criteria, designed to highlight portions of the sewer system where flow depths are greater than 24 inches above the crown of the sewer (D+24) or are within 36 inches of the manhole rim (R-36). These design and capacity assurance criteria are useful to evaluate d/D ratios observed during the Study Period as shown in **Figure 5**.

FIGURE 5: d/D Ratios Compared to Design and Capacity Assurance Criteria



During dry weather conditions, all of the d/D ratios are within Prosper design criteria, indicating there is sufficient capacity at all of the flow monitor locations to accommodate dry weather flow rates observed during the Study Period. During wet weather conditions, all of the d/D ratios are within Prosper design criteria, indicating there is sufficient capacity at these locations to accommodate observed wet weather flow rates observed during the Study Period without surcharge conditions. With no surcharge conditions observed, none of the flow monitor locations exceeded the D+24 or R-36 capacity assurance criteria. These observations are not necessarily a representation of system performance under more significant rainfall events.

Self-Cleansing Status

Self-cleansing is an important aspect of sanitary sewer design and is desired to minimize the deposition of silt, sediment, and debris. The Tractive Force Method is used to design sewers to achieve self-cleansing conditions based on a required critical shear stress (τ_c) and is recommended by ASCE and WEF to evaluate self-cleansing conditions.

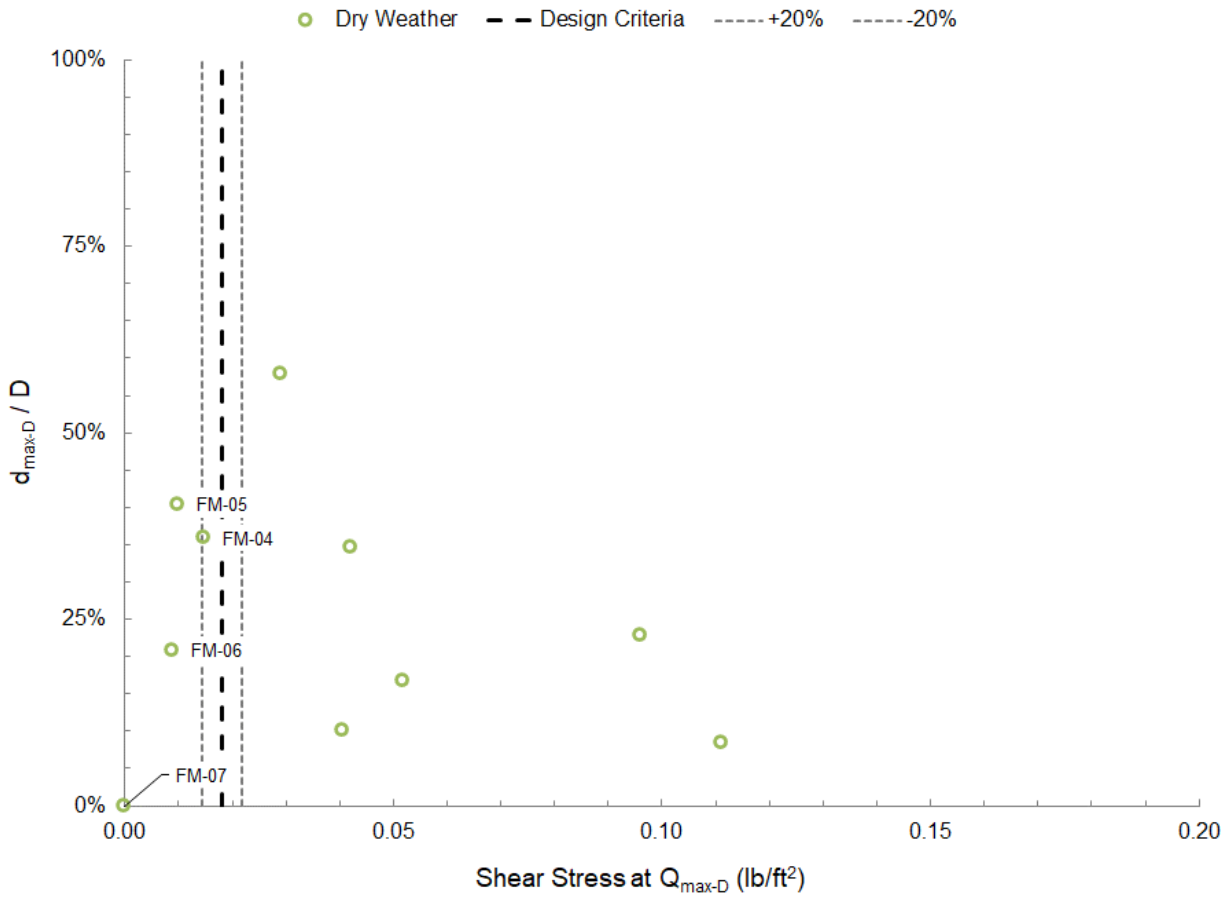
The Tractive Force Method can also be extended from the design of new sewers to the evaluation of existing sewers and was applied to evaluate the self-cleansing status of each flow monitor location. The maximum dry weather flow depth ($d_{max\text{-}D}$) and flow velocity ($v_{max\text{-}D}$) from each flow monitor location were used to compute the actual shear stress (τ) observed at the maximum dry weather flow rate ($Q_{max\text{-}D}$) during the Study Period, and the results are provided in **Table 4**.

TABLE 4: Self-Cleansing Classification

Monitor	D (in)	$d_{max\text{-}D}$ (in)	$v_{max\text{-}D}$ (ft/s)	τ (lb/ft^2)	Class
FM-01	10	3.47	2.19	0.0421	1
FM-02	24	5.48	3.61	0.0960	1
FM-03	15	2.51	2.34	0.0518	1
FM-04	24	8.61	1.51	0.0148	2
FM-05	21	8.49	1.23	0.0100	3
FM-06	21	4.38	1.06	0.0089	3
FM-07	21	0.00	0.00	0.0000	3
FM-08	36	3.59	2.21	0.0405	1
FM-09	36	3.01	3.56	0.1112	1
FM-10	24	13.88	2.23	0.0290	1

The required critical shear stress recommended by ASCE and WEF for application of the Tractive Force Method is 0.0181 lb/ft^2. The actual shear stress achieved under normal dry weather conditions during the Study Period is compared to this design guidance in **Figure 6**. Sewers predicted to be self-cleansing are shown to the right of the recommended critical shear stress, and sewers predicted to be non-cleansing are shown to the left. Research by ADS has shown that the transition from self-cleansing to non-cleansing generally occurs within ±20% of this recommended value. As a result, the hydraulic conditions at each flow monitor location are classified as Class 1 – Self-Cleansing, Class 2 – Marginal Cleansing, or Class 3 – Non-Cleansing.

FIGURE 6: Self-Cleansing Status Compared to Design Guidance



Based on hydraulic conditions observed during the Study Period, six flow monitor locations are defined as Class 1 – Self Cleansing. One flow monitor location is defined as Class 2 – Marginal Cleansing (FM-04), and three flow monitor locations are defined as Class 3 – Non-Cleansing (FM-05, FM-06, and FM-07).

Groundwater Infiltration

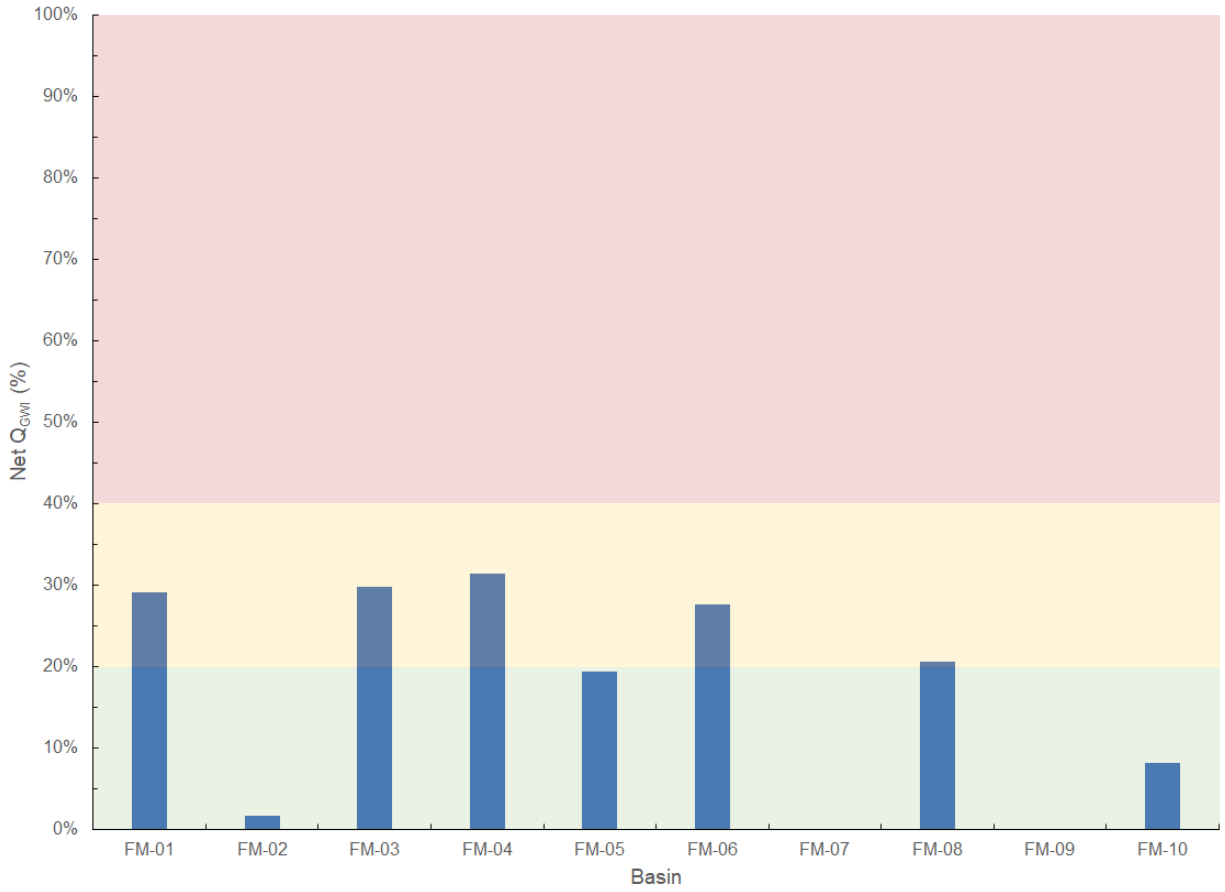
Infiltration and inflow (I/I) are common problems in sanitary sewer systems. While inflow typically gets the most attention in wet weather, groundwater infiltration can also be a significant problem in dry weather, silently stealing sewer capacity 24 hours per day, 7 days per week, 365 days per year. While groundwater infiltration (Q_{GWI}) is often of interest to wastewater professionals, it is not measured directly by flow monitors. Rather, it is assumed that $0 \leq Q_{GWI} \leq Q_{min\text{-}D}$ and is *estimated* using a variety of empirical methods. The Stevens-Schutzbach Method was used to estimate groundwater infiltration during the Study Period, and the results are provided in **Table 5**.

TABLE 5: Groundwater Infiltration Estimates

Basin	Gross $Q_{min\text{-}D}$ (MGD)	Gross $Q_{avg\text{-}D}$ (MGD)	Gross Q_{GWI} (MGD)	Net Q_{GWI} (MGD)	Net $Q_{avg\text{-}D}$ (MGD)	Net $Q_{GWI}/Q_{avg\text{-}D}$ (%)
FM-01	0.065	0.165	0.048	0.048	0.165	29%
FM-02	0.321	0.936	0.106	0.010	0.610	2%
FM-03	0.081	0.161	0.048	0.048	0.161	30%
FM-04	0.324	0.718	0.165	0.067	0.213	31%
FM-05	0.206	0.505	0.098	0.098	0.505	19%
FM-06	0.059	0.156	0.043	0.043	0.156	28%
FM-07	0.000	0.000	0.000	0.000	0.000	0%
FM-08	0.116	0.326	0.067	0.067	0.326	21%
FM-09	0.079	0.336	0.045	0.000	0.118	0%
FM-10	0.749	1.886	0.290	0.019	0.232	8%

Net groundwater infiltration is expressed as a percent of the net average dry weather flow rate and compared with an industry rule-of-thumb for excessive groundwater infiltration as shown in **Figure 7**. Net % Q_{GWI} less than 20% is considered minor. Net % Q_{GWI} between 20% and 40% is considered moderate, and Net % Q_{GWI} greater than 40% is considered significant. Note that groundwater infiltration is classified as minor in five basins (FM-02, FM-05, FM-07, FM-09, and FM-10) and moderate in five basins (FM-01, FM-03, FM-04, FM-06, and FM-08).

FIGURE 7: Net Groundwater Infiltration Estimates

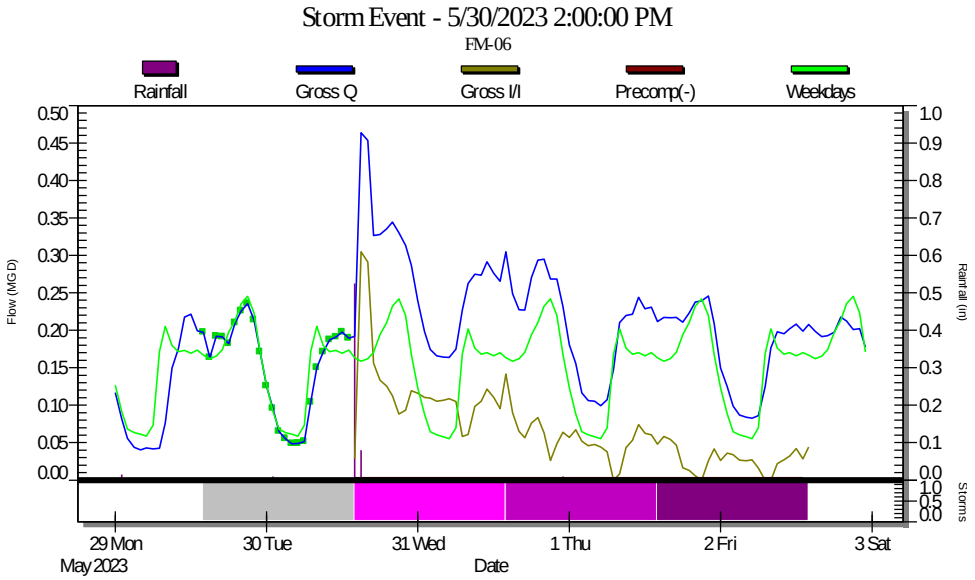


Net groundwater infiltration estimates for each basin range from 0% to 31% of the net average dry weather flow rate. Excessive groundwater infiltration consumes sewer capacity and pump station capacity that would otherwise be available to accommodate future development and/or wet weather flows.

Rainfall-Dependent Infiltration and Inflow

During wet weather events, significant amounts of extraneous water can enter a sewer system, resulting in sanitary sewer overflows (SSOs), basement backups, and/or problems at the wastewater treatment plant (WWTP). A comparison of flow monitor data from dry weather and wet weather periods provides a quantification of RDII, which is calculated by subtracting the measured flow during a rainfall event from the flow during an average dry day. A wet weather hydrograph from the Study Period is provided in **Figure 8**. The storm event is depicted by the purple bands, and a precompensation period prior to the storm is depicted by the light gray band. Adjustments to the average dry day pattern are made as needed to account for antecedent conditions prior to each storm event.

FIGURE 8: Wet Weather Hydrograph



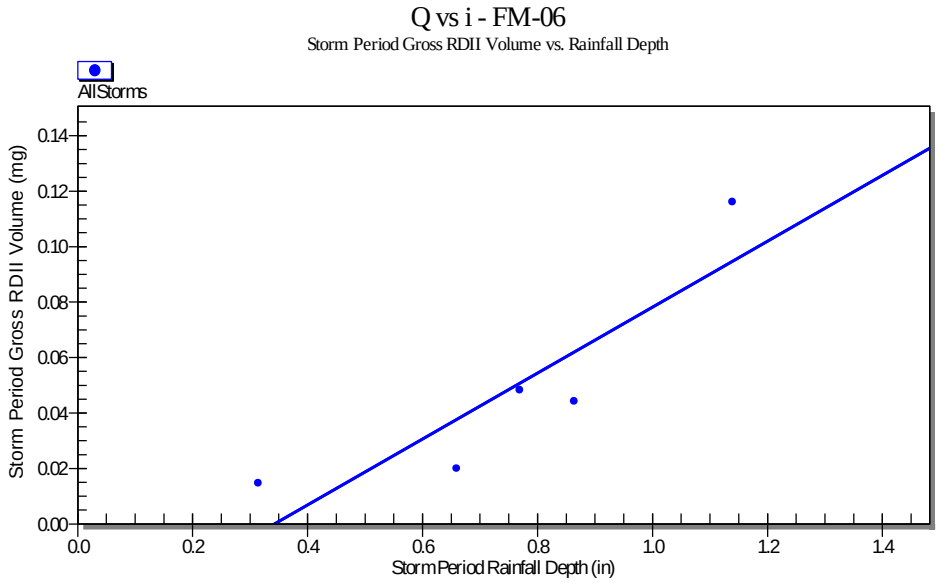
Up to eight storm events of interest were observed and evaluated for each flow monitor basin during the Study Period and are summarized in **Table 6**. The largest storm event evaluated began on 06/05/2023 with rainfall totals of 0.98 and 1.07 inches at Rain Gauges RG01 and RG02, respectively. The associated return frequency for this storm event was less than 1-year at all durations. Note that most of the rain events observed during the Study Period were not uniformly distributed between the two rain gauges and is typical of convective springtime storm events in Texas.

TABLE 6: Rainfall Event Summary

Start Date	Start Time (hh:mm)	Total RG01 (in)	Total RG02 (in)	Total Average (in)	Return Frequency	at Duration
04.26.2023	4:00	0.53	0.63	0.58	< 1-year	all
05.08.2023	10:00	0.86	0.13	0.50	< 1-year	all
05.15.2023	21:00	1.21	0.13	0.67	< 1-year	all
05.19.2023	14:00	1.19	0.35	0.77	< 2-year	15-min
05.30.2023	14:00	1.14	0.11	0.63	< 1-year	all
06.03.2023	18:00	0.05	0.80	0.43	< 1-year	all
06.05.2023	0:00	0.98	1.07	1.03	< 1-year	all
06.15.2023	22:00	0.55	1.18	0.87	< 1-year	all

After the RDII calculations are made for each storm event, the results are plotted as a function of rainfall total. An example is shown in **Figure 9** in which the relationship between the Storm Event RDII (MG) is plotted with respect to the Storm Event rainfall (inches) for all significant storm events. These relationships can then be used to evaluate the consistency of rainfall responses within the sanitary sewer system and estimate the RDII response for various rainfall amounts.

FIGURE 9: RDII Response vs. Rainfall Depth



Based on the results obtained during the Study Period, Net RDII are reported for each basin for a projected 1.00-inch storm event, and the results are summarized in **Table 7**. Net RDII volumes are computed by subtracting the Gross RDII volume of any upstream flow monitor basin from the Gross RDII volume measured at the outlet of each flow monitor basin. This process identifies and isolates RDII to the basin sizes shown. Normalized Net RDII is then calculated by dividing the net RDII volume by the associated basin size.

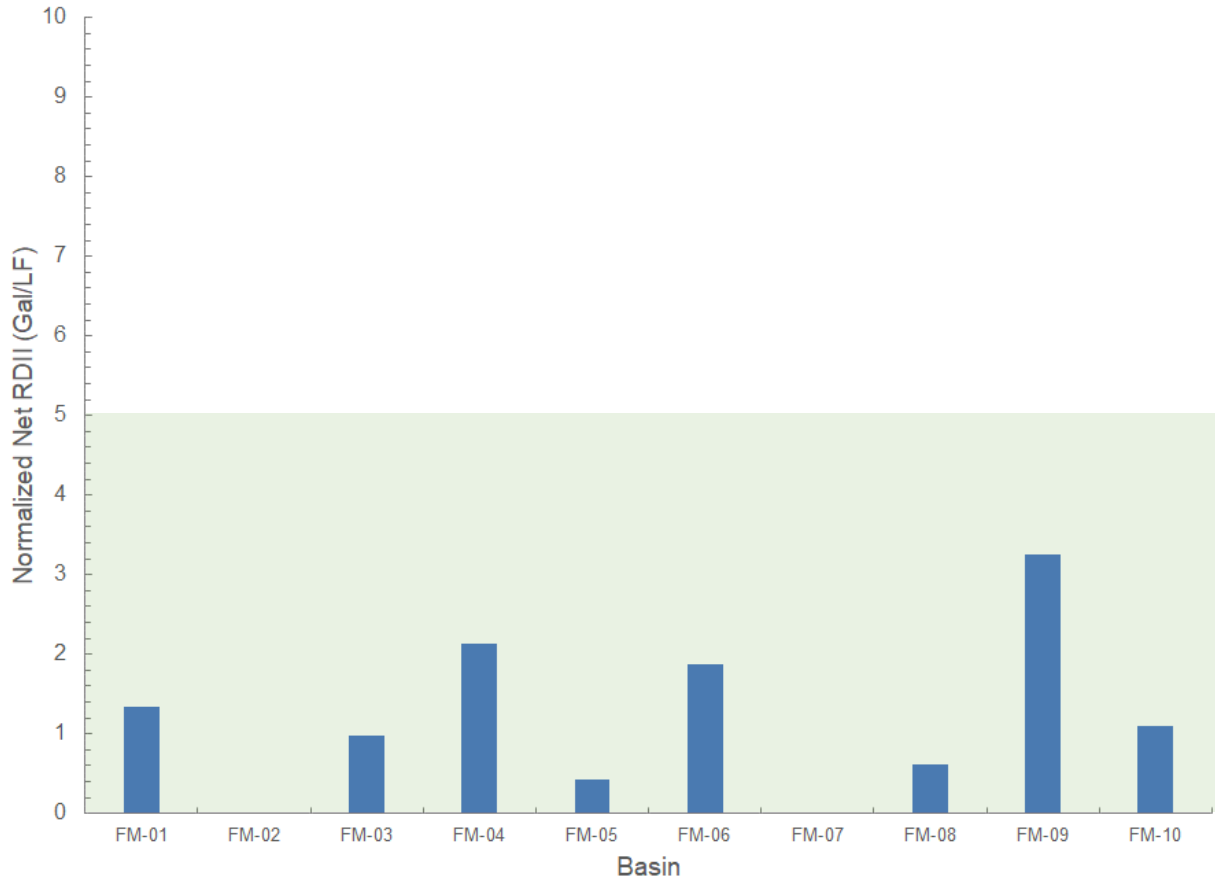
TABLE 7: Net RDII for a Projected 1.00-inch Storm

Basin	Gross RDII (MG)	Net RDII (MG)	Basin Size (LF)	Net RDII (Gal/LF)
FM-01	0.06	0.06	44,931	1.34
FM-02	—	—	—	—
FM-03	0.04	0.04	40,594	0.99
FM-04	0.18	0.12	56,245	2.13
FM-05	0.06	0.06	143,876	0.42
FM-06	0.08	0.08	42,644	1.88
FM-07	—	—	—	—
FM-08	0.08	0.08	129,449	0.62
FM-09	0.09	0.01	3,077	3.25
FM-10	0.51	0.23	211,008	1.09

Note that Normalized Net RDII results are not provided for Basin FM-02. A flow imbalance between Flow Monitor FM-10 downstream and FM-02 and FM-04 upstream was observed and the location of Flow Monitor FM-02 near the discharge of the lift station force main is the likely culprit. Therefore, for the purpose of RDII evaluation, Flow Monitor FM-02 was disregarded and the basin size associated with Basin FM-02 was added to Basin FM-10. This scenario was discussed with FNI prior to report submittal.

Normalized Net RDII results are compared with an industry rule-of-thumb for excessive RDII of 5 Gal/LF for a 1-inch rainfall event in **Figure 10**. Note that all flow monitor basins have projected RDII less than this key performance indicator.

FIGURE 10: Normalized Net RDII for Projected 1-inch Storm Compared to Industry Rule-of-Thumb



To further prioritize, Normalized Net RDII is compared to the maximum wet weather flow depth-to-diameter ratio ($d_{max\text{-}W}$ / D) as shown in **Figure 11**. This comparison classifies flow monitor basins into four distinct groups:

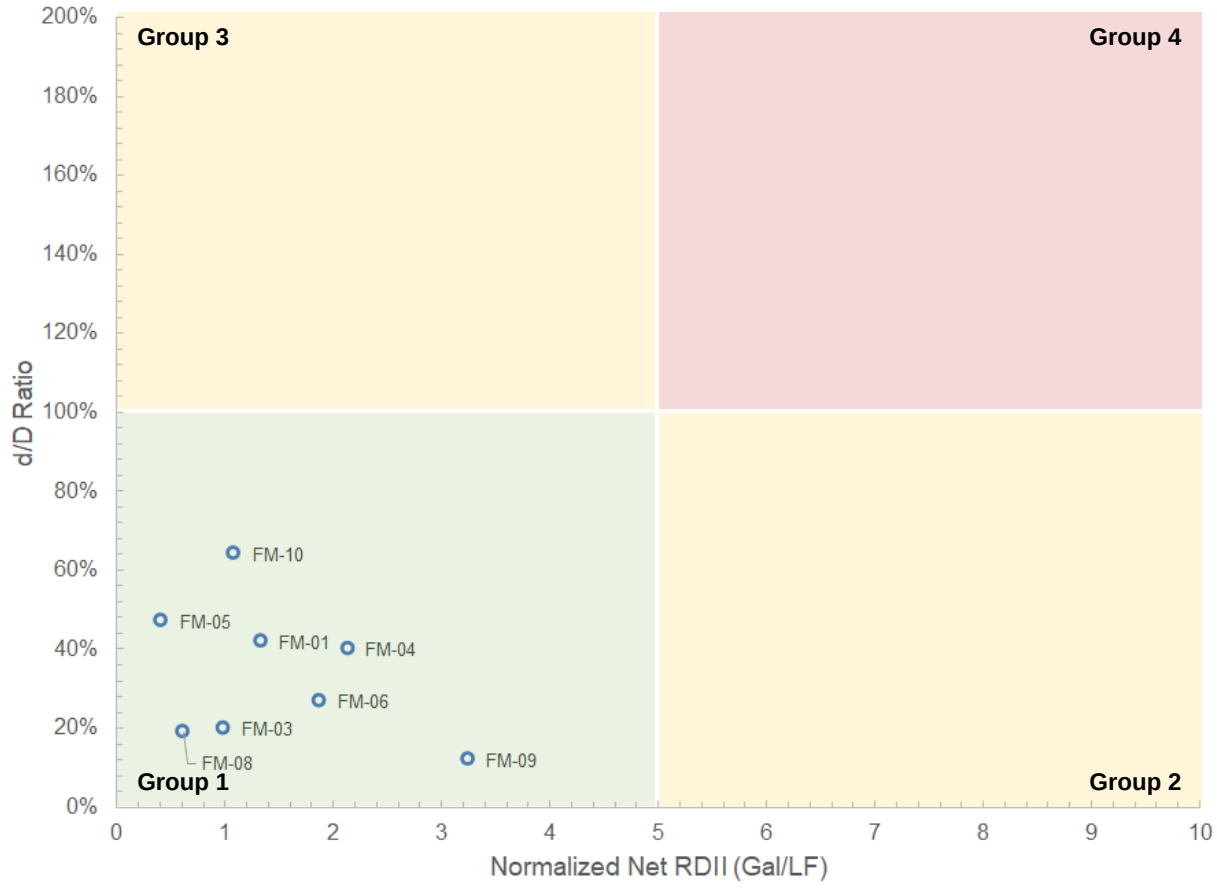
Group 1 RDII is not excessive, and no wet weather surcharge conditions are observed. This is the most preferred group and is least problematic. Wet weather SSO risk is low.

Group 2 RDII is excessive, but no wet weather surcharge conditions are observed. While more RDII is observed than desired, sufficient capacity is available to accommodate it. Wet weather SSO risk is low but is higher than Group 1.

Group 3 RDII is not excessive, but wet weather surcharge conditions are observed. Wet weather system capacity is limited which limits RDII ingress as a result. Wet weather SSO risk is moderate to high.

Group 4 RDII is excessive, and wet weather surcharge condition are observed. This is the least preferred group and is most problematic. Wet weather SSO risk is moderate to high.

FIGURE 11: Normalized Net RDII for Projected 1-inch Storm vs. Depth-to-Diameter Ratio



Based on these classifications, all flow monitor basins are classified in Group 1.

Conclusions and Recommendations

Specific recommendations for further planning, evaluation, or condition assessment activities based on flow monitor and rainfall monitor data from the Study Period are provided below.

Dry Weather Performance

- All of the dry weather peaking factors were within Prosper design requirements, indicating that dry weather peak flows are within anticipated ranges based on average dry weather flows.

- All of the dry weather d/D ratios were within Prosper design requirements, indicating that sufficient capacity is available at the flow monitor locations to convey routine dry weather flows.

- Six flow monitor locations are defined as Class 1 – Self Cleansing. One flow monitor location is defined as Class 2 – Marginal Cleansing, and three flow monitor locations are defined as Class 3 – Non-Cleansing. The local sewer cleaning program should place more emphasis on Marginal and Non-Cleansing locations than Self-Cleansing locations.

- Groundwater infiltration is classified as minor in five basins and moderate in five basins. While sufficient capacity is available to accommodate dry weather infiltration without surcharge conditions, excessive groundwater infiltration consumes sewer capacity that could be otherwise be used for domestic, commercial, institutional, or industrial wastewater or could be used to accommodate wet weather RDII.

Wet Weather Performance

- Two of the wet weather peaking factors exceeded Prosper design requirements, indicating that wet weather peak flows exceed anticipated ranges based on average dry weather flows. These exceedances occurred at Flow Monitor FM-08 and FM-09 during storm events when Flow Monitor FM-07 indicates that the flow diversion may have been active.

- All of the wet weather d/D ratios were within Prosper design requirements, indicating that sufficient capacity is available at the flow monitor locations to convey wet weather flows observed during the Study Period.

- Some RDII was identified in all flow monitor basins associated with this Study but did not exceed a commonly used industry rule-of-thumb for excessive RDII. Rainfall events observed during the Study Period were small and may not be appropriate for gauging the overall wet weather performance of the sanitary sewer system.

Recommendations

- Based on groundwater infiltration estimates, pursue identification of groundwater infiltration sources in Basins FM-01, FM-03, FM-04, FM-06, and FM-08 with closed-circuit television (CCTV) inspection.
- Based on a flow imbalance noted between Proper Point-of-Entry (POE) #2 and ADS Flow Monitor FM-09, ADS recommends that the Town of Prosper and/or FNI further evaluate the flume located at POE #2. Do observed approach conditions agree with assumptions required for proper flume operation? Is the flow depth sensor positioned at the proper location for the flume type? Is the flow depth sensor properly calibrated?

Definitions

Basin – a designation given to a series of interconnected sewers within a sanitary sewer system that collect and convey wastewater to a common manhole, pump station, or wastewater treatment plant. The size and geographic extent of a given basin are system specific. Basin designations are established to provide a consistent nomenclature for system components to facilitate effective planning, operation, and maintenance.

CCTV Inspection – a common diagnostic method used to visually inspect and document the general location, connectivity, and condition of a sewer. CCTV inspection is accomplished using a variety of specially designed camera systems.

Depth-to-Diameter (d/D) Ratio – a ratio of maximum flow depth to sewer diameter. d/D ratios are often calculated to describe both dry weather and wet weather periods and are one measure used to assess sewer capacity utilization. In this study, d/D ratios are computed using hourly average data.

Infiltration – water than enters a sanitary sewer system from the ground through defective system components including, but not limited to, defective sewers, manholes, service connections, or other system appurtenances. Infiltration is primarily dependent on groundwater elevations but may also be influenced by storm events and leaking water mains.

Inflow – storm water runoff that enters a sanitary sewer system from direct connections including, but not limited to, building downspouts, clean-outs, foundation drains, sump pumps, basement and area drains, and cross connections with storm sewer systems.

Manhole Inspection – a common diagnostic method used to visually inspect and document the location and condition of a manhole. Manhole inspection can be accomplished using confined space entry or non-entry techniques.

Peaking Factor (PF) – a ratio of maximum flow rate to average flow rate. Peaking factors are often calculated to describe both dry weather and wet weather periods, where maximum flow rates are compared to average dry weather flow rates. In this study, peaking factors are computed using hourly average data.

Rain-Dependent Infiltration and Inflow (RDII) – the collective infiltration and inflow that enter a sewer system as a direct result of rainfall.

Sanitary Sewer Overflow (SSO) – a discharge of untreated wastewater from a sanitary sewer system, caused by a variety of reasons including, but not limited to, inadequate sewer design and construction, insufficient operation and maintenance, power failures, and vandalism.

Sanitary Sewer System – a collection of sewers, manholes, pump stations, and other appurtenances designed for the collection and transportation of wastewater.

Sewer Cleaning – a common method used to dislodge and removed accumulated debris, grease, and roots within a sewer line to achieve desired conditions for CCTV inspection. Under routine conditions, sewer cleaning is performed using hydraulic jetting and vacuum debris removal techniques.

Sewer System Evaluation Survey – a detailed investigation of a selected portion of a sanitary sewer system to identify system defects that contribute to infiltration and inflow. The results of such an investigation are used to provide recommendations for system planning, operation, and maintenance.

Smoke Testing – a common diagnostic method used to locate and identify potential infiltration and inflow sources within a sanitary sewer system. During smoke testing, a special non-toxic, non-staining smoke is blown into a selected portion of the system. Potential infiltration and inflow sources are evidence by visible smoke.

Tractive Force Method – a method used to evaluate the self-cleansing status of gravity sewers. This approach is recommended by the American Society of Civil Engineers and the Water Environment Federation.

References

1. Perica, S. et al (2018). *NOAA Atlas 14, Volume 11, Version 2, Precipitation-Frequency Atlas of the United States: Texas*, National Oceanic and Atmospheric Administration, National Weather Service; Silver Spring, MD.

2. Bizier, Paul, Editor (2007). *Gravity Sanitary Sewer Design and Construction*, ASCE Manuals and Reports on Engineering Practice No. 60, American Society of Civil Engineers: Reston, VA.

3. Enfinger, K.L. and Surber, M.L. (2016). "Depth Perception – Tracking Sewer Performance Using Design Guidelines and Regulatory Expectations," *Proceedings of the Water Environment Federation Technical Exhibition and Conference*; New Orleans, LA; Water Environt Federation: Alexandria, VA.

4. Enfinger, K.L. and Mitchell, P.S. (2010). "Scattergraph Principles and Practice – Evaluating Self-Cleansing in Existing Sewers Using the Tractive Force Method," *Proceedings of the World Environmental and Water Resources Congrees*; Providence, RI. American Society of Civil Engineers: Reston, VA.

5. Enfinger, K.L. and Stevens, P.L. (2020). "Estimating Groundwater Infiltration in Sewers," *Proceedings of the Pipeline Division Specialty Conference*, San Antonio, TX; American Society of Civil Engineers: Reston, VA.

Appendix A

FRISCO TFM 2023

Flow Monitoring
Site Installation Report

ADS ENVIRONMENTAL SERVICES®

Site I.D.

PSP-FM1

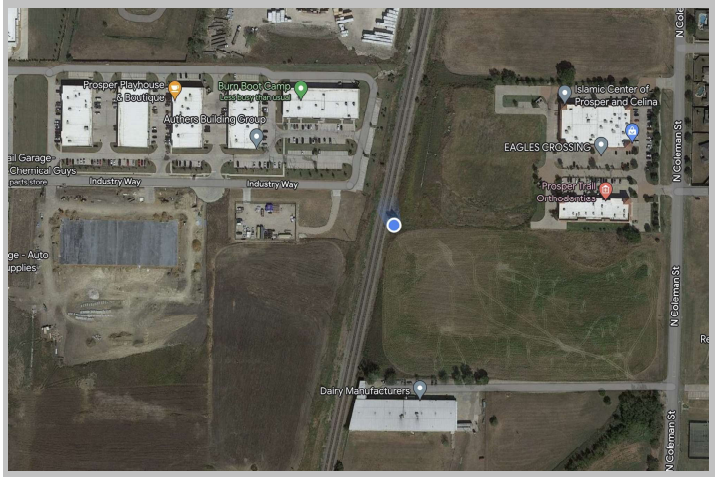
Site Address / Location:	**821 N Coleman St, Prosper, TX 75078**
Site Access:	**Enter through south of address**

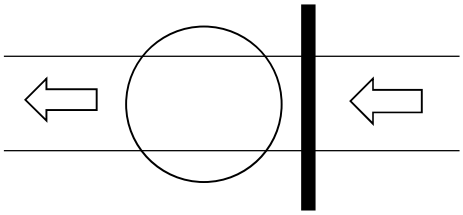
Monitor Series	Location Type
Triton+	Temporary
GPS Coordinates	**Pipe Shape**
33.2433391, -96.8051518	**Elliptical**



Manhole #	System Characteristics
	Industrial
Access	**Traffic**
Drive	**None**







ADS Crew Leader:	Bryan Crews
ADS Field Manager:	Kyle Wulf

Installation Information

Installation Date:	Installation Type:
Wednesday April 05 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
Peak Combo (CS4)	**0 - 5 psi**

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW) (in)
10:48 am	**9.88 x 9.75**
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
3.00	
Downlooker Physical Offset (in)	Measurement Confidence (in)
	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
2.25	
Silt (in)	Silt Type
0	-

Hydraulic Comments:

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
8	**Single**
Manhole Material:	Manhole Condition:
Concrete	**Fair**
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
24	
Manhole Cover	Manhole Frame
Concealed	**Normal**
Active Drop Connections	Air Quality:
Yes, Inside	**20.8, 0, 0, 0**
Pipe Material	Pipe Condition:
PVC	**Good**

Communication Information:

Communication Type	Antenna Location
Wireless	**Drilled Pavement / Concrete**

Additional Site Info. / Comments:

10" incoming drops down to another flow

Additional Photos

Incoming	Outgoing	Down
		

PROSPER TFM 2023

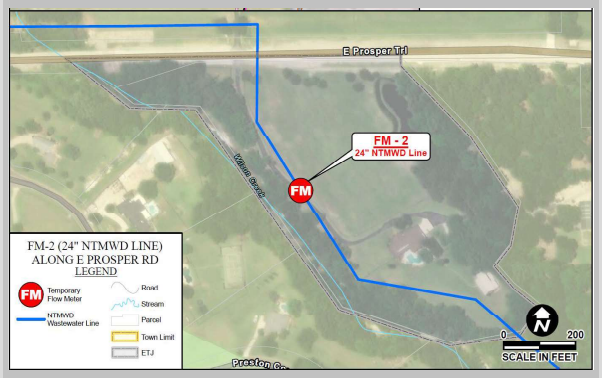
Flow Monitoring
Site Installation Report

Site I.D.

PSP-FM2

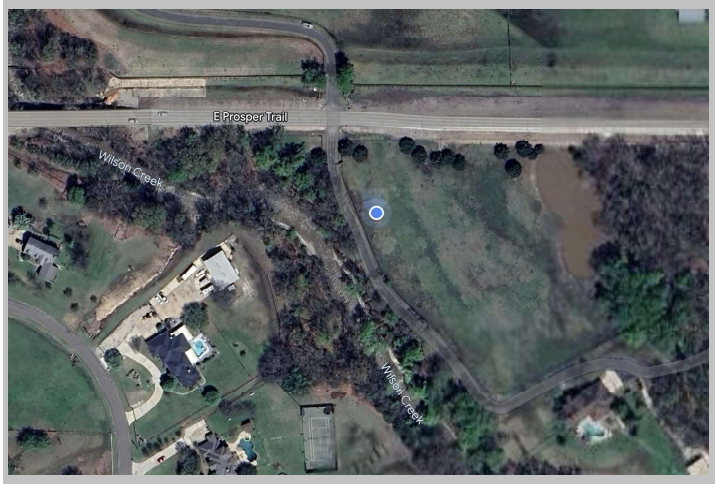
Site Address / Location:	**3730 Prosper Trail, Prosper, TX 75078**
Site Access:	**In the field in front of address**

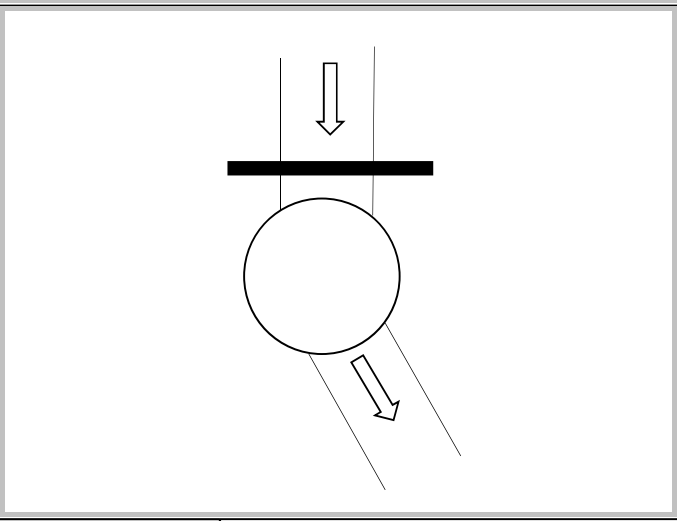
Monitor Series	Location Type
Triton+	Temporary
GPS Coordinates	**Pipe Shape**
33.2471982, -96.7437876	**Elliptical**



Manhole #	System Characteristics
	Residential
Access	**Traffic**
Drive	**None**







ADS Crew Leader:	Bryan Crews
ADS Field Manager:	Kyle Wulf

Installation Information

Installation Date:	Installation Type:
Tuesday April 11 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	**Monitor Location:**
Upstream 0-5 FT	Manhole
Sensors / Devices:	**Pressure Sensor Range (psi)**
AV/Gated	0 - 15 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW) (in)
11:34 am	**23.38 x 23.25**
Depth of Flow (Wet DOF) (in)	**Range (Air DOF) (in)**
5.00	
Downlooker Physical Offset (in)	**Measurement Confidence (in)**
	-
Peak Velocity (fps)	**Velocity Sensor Offset (in)**
2.45	
Silt (in)	**Silt Type**
0	-

Hydraulic Comments:

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
13	**Single**
Manhole Material:	**Manhole Condition:**
Fiberglass	**Good**
Manhole Opening Diameter (in)	**Manhole Diameter (Approx.):**
27	
Manhole Cover	**Manhole Frame**
Bolted	**Normal**
Active Drop Connections	**Air Quality:**
-	**20.8, 0, 0, 20**
Pipe Material	**Pipe Condition:**
PVC	**Good**

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

For access call Rob Franks (972)898-8245

Additional Photos

Incoming	Outgoing	Down
		

FRISCO TFM 2023

Flow Monitoring
Site Installation Report

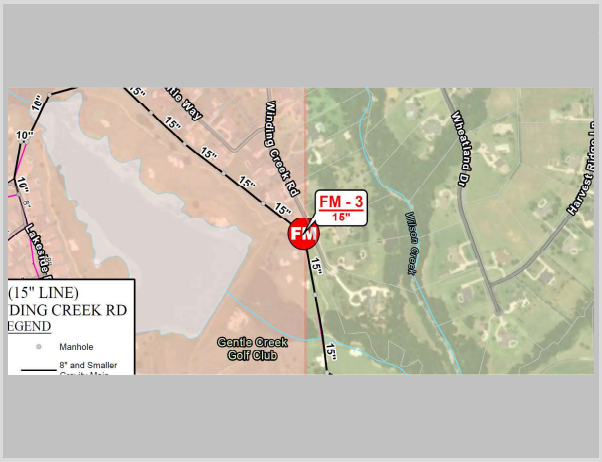
ADS ENVIRONMENTAL SERVICES®

Site I.D.

PSP-FM3

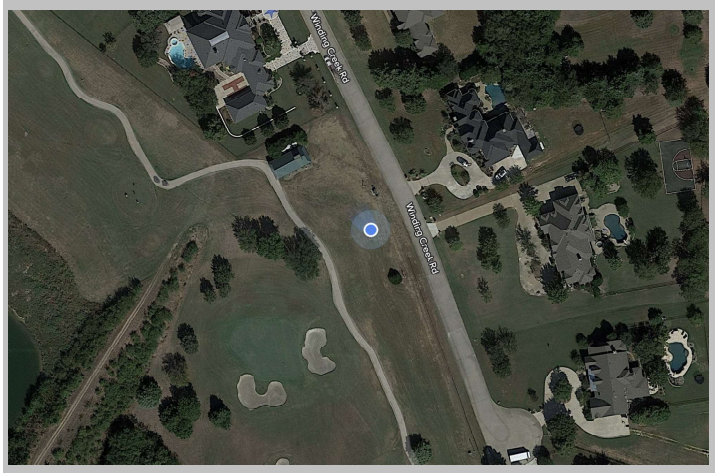
Site Address / Location:	**Gentle Creek Country Club 3131 Prosper Trail, Prosper, TX 75078**
Site Access:	**NW of Green for hole 14**

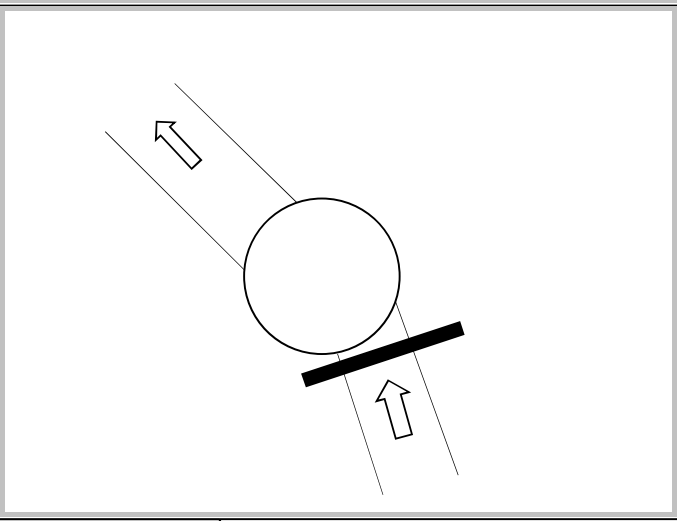
Monitor Series	Location Type
Triton+	Temporary
GPS Coordinates	**Pipe Shape**
33.2529391, -96.7498051	**Elliptical**



Manhole #	System Characteristics
	Residential
Access	**Traffic**
Drive	**None**







ADS Crew Leader:	Bryan Crews
ADS Field Manager:	Kyle Wulf

Installation Information

Installation Date:	Installation Type:
Tuesday April 04 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	**Monitor Location:**
Upstream 0-5 FT	Manhole
Sensors / Devices:	**Pressure Sensor Range (psi)**
Peak Combo (CS4)	0 - 15 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW) (in)
4:19 pm	**14.00 x 15.00**
Depth of Flow (Wet DOF) (in)	**Range (Air DOF) (in)**
2.25	
Downlooker Physical Offset (in)	**Measurement Confidence (in)**
	0.25"
Peak Velocity (fps)	**Velocity Sensor Offset (in)**
2.25	
Silt (in)	**Silt Type**
0	-

Hydraulic Comments:

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
24	**Single**
Manhole Material:	**Manhole Condition:**
Concrete	**Good**
Manhole Opening Diameter (in)	**Manhole Diameter (Approx.):**
24	
Manhole Cover	**Manhole Frame**
Concealed	**Normal**
Active Drop Connections	**Air Quality:**
-	**20.8, 0, 0, 1**
Pipe Material	**Pipe Condition:**
PVC	**Good**

Communication Information:

Communication Type	Antenna Location
Wireless	**Grass (buried)**

Additional Site Info. / Comments:

Additional Photos

Incoming	Outgoing	Down
		

FRISCO TFM 2023

Flow Monitoring
Site Installation Report

ADS ENVIRONMENTAL SERVICES®

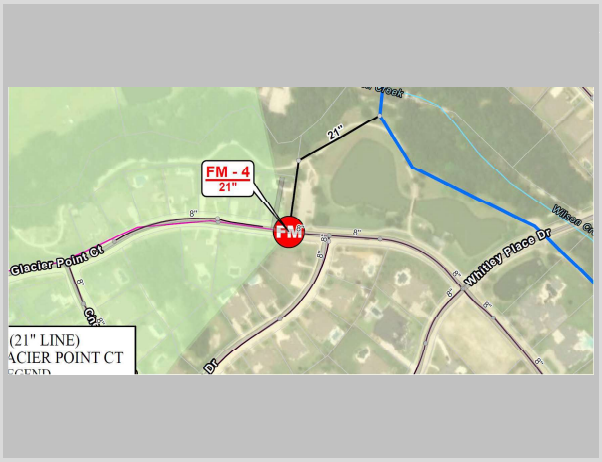
Site I.D.

PSP-FM4

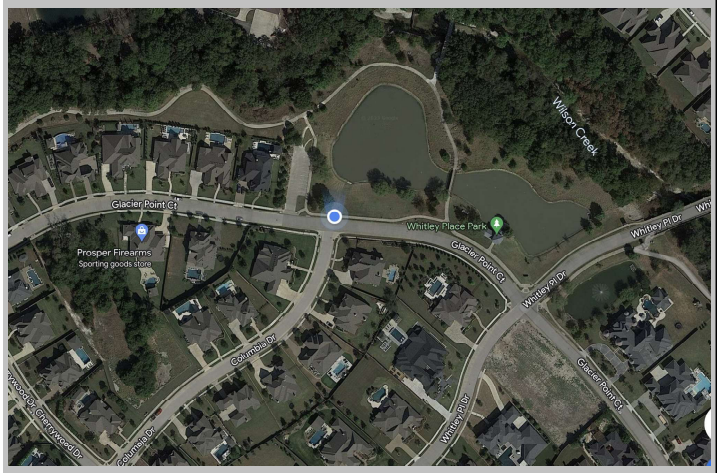
Site Address / Location:	**3911 Glacier Point Ct, Prosper, TX 75078**
Site Access:	**Middle of street near address**

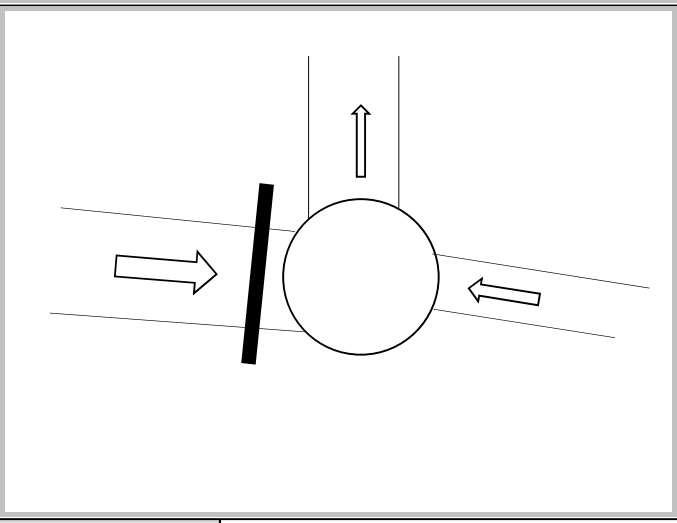
Monitor Series	Location Type
Triton+	Temporary
GPS Coordinates	**Pipe Shape**
33.2422685, -96.7405864	**Elliptical**

Manhole #	System Characteristics
	Residential
Access	**Traffic**
Drive	**Light**









ADS Crew Leader:	Bryan Crews
ADS Field Manager:	Kyle Wulf

Installation Information

Installation Date:	Installation Type:
Tuesday April 04 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
AV/Max (CS9)	0 - 15 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW) (in)
11:23 am	**22.38 x 23.88**
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
7.00	
Downlooker Physical Offset (in)	Measurement Confidence (in)
	-
Peak Velocity (fps)	Velocity Sensor Offset (in)
1.75	
Silt (in)	Silt Type
0	-

Hydraulic Comments:

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
21	**Single**
Manhole Material:	Manhole Condition:
Concrete	**Good**
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
27	
Manhole Cover	Manhole Frame
Concealed	**Normal**
Active Drop Connections	Air Quality:
No	**19.7, 0, 0, 1**
Pipe Material	Pipe Condition:
PVC	**Good**

Communication Information:

Communication Type	Antenna Location
Wireless	**Drilled Pavement / Concrete**

Additional Site Info. / Comments:

Additional Photos

Incoming	Outgoing	Down
		
Additional pipe		
		

FRISCO TFM 2023

Flow Monitoring
Site Installation Report

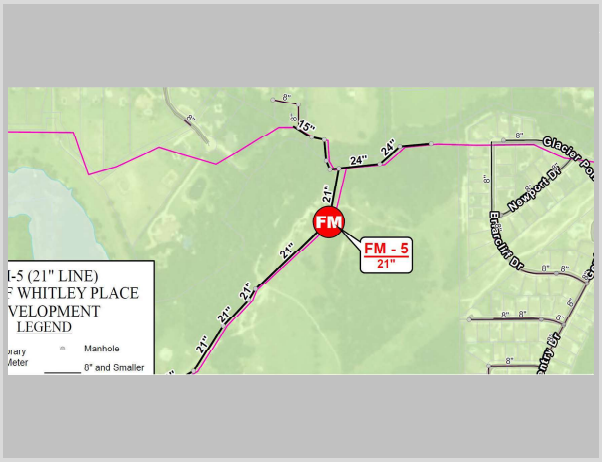
ADS ENVIRONMENTAL SERVICES®

Site I.D.

PSP-FM5

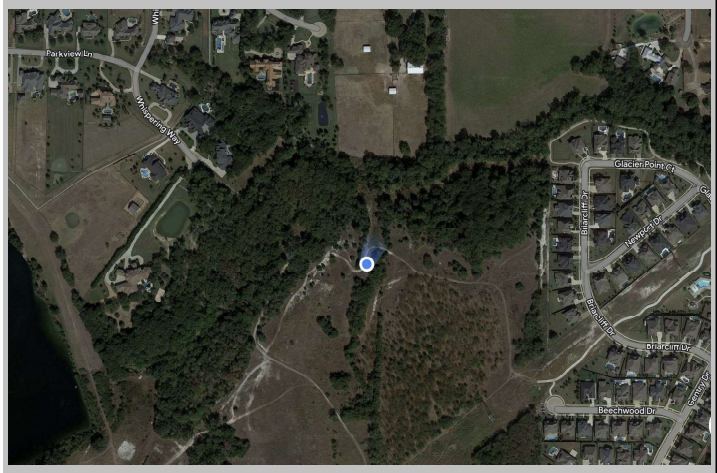
Site Address / Location:	**Wooded area**
Site Access:	**Enter path near 3400 Beechwood Dr., Plano, TX 75078**

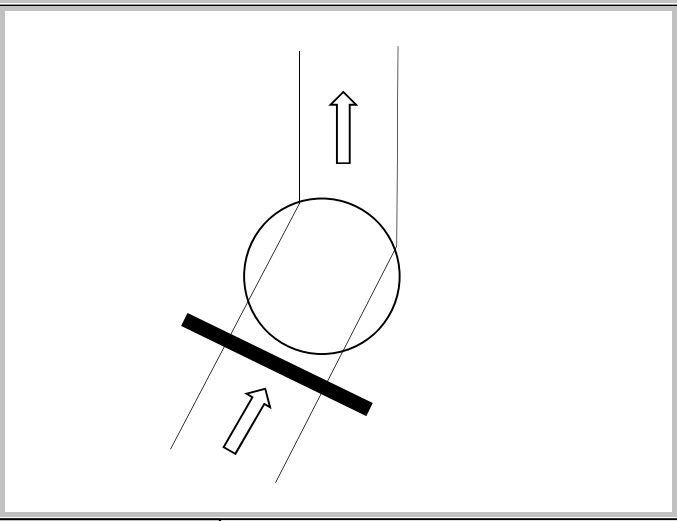
Monitor Series	Location Type
Triton+	Temporary
GPS Coordinates	**Pipe Shape**
33.2404247, -96.7527596	**Elliptical**



Manhole #	System Characteristics
	Residential
Access	**Traffic**
Drive	**None**







ADS Crew Leader:	Bryan Crews
ADS Field Manager:	Kyle Wulf

Installation Information

Installation Date:	Installation Type:
Tuesday April 04 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
AV/Max (CS9)	0 - 15 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW) (in)
1:35 pm	**20.38 x 21**
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
7.38	
Downlooker Physical Offset (in)	Measurement Confidence (in)
	0.25"
Peak Velocity (fps)	Velocity Sensor Offset (in)
0.88	
Silt (in)	Silt Type
3.0	**Sandy / Gravel**

Hydraulic Comments:

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
25.8	**Single**
Manhole Material:	Manhole Condition:
Concrete	**Good**
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
27	
Manhole Cover	Manhole Frame
Concealed	**Normal**
Active Drop Connections	Air Quality:
-	**20.4, 0, 0, 7**
Pipe Material	Pipe Condition:
PVC	**Good**

Communication Information:

Communication Type	Antenna Location
Wireless	**Grass (buried)**

Additional Site Info. / Comments:

Additional Photos

Incoming	Outgoing	Down
		

PROSPER 2023

Flow Monitoring
Site Installation Report

ADS ENVIRONMENTAL SERVICES®

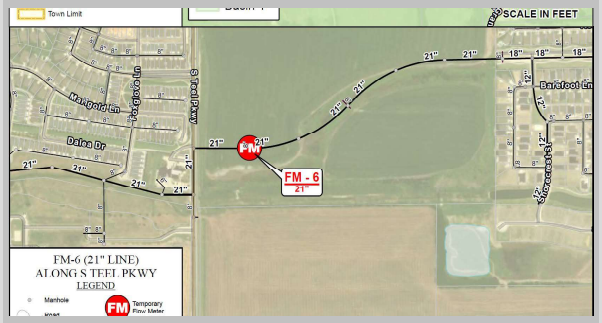
Site I.D.

PSP-FM6

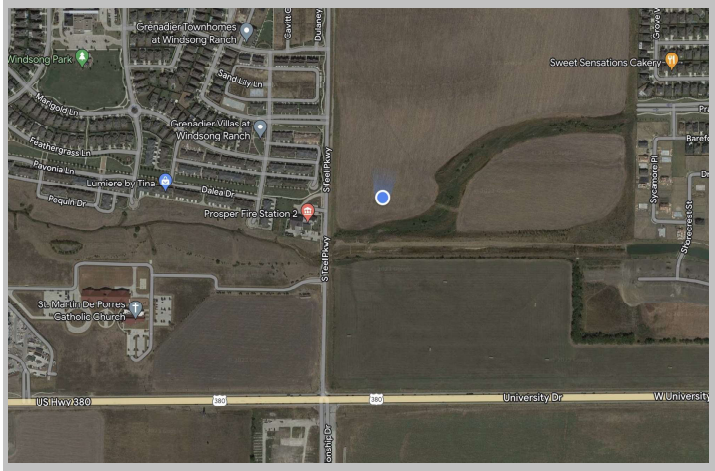
Site Address / Location:	**1140 south S Teel Pkwy, Prosper, TX 75078**
Site Access:	**In the field East of fire station**

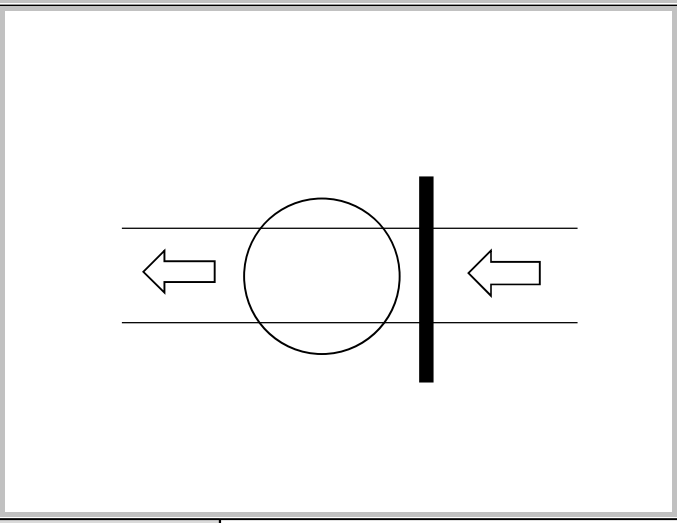
Monitor Series	Location Type
Triton+	Temporary
GPS Coordinates	**Pipe Shape**
33.2236620, -96.8591947	**Elliptical**

Manhole #	System Characteristics
	Industrial
Access	**Traffic**
Drive	**None**









ADS Crew Leader:	Bryan Crews
ADS Field Manager:	Kyle Wulf

Installation Information

Installation Date:	Installation Type:
	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
AV/Max (CS9)	0 - 15 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW) (in)
9:15 am	**20.75 x 20.63**
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
4.25	
Downlooker Physical Offset (in)	Measurement Confidence (in)
	-
Peak Velocity (fps)	Velocity Sensor Offset (in)
0.88	
Silt (in)	Silt Type
0	-

Hydraulic Comments:

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
19	**Single**
Manhole Material:	Manhole Condition:
Concrete	**Good**
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
Manhole Cover	Manhole Frame
Bolted	-
Active Drop Connections	Air Quality:
-	**20.8, 0, 0, 1**
Pipe Material	Pipe Condition:
PVC	**Good**

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

Additional Photos

Incoming	Outgoing	Down
		

FRISCO TFM 2023

Flow Monitoring
Site Installation Report

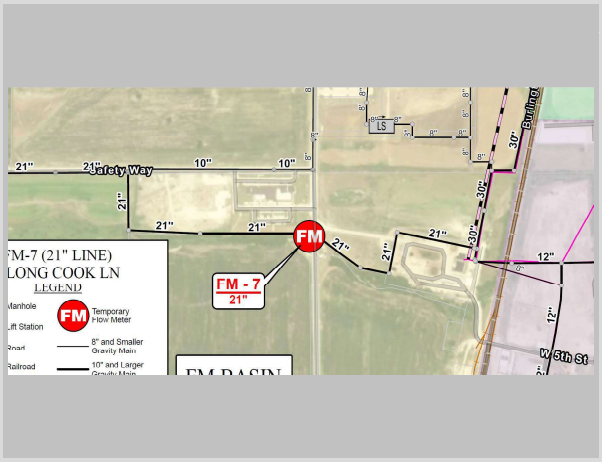
ADS ENVIRONMENTAL SERVICES®

Site I.D.

PSP-FM7

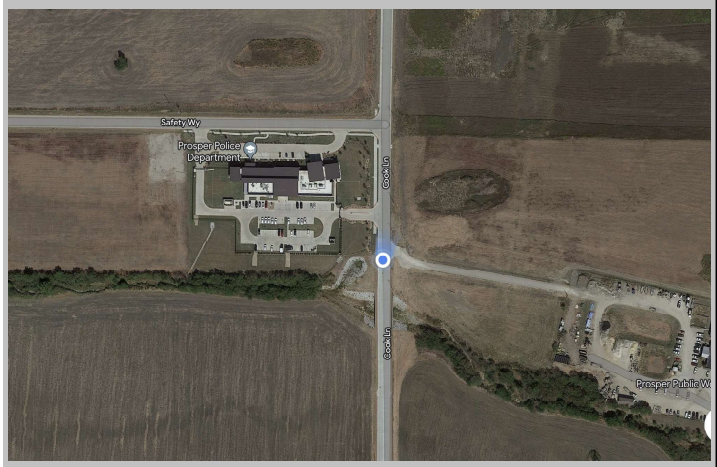
Site Address / Location:	**Cook Ln East of Police Station 801 Safety Way, Prosper, TX 75078**
Site Access:	**Middle of the road**

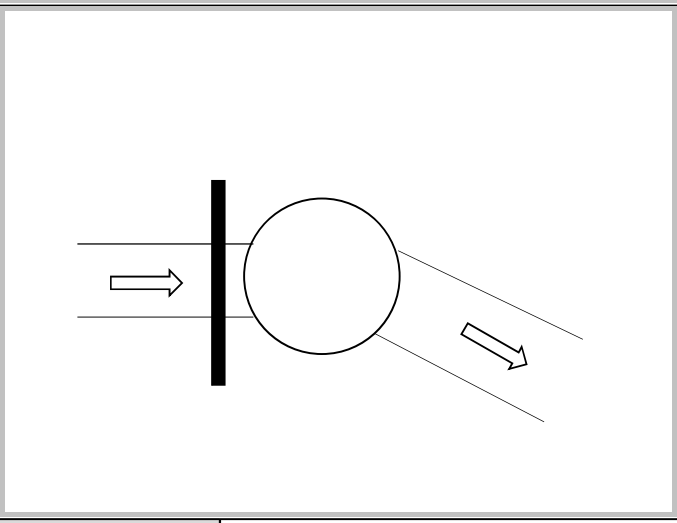
Monitor Series	Location Type
Triton+	Temporary
GPS Coordinates	**Pipe Shape**
33.2397997, -96.8108073	**Elliptical**



Manhole #	System Characteristics
	Industrial
Access	**Traffic**
Drive	**Medium**







ADS Crew Leader:	Bryan Crews
ADS Field Manager:	Kyle Wulf

Installation Information

Installation Date:	Installation Type:
Wednesday April 05 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	**Monitor Location:**
Upstream 0-5 FT	Manhole
Sensors / Devices:	**Pressure Sensor Range (psi)**
Peak Combo (CS4), Smart Depth (CS5)	0 - 15 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW) (in)
0:38 am	**20.50 x 20.00**
Depth of Flow (Wet DOF) (in)	**Range (Air DOF) (in)**
0.63	
Downlooker Physical Offset (in)	**Measurement Confidence (in)**
1.38	**0.25"**
Peak Velocity (fps)	**Velocity Sensor Offset (in)**
0.00	
Silt (in)	**Silt Type**
0	-

Hydraulic Comments:

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
20	**Single**
Manhole Material:	**Manhole Condition:**
Concrete	**Good**
Manhole Opening Diameter (in)	**Manhole Diameter (Approx.):**
27	
Manhole Cover	**Manhole Frame**
Unbolted	**Normal**
Active Drop Connections	**Air Quality:**
-	**20.8, 0, 0, 2**
Pipe Material	**Pipe Condition:**
PVC	**Good**

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

Additional Photos

Incoming	Outgoing	Down
		

FRISCO TFM 2023

Flow Monitoring
Site Installation Report

Site I.D.

PSP-FM8

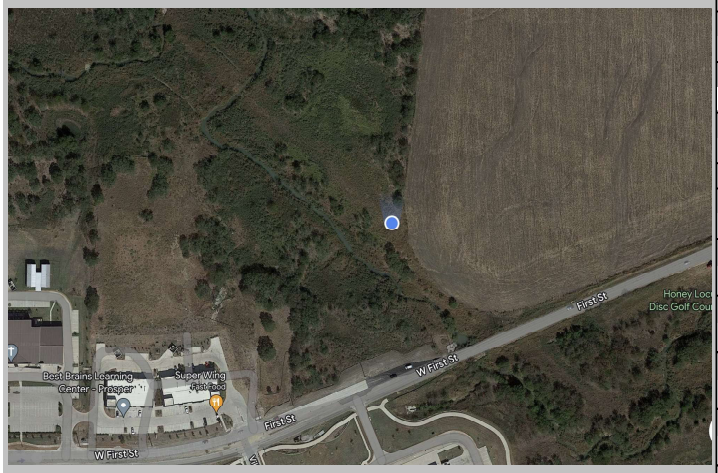
Site Address / Location:	**2380 Fallsview Ct., Prosper, TX 75078**
Site Access:	**Use access road to field west of address off Legacy Dr**

Monitor Series	Location Type
Triton+	Temporary
GPS Coordinates	**Pipe Shape**
33.2316158, -96.8428855	**Elliptical**



Manhole #	System Characteristics
	Commercial
Access	**Traffic**
Drive	**None**





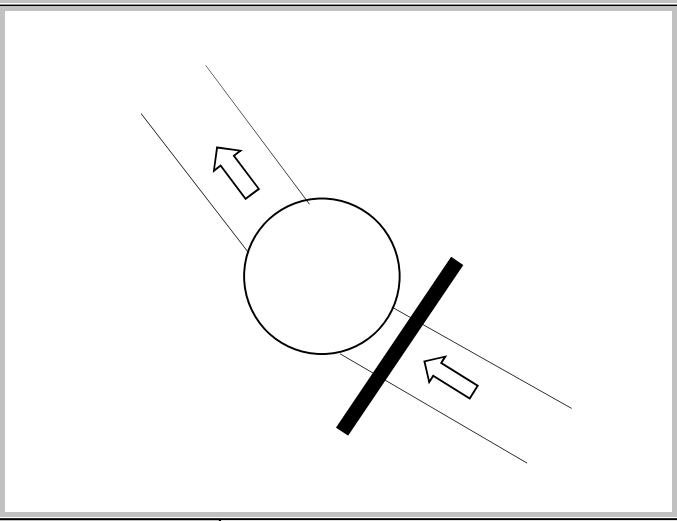
Installation Information

Installation Date:	Installation Type:
Wednesday April 05 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	**Monitor Location:**
Upstream 0-5 FT	Manhole
Sensors / Devices:	**Pressure Sensor Range (psi)**
Peak Combo (CS4)	0 - 15 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW) (in)
3:38 pm	**35.50 x 35.88**
Depth of Flow (Wet DOF) (in)	**Range (Air DOF) (in)**
2.75	
Downlooker Physical Offset (in)	**Measurement Confidence (in)**
	0.25"
Peak Velocity (fps)	**Velocity Sensor Offset (in)**
1.91	
Silt (in)	**Silt Type**
0	-

Hydraulic Comments:



Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
22	**Single**
Manhole Material:	**Manhole Condition:**
Concrete	**Good**
Manhole Opening Diameter (in)	**Manhole Diameter (Approx.):**
30	
Manhole Cover	**Manhole Frame**
Bolted	**Normal**
Active Drop Connections	**Air Quality:**
No	**20.8, 0, 0, 3**
Pipe Material	**Pipe Condition:**
PVC	**Good**

Communication Information:

Communication Type	Antenna Location
Wireless	**Grass (buried)**

Additional Site Info. / Comments:

ADS Crew Leader:	Bryan Crews
ADS Field Manager:	Kyle Wulf

Additional Photos

Incoming	Outgoing	Down
		

FRISCO TFM 2023

Flow Monitoring
Site Installation Report

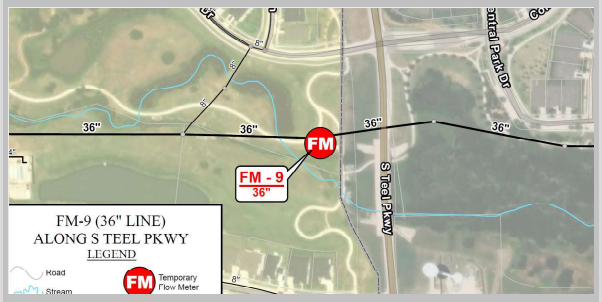
ADS ENVIRONMENTAL SERVICES®

Site I.D.

PSP-FM9

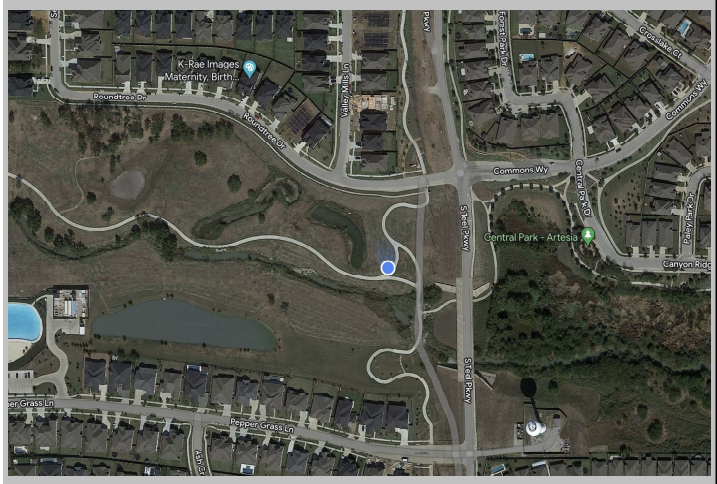
Site Address / Location:	**North of 3760 Pepper Grass Ln, Prosper, TX 76209**
Site Access:	**Access walk path East of address**

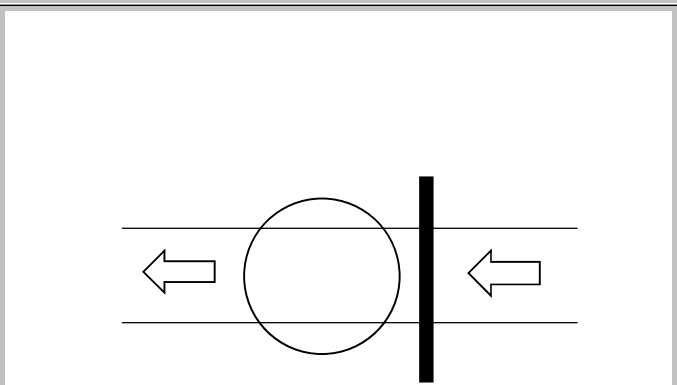
Monitor Series	Location Type
Triton+	Temporary
GPS Coordinates	**Pipe Shape**
33.2354954, -96.8611057	**Elliptical**



Manhole #	System Characteristics
	Residential
Access	**Traffic**
Drive	**None**







ADS Crew Leader:	Bryan Crews
ADS Field Manager:	Kyle Wulf

Installation Information

Installation Date:	Installation Type:
Wednesday April 05 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	**Monitor Location:**
Upstream 0-5 FT	Manhole
Sensors / Devices:	**Pressure Sensor Range (psi)**
AV/Max (CS9)	0 - 15 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW) (in)
4:50 pm	**35.00 x 36.38**
Depth of Flow (Wet DOF) (in)	**Range (Air DOF) (in)**
2.63	
Downlooker Physical Offset (in)	**Measurement Confidence (in)**
	0.25"
Peak Velocity (fps)	**Velocity Sensor Offset (in)**
2.55	
Silt (in)	**Silt Type**
0	-

Hydraulic Comments:

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
21	**Single**
Manhole Material:	**Manhole Condition:**
Concrete	**Good**
Manhole Opening Diameter (in)	**Manhole Diameter (Approx.):**
27	
Manhole Cover	**Manhole Frame**
Concealed	**Normal**
Active Drop Connections	**Air Quality:**
-	
Pipe Material	**Pipe Condition:**
PVC	**Good**

Communication Information:

Communication Type	Antenna Location
Wireless	**Manhole Pick / Vent Hole**

Additional Site Info. / Comments:

Additional Photos

Incoming	Outgoing	Down
		

FRISCO TFM 2023

Flow Monitoring
Site Installation Report

ADS ENVIRONMENTAL SERVICES®

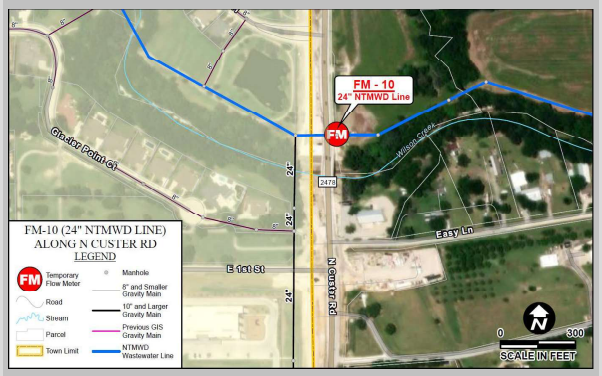
Site I.D.

PSP-FM10

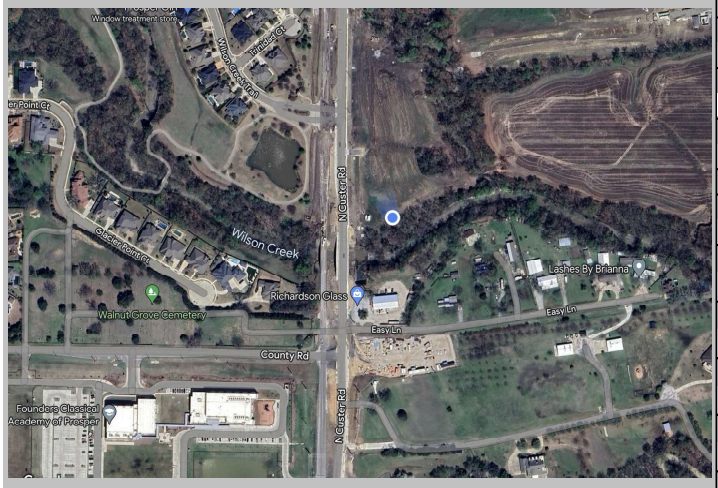
Site Address / Location:	**Walnut Grove Cemetery Prosper, TX 75078**
Site Access:	**Located North of the East gate**

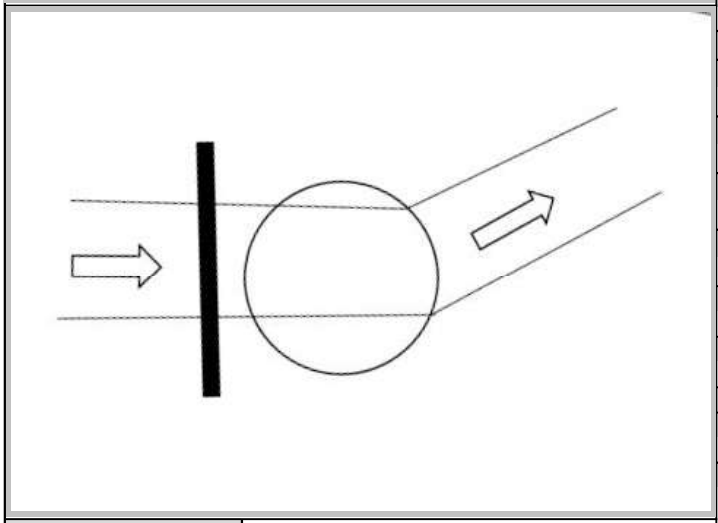
Monitor Series	Location Type
Triton+	Temporary
GPS Coordinates	**Pipe Shape**
33.2380440, -96.7317371	**Elliptical**

Manhole #	System Characteristics
	Industrial
Access	**Traffic**
Drive	**None**









ADS Crew Leader:	Bryan Crews
ADS Field Manager:	Kyle Wulf

Installation Information

Installation Date:	Installation Type:
Tuesday April 11 2023	Doppler Standard Ring and Crank
Monitoring Location (Sensors):	Monitor Location:
Upstream 0-5 FT	Manhole
Sensors / Devices:	Pressure Sensor Range (psi)
AV/Gated	0 - 15 psi

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW) (in)
8:44 am	**23.38 x 23.75**
Depth of Flow (Wet DOF) (in)	Range (Air DOF) (in)
11.38	
Downlooker Physical Offset (in)	Measurement Confidence (in)
	-
Peak Velocity (fps)	Velocity Sensor Offset (in)
1.98	
Silt (in)	Silt Type
0	-

Hydraulic Comments:

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
19	**Single**
Manhole Material:	Manhole Condition:
Fiberglass	**Good**
Manhole Opening Diameter (in)	Manhole Diameter (Approx.):
27	
Manhole Cover	Manhole Frame
Bolted	**Normal**
Active Drop Connections	Air Quality:
-	**20.8, 0, 0, 2**
Pipe Material	Pipe Condition:
PVC	**Good**

Communication Information:

Communication Type	Antenna Location
Wireless	Manhole Pick / Vent Hole

Additional Site Info. / Comments:

Additional Photos

Incoming	Outgoing	Down
		

PROSPER 2023

Flow Monitoring
Site Installation Report

ADS ENVIRONMENTAL SERVICES®

Site I.D.

PSPRG1

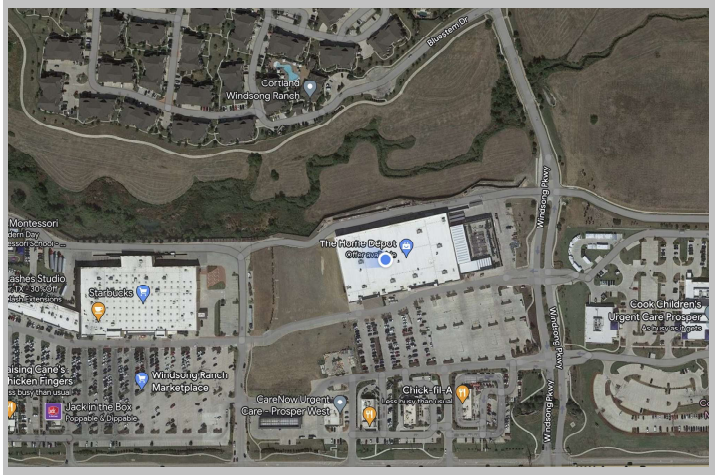
Site Address / Location:	**4450 W University Dr., Prosper, TX 75078**
Site Access:	**On top of Home Depot**

Monitor Series	Location Type
Triton+	Temporary
GPS Coordinates	**Pipe Shape**
33.2212300, -96.8746526	-



Manhole #	System Characteristics
	Commercial
Access	**Traffic**
Roof	**None**





Installation Information

Installation Date:	Installation Type:
Thursday April 06 2023	**Rain Gauge**
Monitoring Location (Sensors):	**Monitor Location:**
Rooftop	**Building**
Sensors / Devices:	**Pressure Sensor Range (psi)**
Rain Gauge Tipping Bucket	-

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW) (in)
Depth of Flow (Wet DOF) (in)	**Range (Air DOF) (in)**
Downlooker Physical Offset (in)	**Measurement Confidence (in)**
	-
Peak Velocity (fps)	**Velocity Sensor Offset (in)**
Silt (in)	**Silt Type**
	-

Hydraulic Comments:

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
	-
Manhole Material:	**Manhole Condition:**
-	-
Manhole Opening Diameter (in)	**Manhole Diameter (Approx.):**
Manhole Cover	**Manhole Frame**
-	-
Active Drop Connections	**Air Quality:**
-	
Pipe Material	**Pipe Condition:**
-	-

Communication Information:

Communication Type	Antenna Location
Wireless	-

Additional Site Info. / Comments:

ADS Crew Leader:	Bryan Crews
ADS Field Manager:	Kyle Wulf

PROSPER 2023

Flow Monitoring
Site Installation Report

Site I.D.

PSPRG2

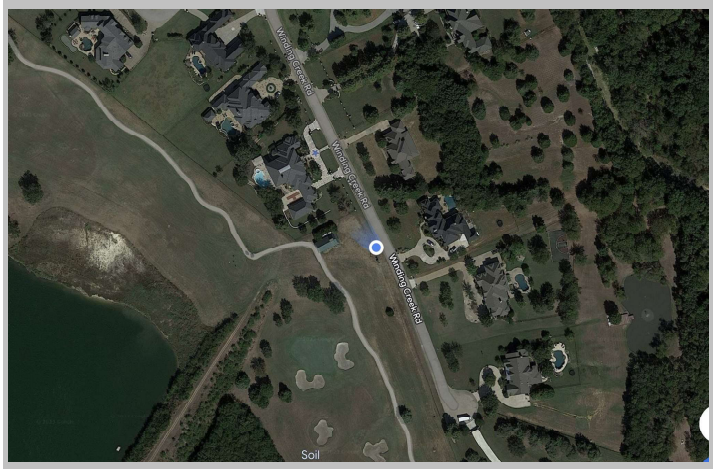
Site Address / Location:	**1320 winding creek Rd, Prosper, TX 75978**
Site Access:	**On golf course next to monitor PSP-FM3**

Monitor Series	Location Type
Triton+	Temporary
GPS Coordinates	**Pipe Shape**
33.253127, -96.7498008	-



Manhole #	System Characteristics
	Residential
Access	**Traffic**
Drive	**None**





Installation Information

Installation Date:	Installation Type:
Thursday April 06 2023	**Rain Gauge**
Monitoring Location (Sensors):	**Monitor Location:**
Field	**Box**
Sensors / Devices:	**Pressure Sensor Range (psi)**
Rain Gauge Tipping Bucket	-

Installation Confirmation:

Confirmation Time:	Pipe Size (HxW) (in)
Depth of Flow (Wet DOF) (in)	**Range (Air DOF) (in)**
Downlooker Physical Offset (in)	**Measurement Confidence (in)**
	-
Peak Velocity (fps)	**Velocity Sensor Offset (in)**
Silt (in)	**Silt Type**
	-

Hydraulic Comments:

Manhole / Pipe Information:

Manhole Depth (Approx. FT):	Manhole Configuration
	-
Manhole Material:	**Manhole Condition:**
-	-
Manhole Opening Diameter (in)	**Manhole Diameter (Approx.):**
Manhole Cover	**Manhole Frame**
-	-
Active Drop Connections	**Air Quality:**
-	
Pipe Material	**Pipe Condition:**
-	-

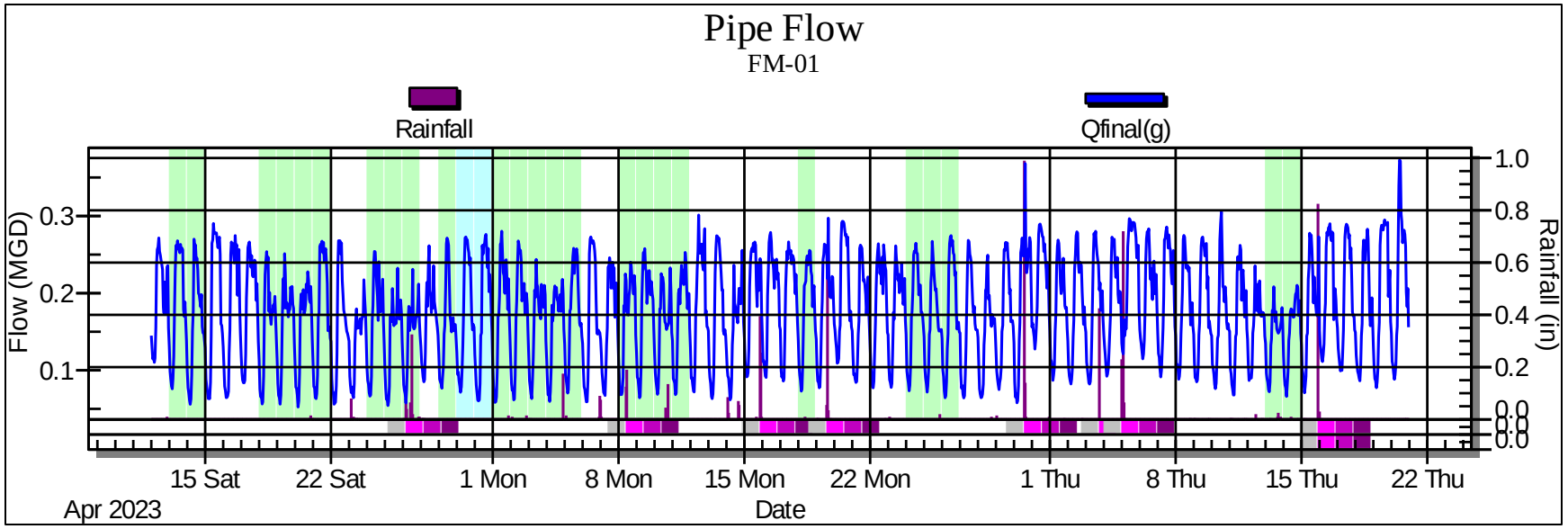
Communication Information:

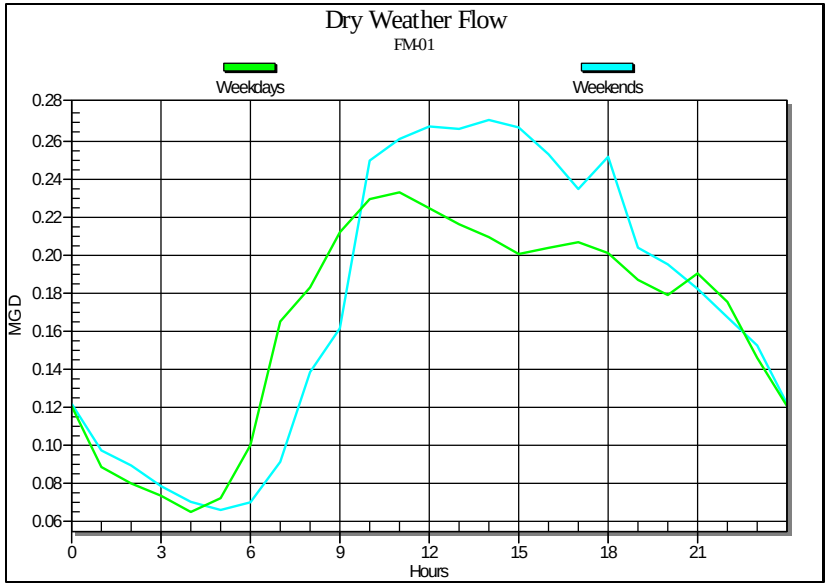
Communication Type	Antenna Location
Wireless	-

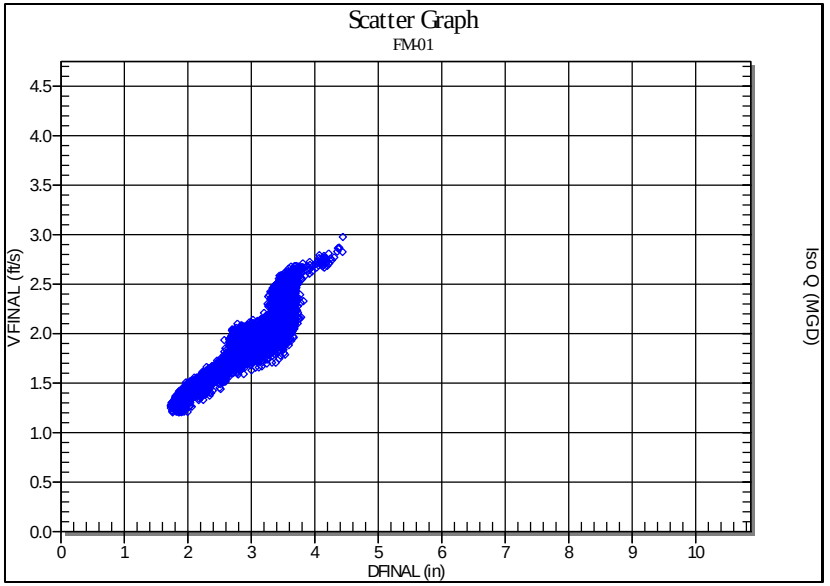
Additional Site Info. / Comments:

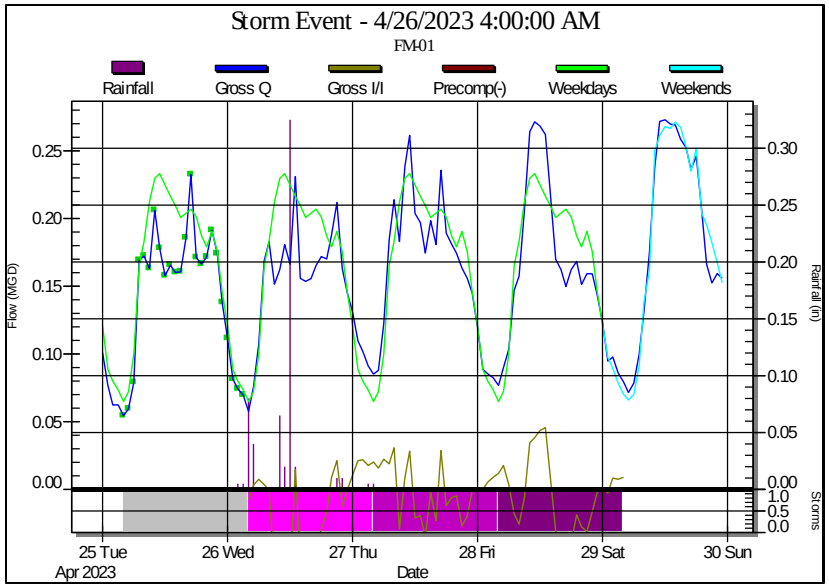
ADS Crew Leader:	Bryan Crews
ADS Field Manager:	Kyle Wulf

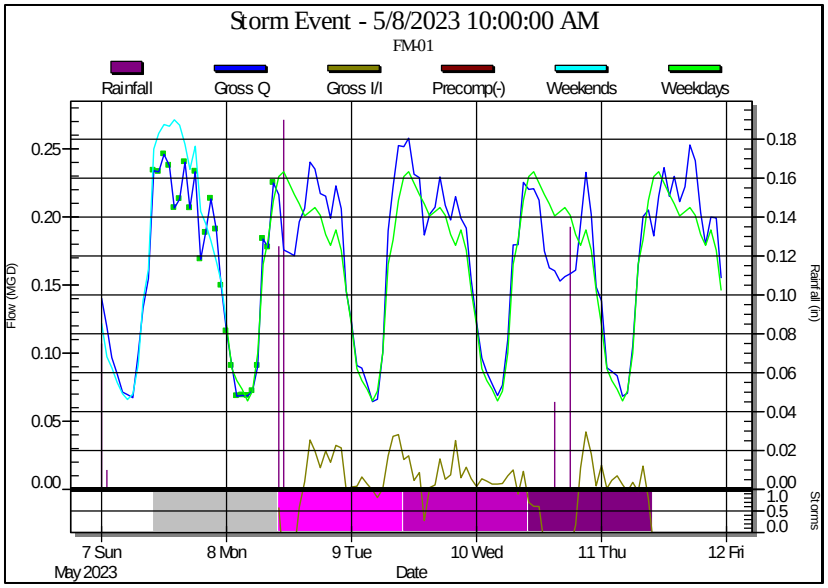
Appendix B

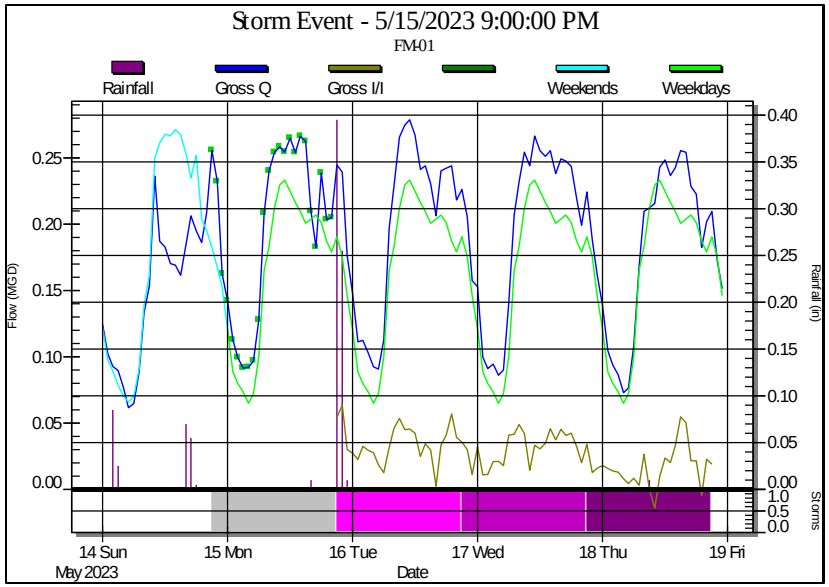

Pipe Flow
FM-01
Rainfall
Qfinal(g)
Flow (MGD)
0.3
0.2
0.1
1.0
0.8
0.6
0.4
0.2
0.0
Rainfall (in)
15 Sat
22 Sat
1 Mon
8 Mon
15 Mon
22 Mon
1 Thu
8 Thu
15 Thu
22 Thu
Apr 2023
Date

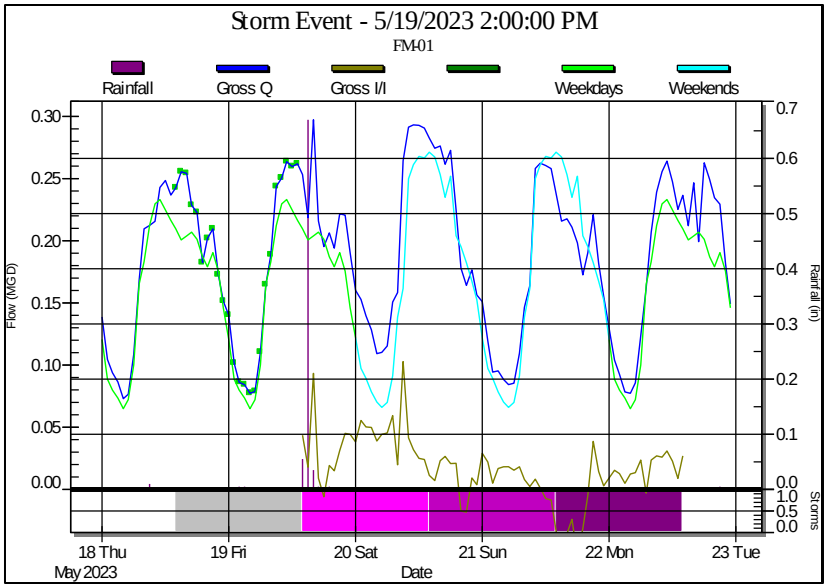

Dry Weather Flow
FM-01
Weekdays
Weekends
MGD
0.28
0.26
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0
3
6
9
12
15
18
21
Hours

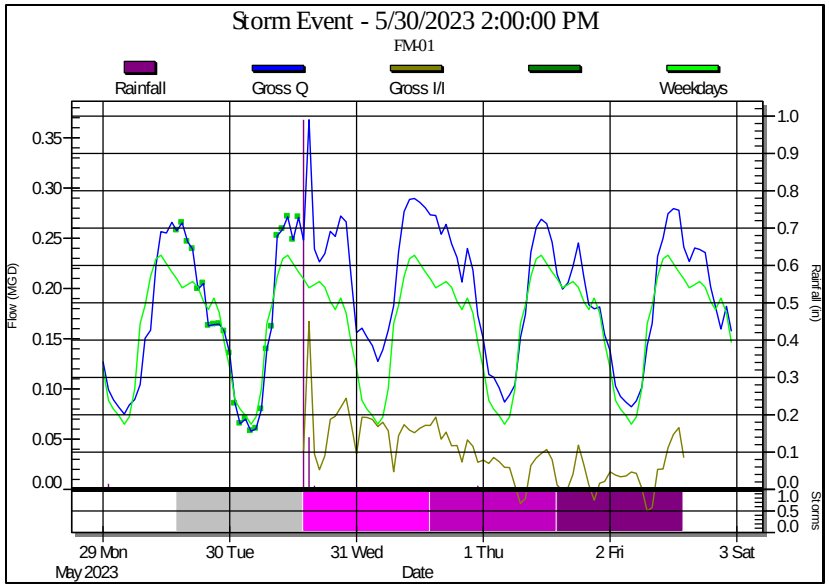

Scatter Graph
FM-01
VFINAL (ft/s)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
1
2
3
4
5
6
7
8
9
10
DFINAL (in)
Iso Q (MGD)

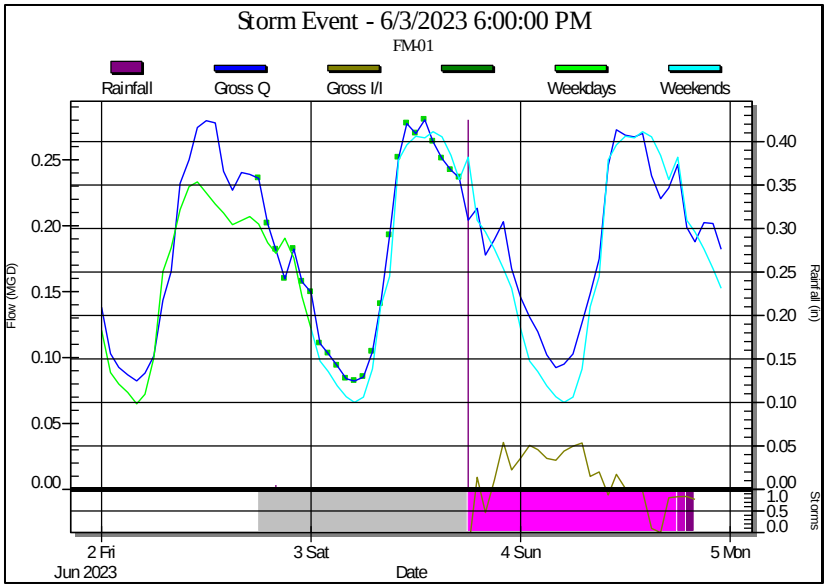

Storm Event - 4/26/2023 4:00:00 AM
FM-01
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
25 Tue
26 Wed
27 Thu
28 Fri
29 Sat
30 Sun
Apr 2023
Date

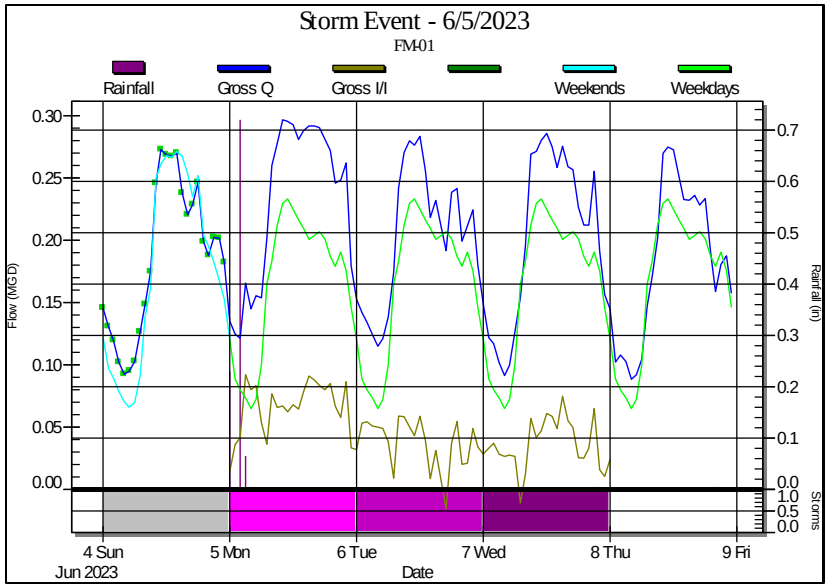

Storm Event - 5/8/2023 10:00:00 AM
FM-01
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
7 Sun
8 Mon
9 Tue
10 Wed
11 Thu
12 Fri
May 2023
Date

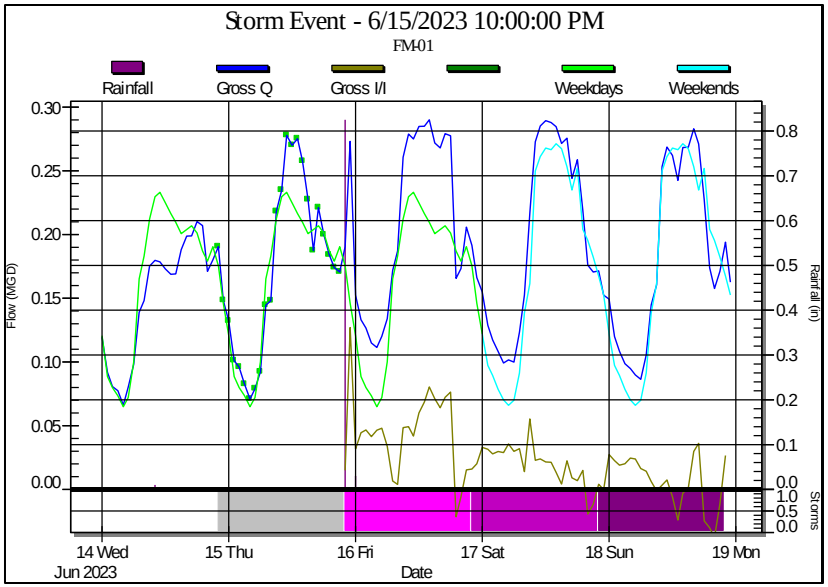

Storm Event - 5/15/2023 9:00:00 PM
FM-01
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
May 2023
Date

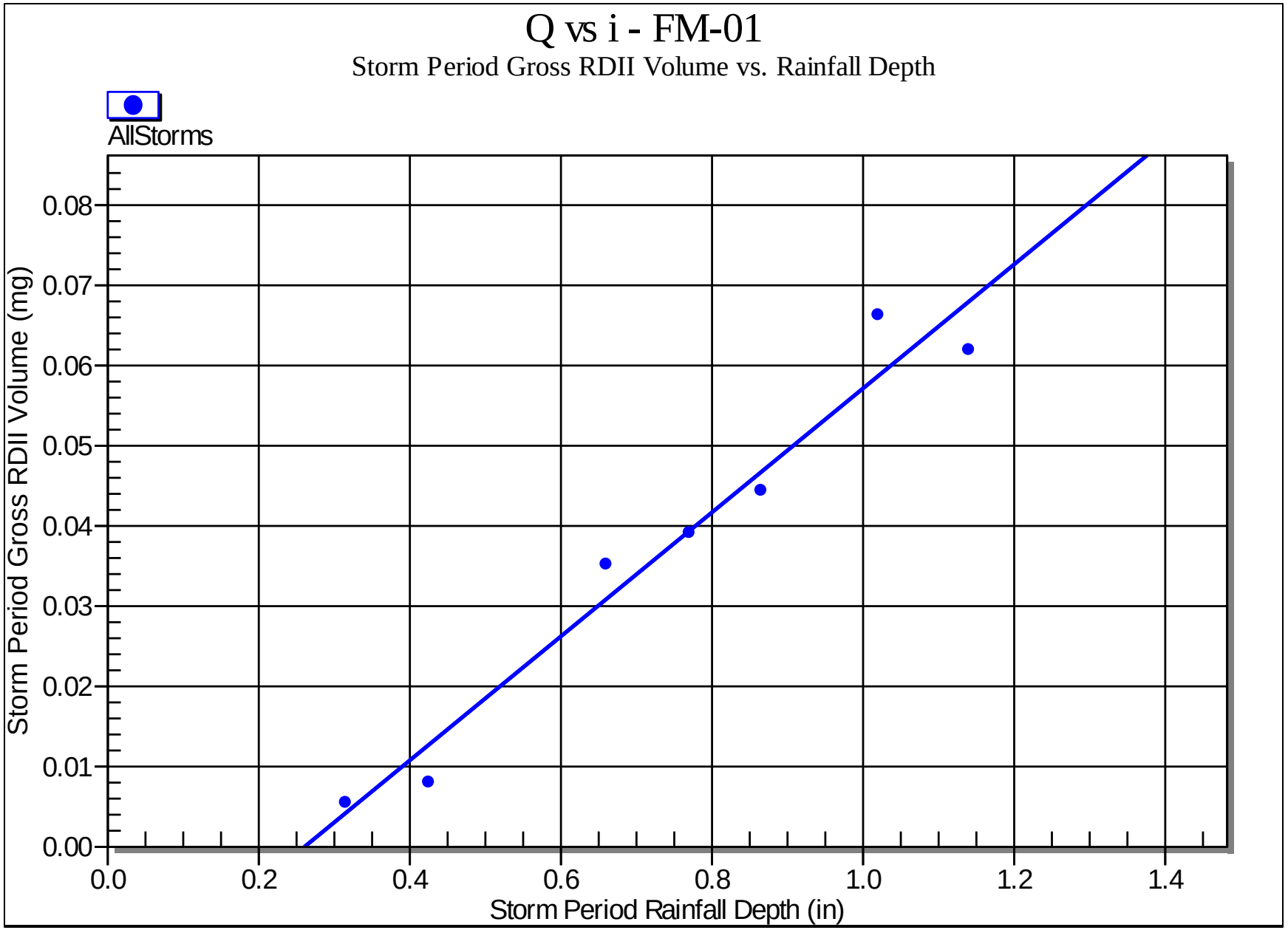

Storm Event - 5/19/2023 2:00:00 PM
FM-01
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
18 Thu
19 Fri
20 Sat
21 Sun
22 Mon
23 Tue
May 2023
Date

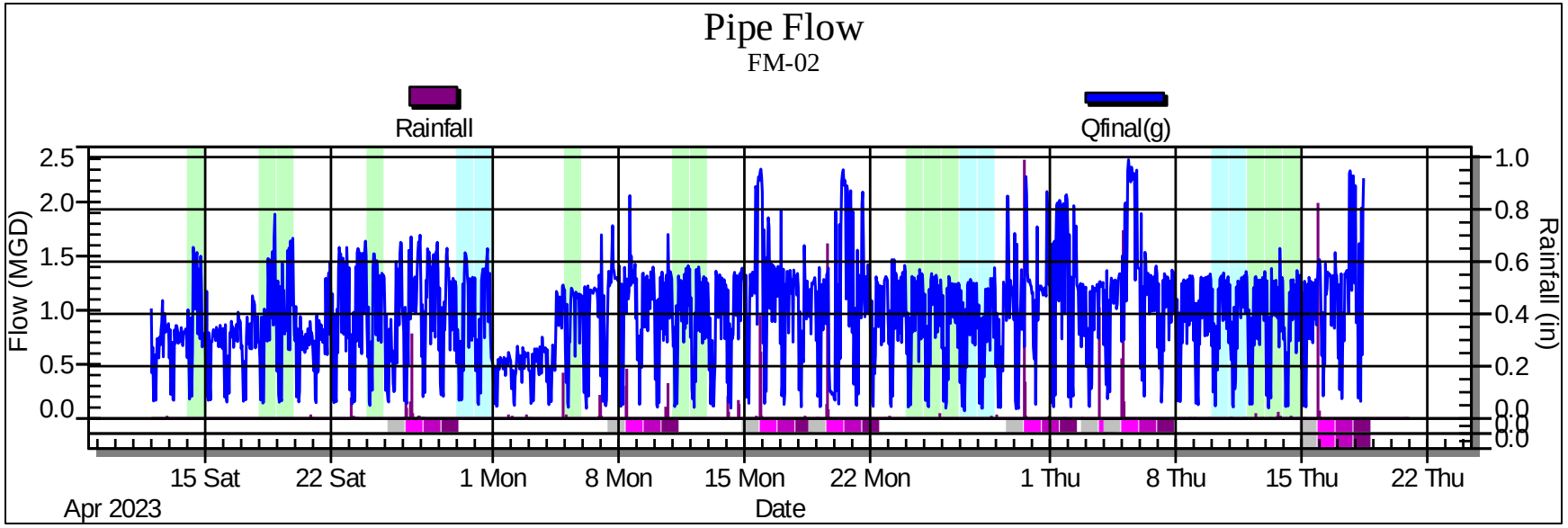

Storm Event - 5/30/2023 2:00:00 PM
FM-01
Rainfall
Gross Q
Gross I/I
Weekdays
Flow (MGD)
Rainfall (in)
Storms
29 Mon
May 2023
30 Tue
31 Wed
1 Thu
2 Fri
3 Sat
Date

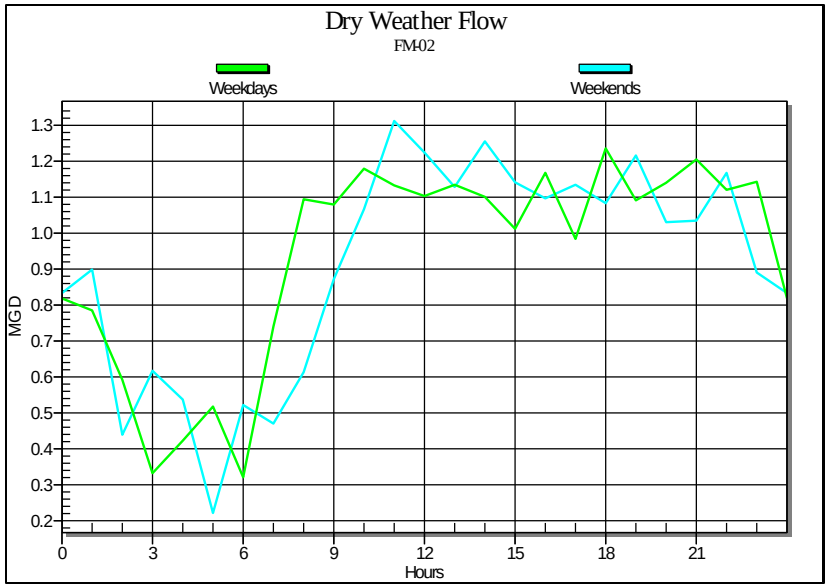

Storm Event - 6/3/2023 6:00:00 PM
FM-01
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
2 Fri
Jun 2023
3 Sat
4 Sun
5 Mon
Date

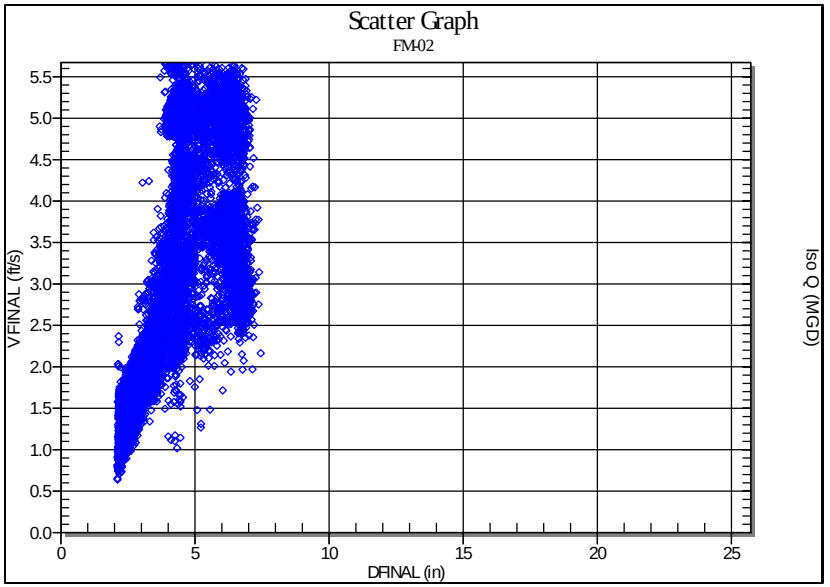

Storm Event - 6/5/2023
FM-01
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
4 Sun
Jun 2023
5 Mon
6 Tue
7 Wed
8 Thu
9 Fri
Date

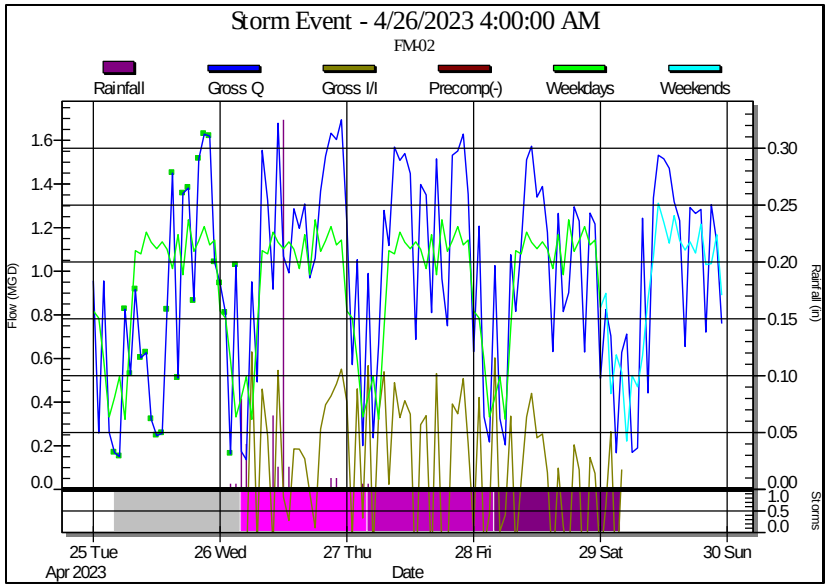

Storm Event - 6/15/2023 10:00:00 PM
FM-01
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
14 Wed
Jun 2023
15 Thu
16 Fri
17 Sat
18 Sun
19 Mon
Date

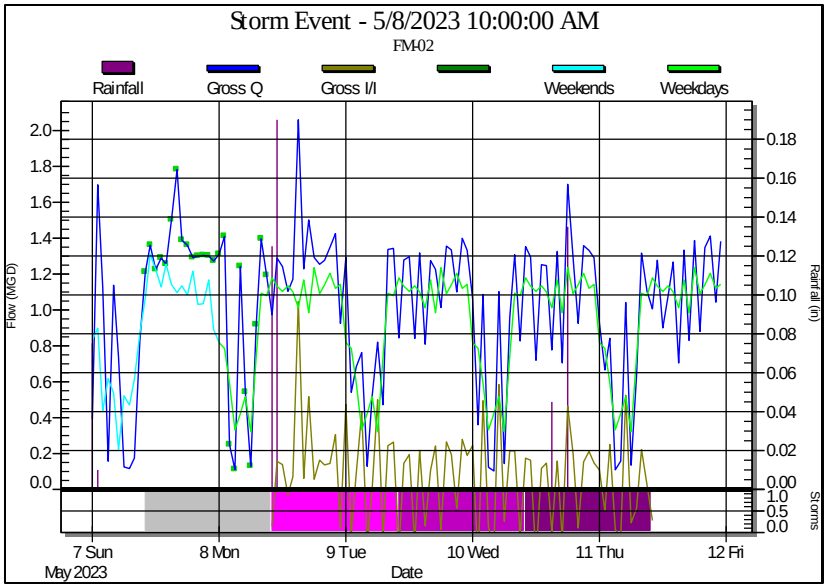

Q vs i - FM-01
Storm Period Gross RDII Volume vs. Rainfall Depth
AllStorms
Storm Period Gross RDII Volume (mg)
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
Storm Period Rainfall Depth (in)

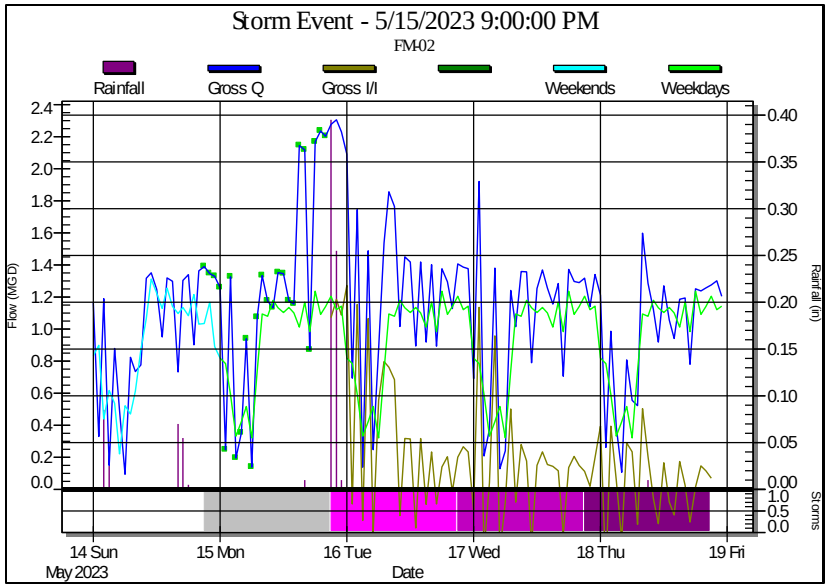

Pipe Flow
FM-02
Rainfall
Qfinal(g)
Flow (MGD)
Rainfall (in)
2.5
2.0
1.5
1.0
0.5
0.0
1.0
0.8
0.6
0.4
0.2
0.0
15 Sat
22 Sat
1 Mon
8 Mon
15 Mon
22 Mon
1 Thu
8 Thu
15 Thu
22 Thu
Apr 2023
Date

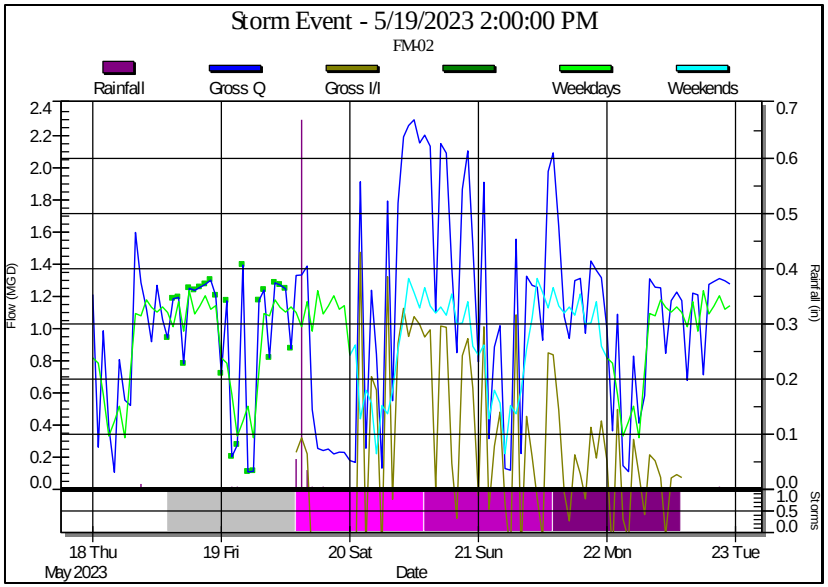

Dry Weather Flow
FM-02
Weekdays
Weekends
MGD
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0
3
6
9
12
15
18
21
Hours

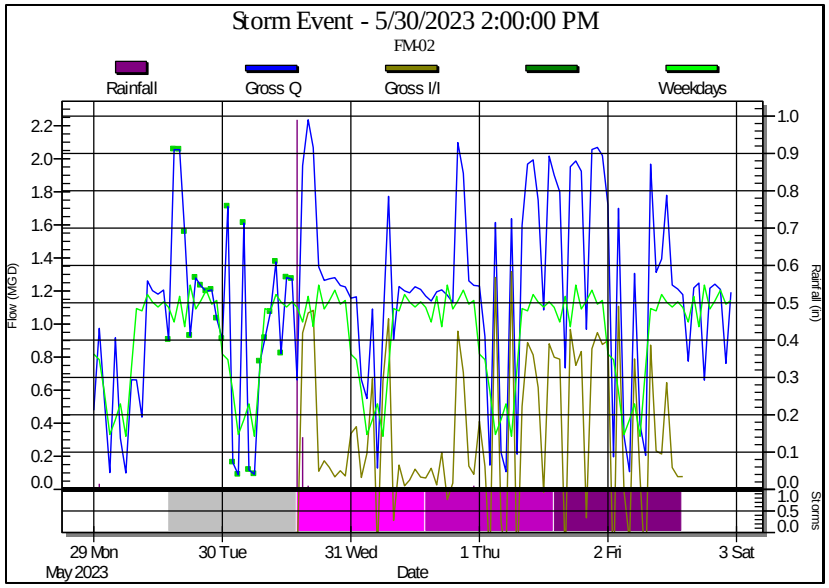

Scatter Graph
FM-02
VFINAL (ft/s)
Iso Q (MGD)
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
5
10
15
20
25
DFINAL (in)

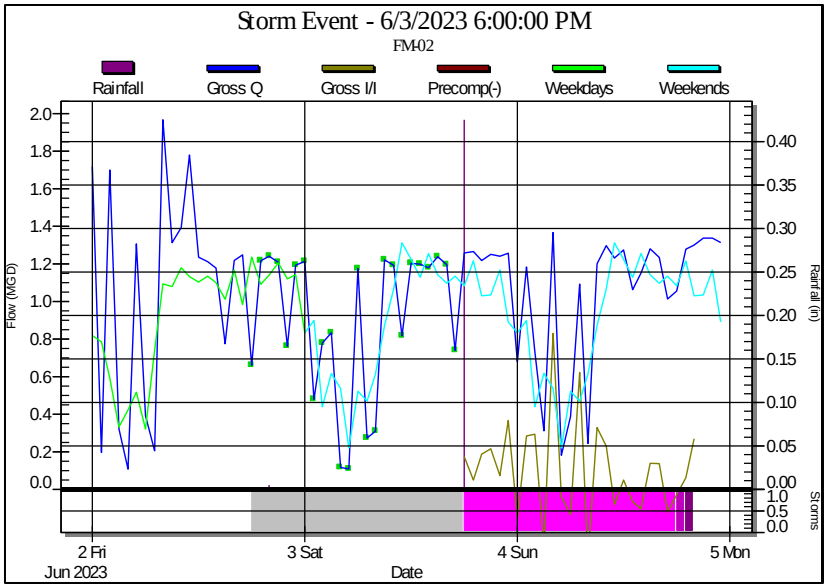

Storm Event - 4/26/2023 4:00:00 AM
FM-02
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
25 Tue
Apr 2023
26 Wed
27 Thu
28 Fri
29 Sat
30 Sun
Date

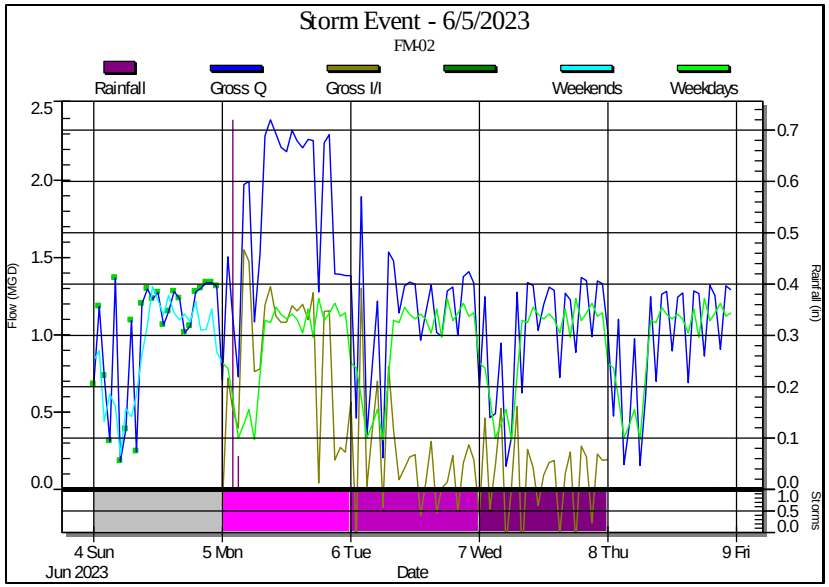

Storm Event - 5/8/2023 10:00:00 AM
FM-02
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
7 Sun
May 2023
8 Mon
9 Tue
10 Wed
11 Thu
12 Fri
Date

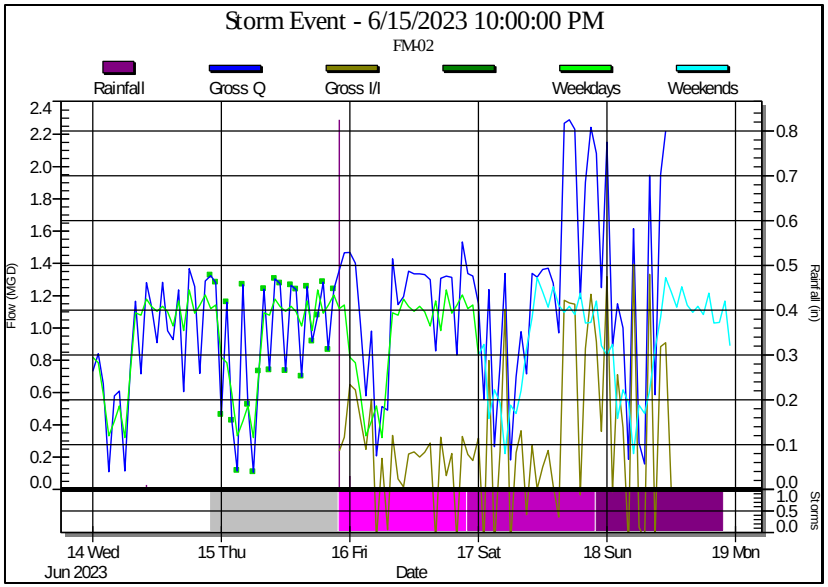

Storm Event - 5/15/2023 9:00:00 PM
FM-02
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
14 Sun
May 2023
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Date

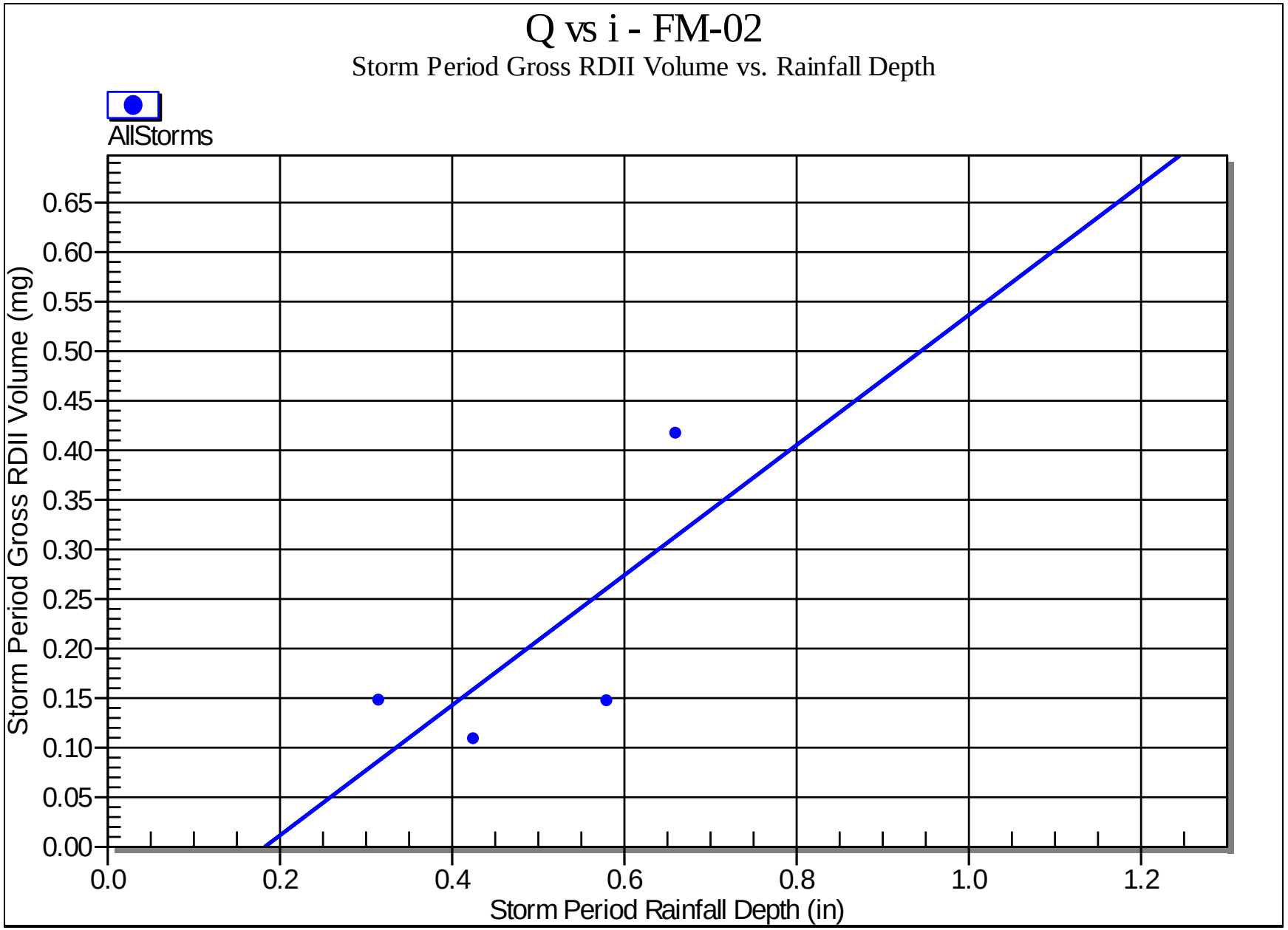

Storm Event - 5/19/2023 2:00:00 PM
FM-02
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
18 Thu
May 2023
19 Fri
20 Sat
21 Sun
22 Mon
23 Tue
Date

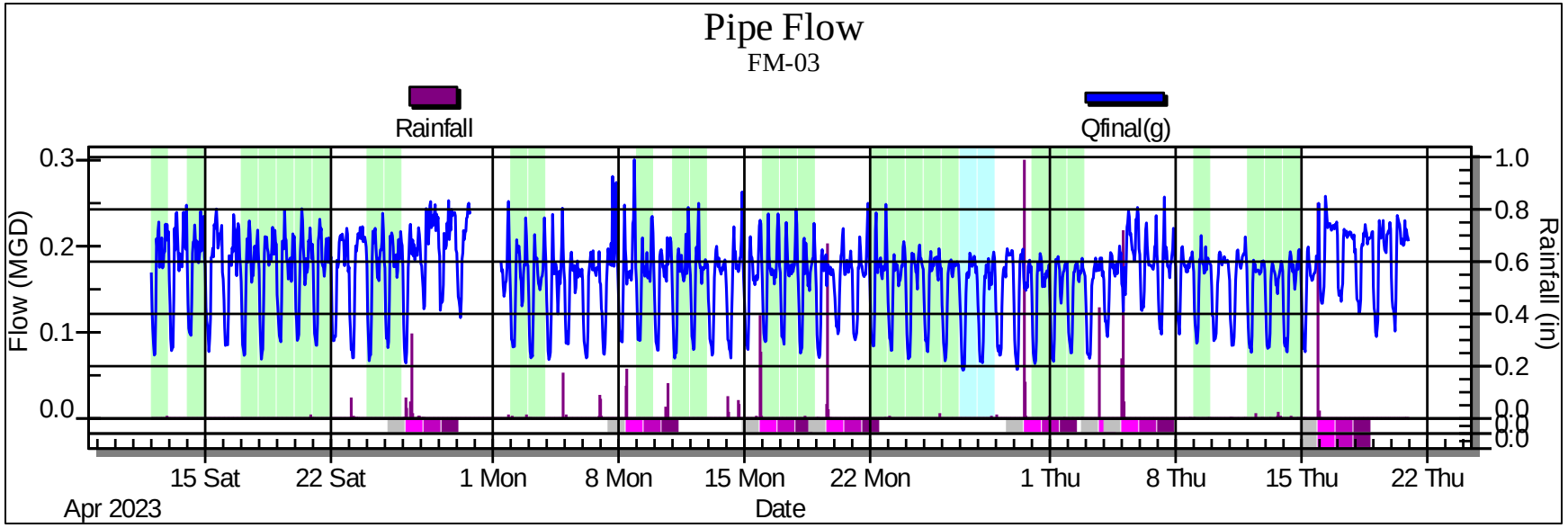

Storm Event - 5/30/2023 2:00:00 PM
FM-02
Rainfall
Gross Q
Gross I/I
Weekdays
Flow (MGD)
Rainfall (in)
Storms
29 Mon
May 2023
30 Tue
31 Wed
1 Thu
2 Fri
3 Sat
Date

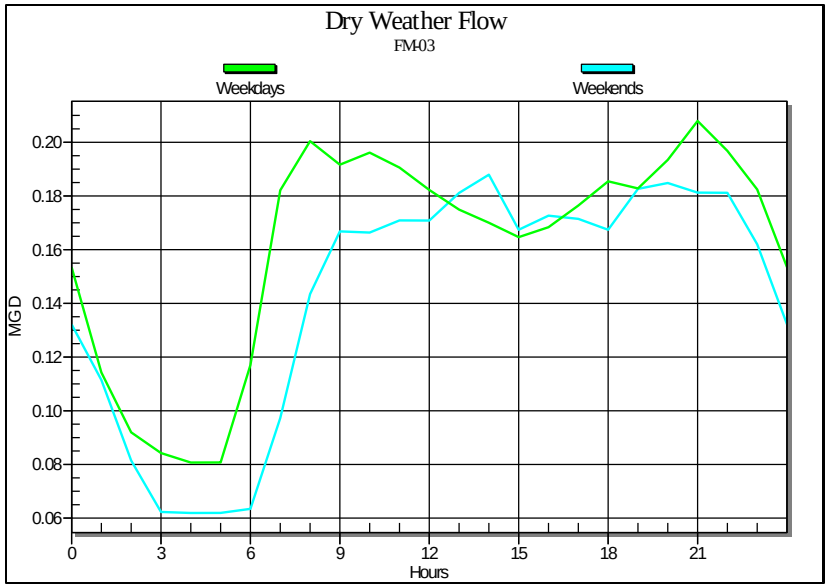

Storm Event - 6/3/2023 6:00:00 PM
FM-02
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
2 Fri
Jun 2023
3 Sat
4 Sun
5 Mon
Date

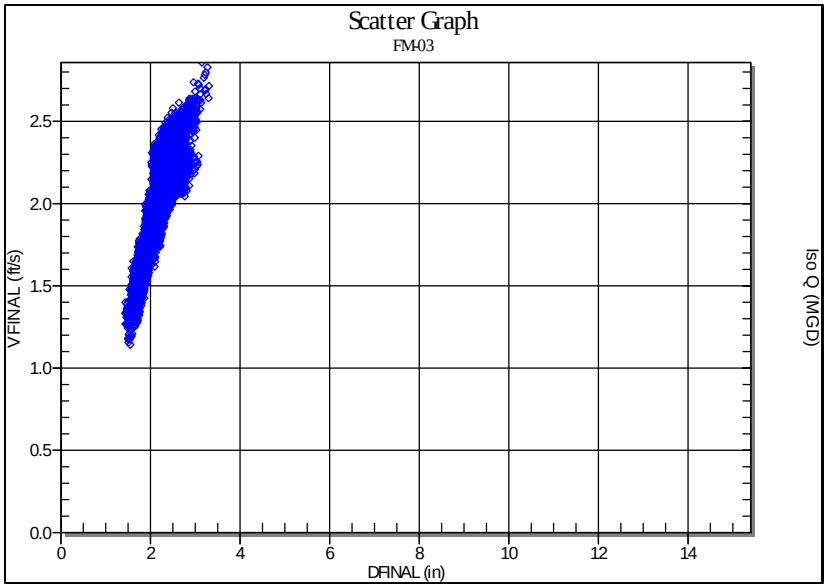

Storm Event - 6/5/2023
FM-02
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
4 Sun
Jun 2023
5 Mon
6 Tue
7 Wed
8 Thu
9 Fri
Date

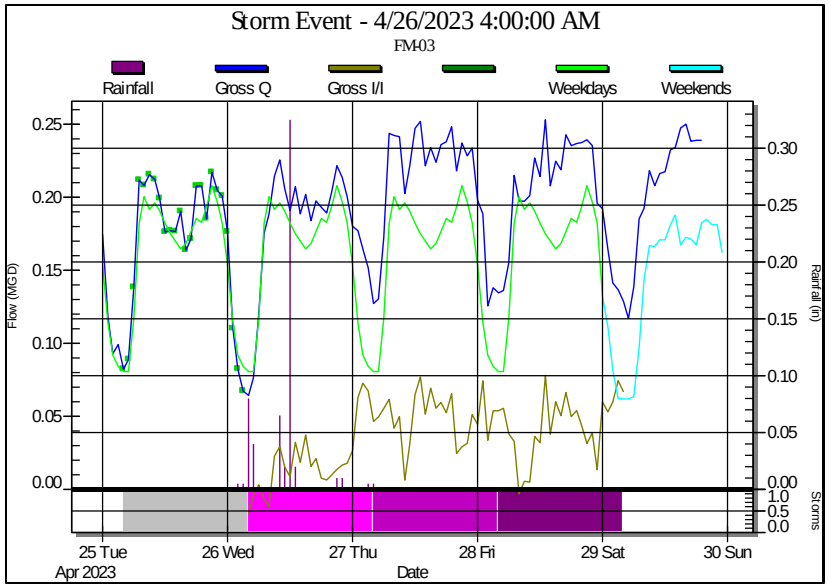

Storm Event - 6/15/2023 10:00:00 PM
FM-02
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
14 Wed
Jun 2023
15 Thu
16 Fri
17 Sat
18 Sun
19 Mon
Date

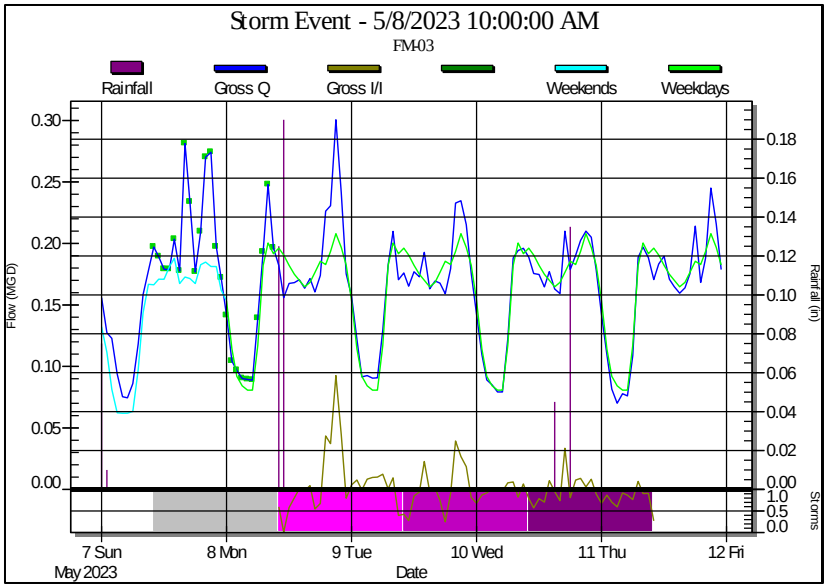

Q vs i - FM-02
Storm Period Gross RDII Volume vs. Rainfall Depth
AllStorms
Storm Period Gross RDII Volume (mg)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
0.50
0.55
0.60
0.65
0.0
0.2
0.4
0.6
0.8
1.0
1.2
Storm Period Rainfall Depth (in)

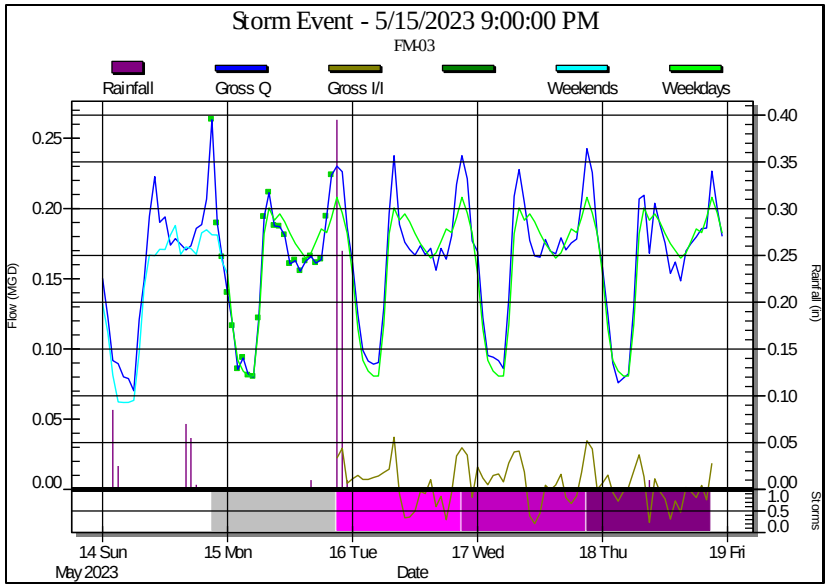

Pipe Flow
FM-03
Rainfall
Qfinal(g)
Flow (MGD)
Rainfall (in)
0.3
0.2
0.1
0.0
1.0
0.8
0.6
0.4
0.2
0.0
15 Sat
22 Sat
1 Mon
8 Mon
15 Mon
22 Mon
1 Thu
8 Thu
15 Thu
22 Thu
Apr 2023
Date

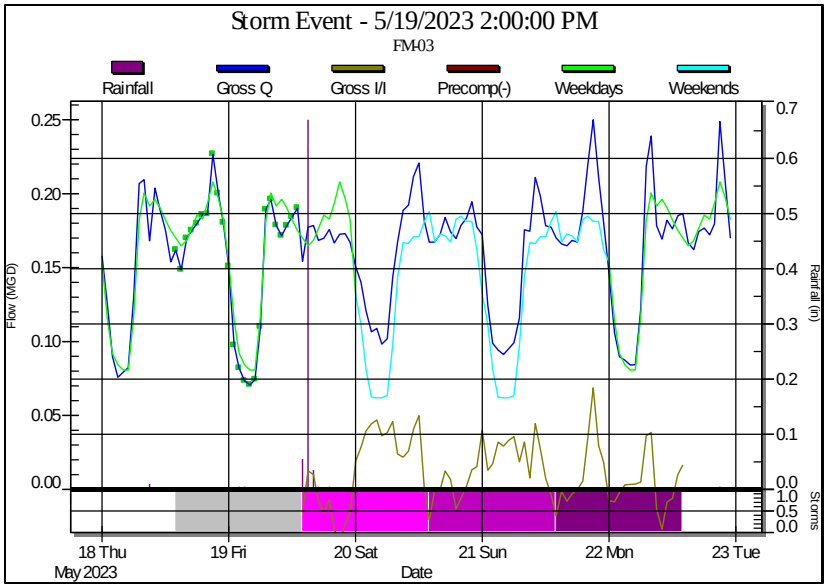

Dry Weather Flow
FM-03
Weekdays
Weekends
MGD
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0
3
6
9
12
15
18
21
Hours

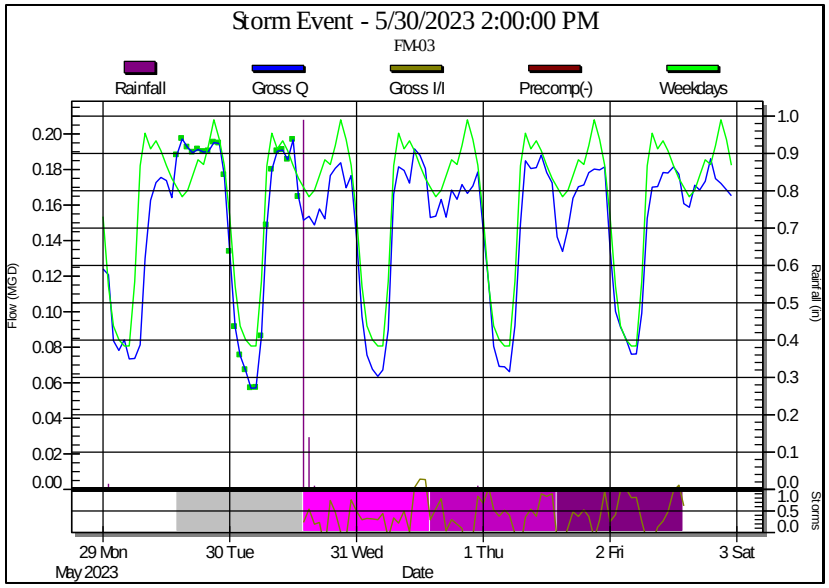

Scatter Graph
FM-03
VFINAL (ft/s)
Iso Q (MGD)
2.5
2.0
1.5
1.0
0.5
0.0
0
2
4
6
8
10
12
14
DFINAL (in)

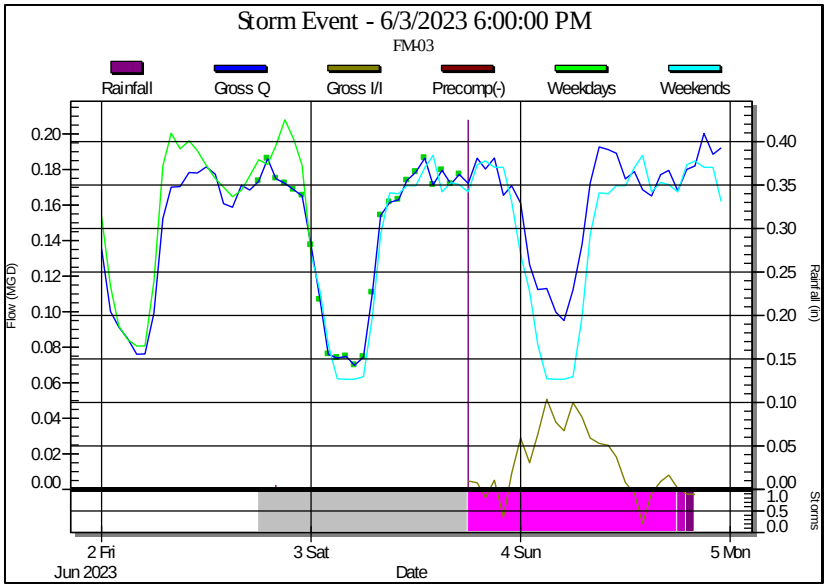

Storm Event - 4/26/2023 4:00:00 AM
FM-03
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
25 Tue
26 Wed
27 Thu
28 Fri
29 Sat
30 Sun
Apr 2023
Date

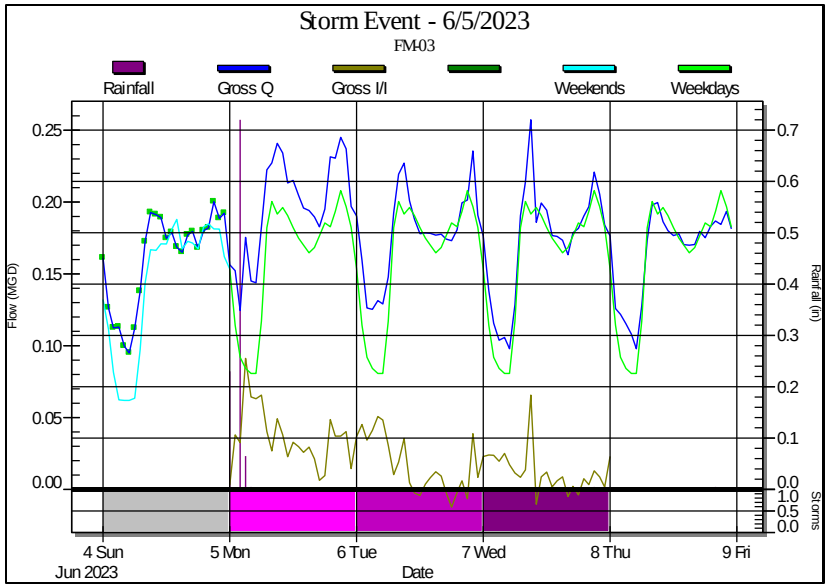

Storm Event - 5/8/2023 10:00:00 AM
FM-03
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
7 Sun
8 Mon
9 Tue
10 Wed
11 Thu
12 Fri
May 2023
Date

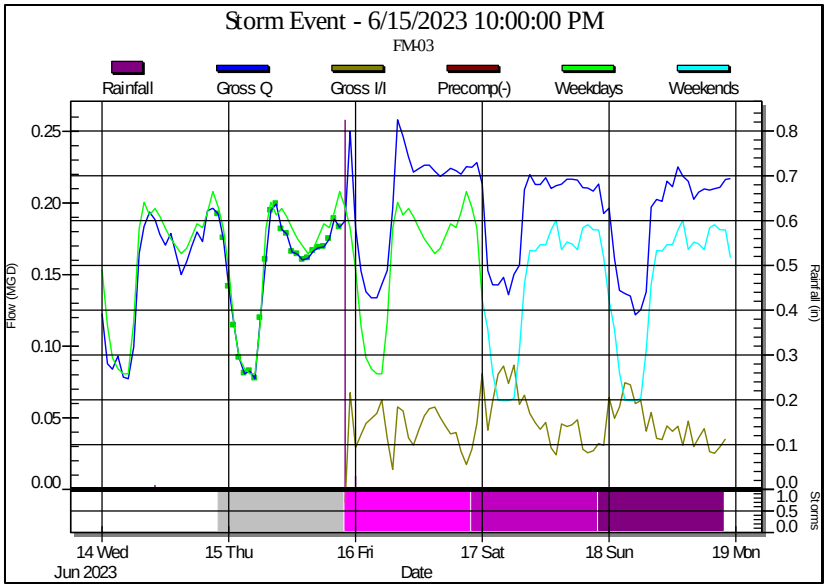

Storm Event - 5/15/2023 9:00:00 PM
FM-03
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
May 2023
Date

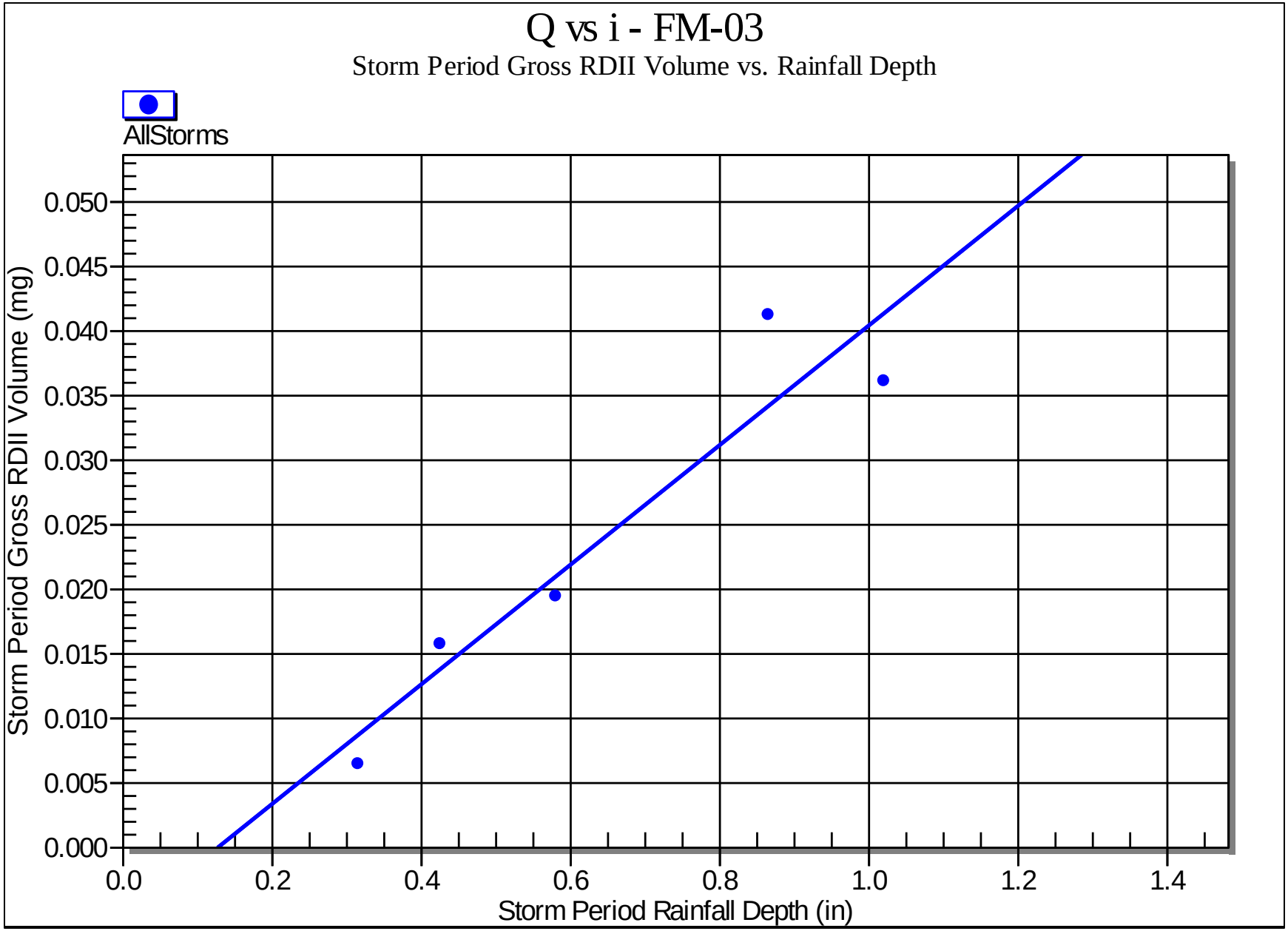

Storm Event - 5/19/2023 2:00:00 PM
FM-03
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
18 Thu
19 Fri
20 Sat
21 Sun
22 Mon
23 Tue
May 2023
Date

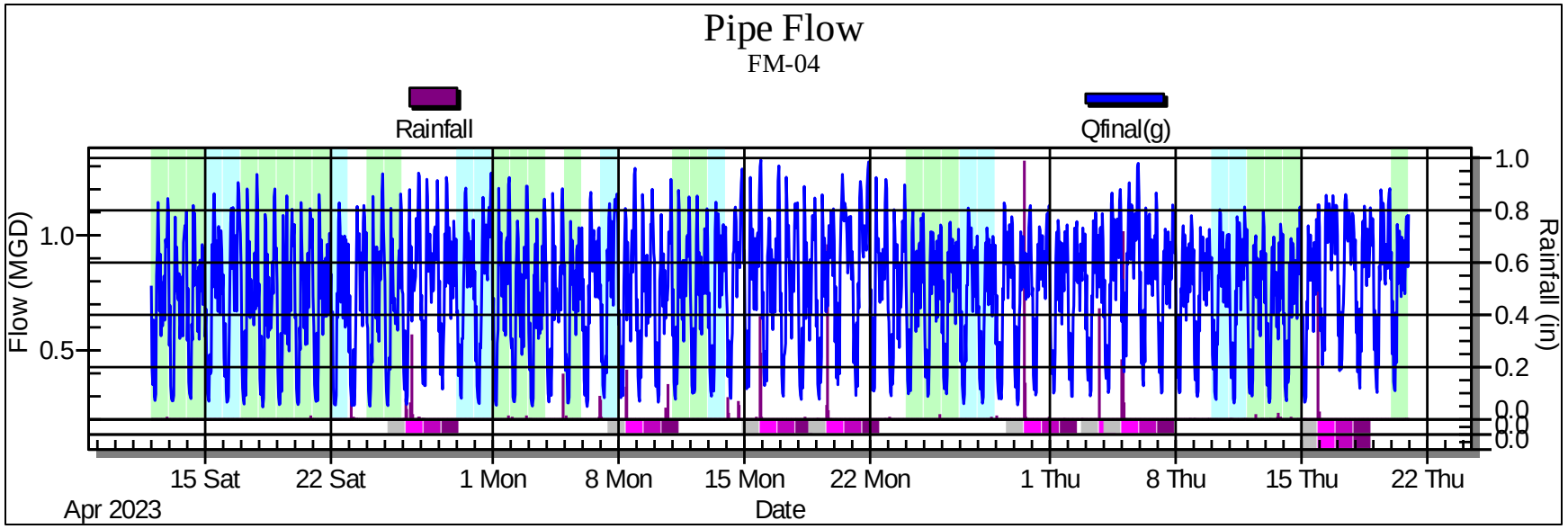

Storm Event - 5/30/2023 2:00:00 PM
FM-03
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekdays
Flow (MGD)
Rainfall (in)
Storms
29 Mon
May 2023
30 Tue
31 Wed
1 Thu
2 Fri
3 Sat
Date

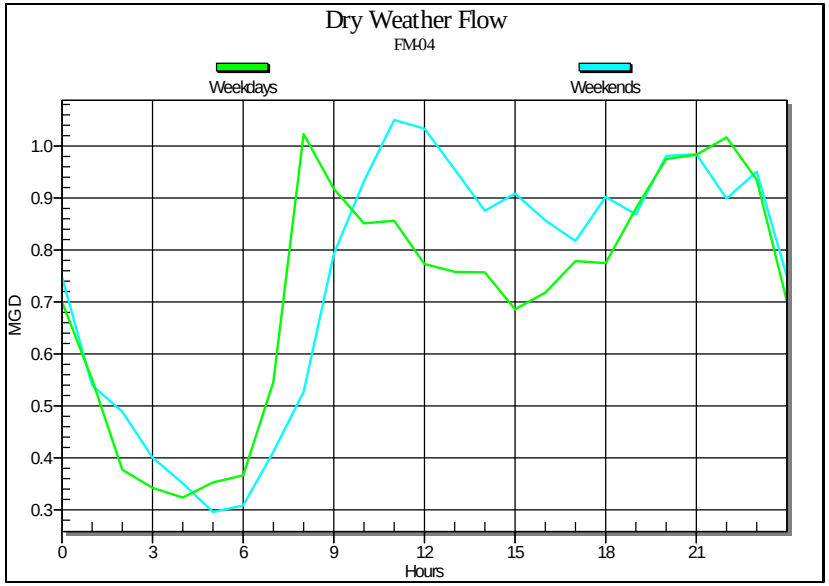

Storm Event - 6/3/2023 6:00:00 PM
FM-03
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
2 Fri
Jun 2023
3 Sat
4 Sun
5 Mon
Date

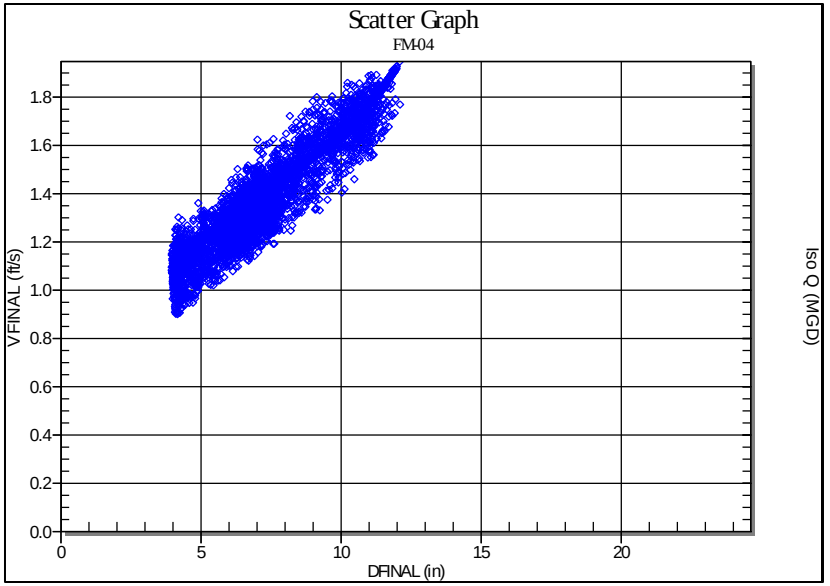

Storm Event - 6/5/2023
FM-03
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
4 Sun
Jun 2023
5 Mon
6 Tue
7 Wed
8 Thu
9 Fri
Date

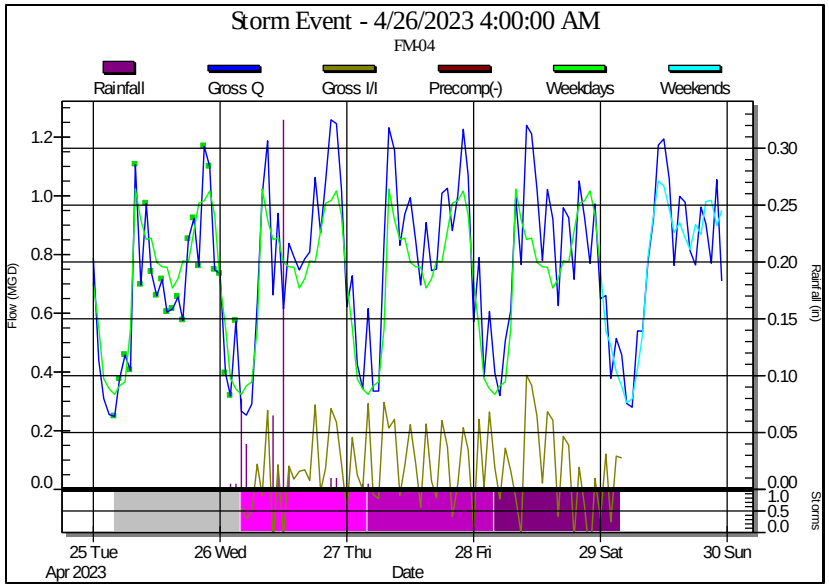

Storm Event - 6/15/2023 10:00:00 PM
FM-03
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
14 Wed
Jun 2023
15 Thu
16 Fri
17 Sat
18 Sun
19 Mon
Date

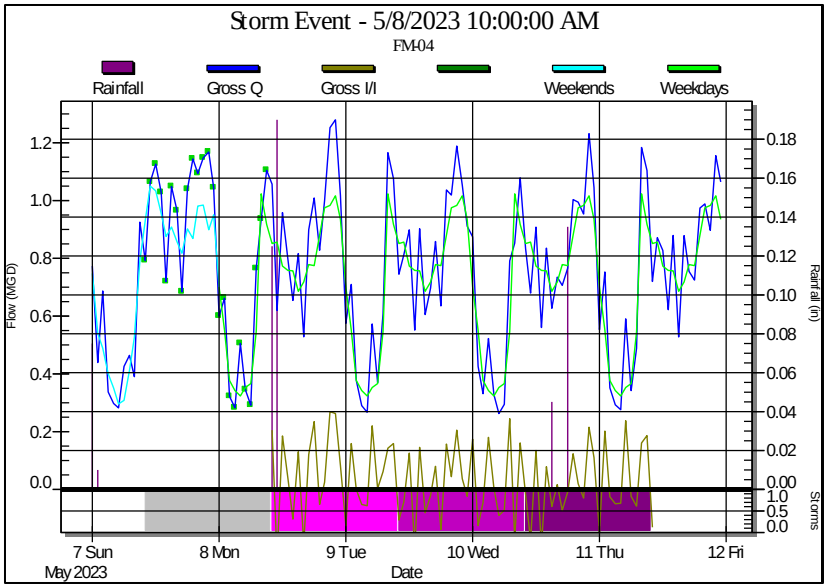

Q vs i - FM-03
Storm Period Gross RDII Volume vs. Rainfall Depth
AllStorms
Storm Period Gross RDII Volume (mg)
0.050
0.045
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
Storm Period Rainfall Depth (in)

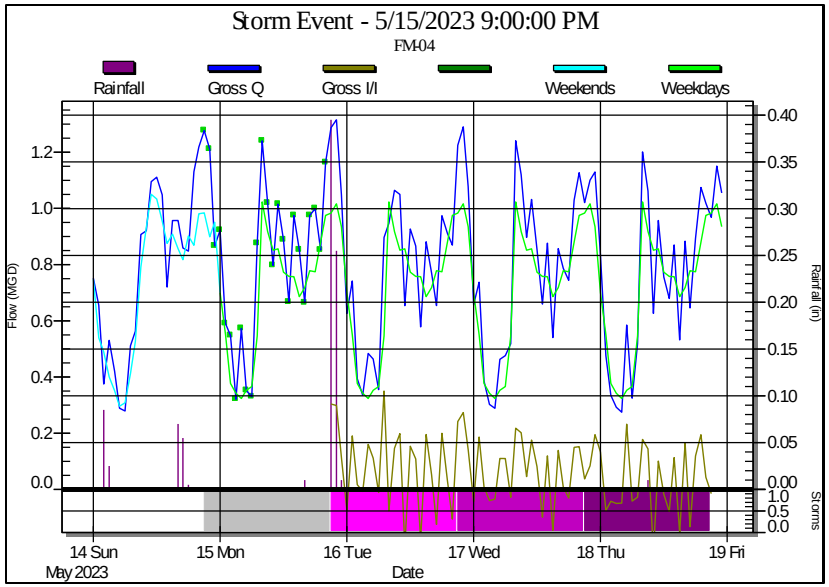

Pipe Flow
FM-04
Rainfall
Qfinal(g)
Flow (MGD)
1.0
0.5
Rainfall (in)
1.0
0.8
0.6
0.4
0.2
0.0
15 Sat
22 Sat
1 Mon
8 Mon
15 Mon
22 Mon
1 Thu
8 Thu
15 Thu
22 Thu
Apr 2023
Date

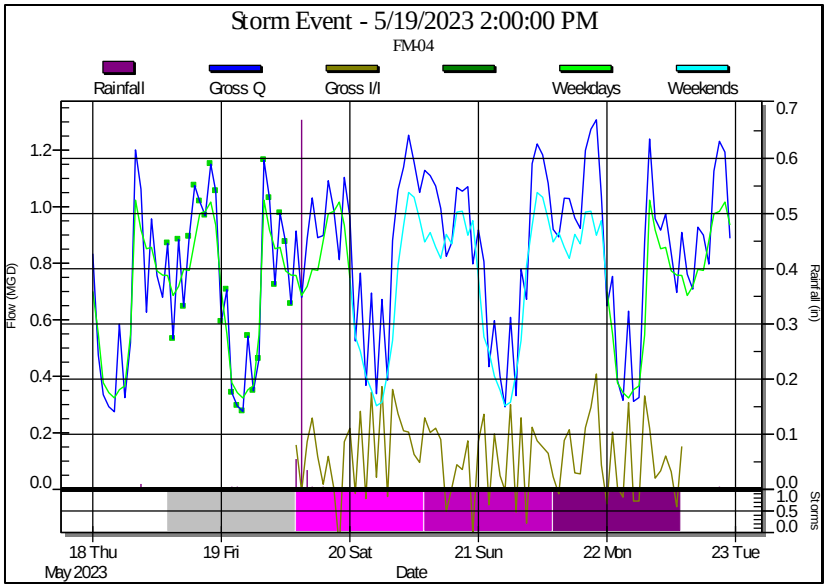

Dry Weather Flow
FM-04
Weekdays
Weekends
MGD
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0
3
6
9
12
15
18
21
Hours

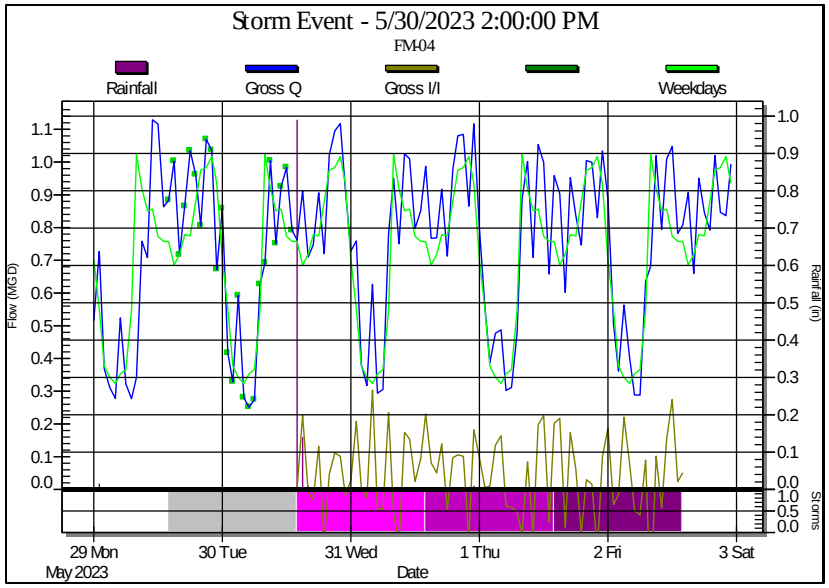

Scatter Graph
FM-04
VFINAL (ft/s)
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
5
10
15
20
DFINAL (in)
Iso Q (MGD)

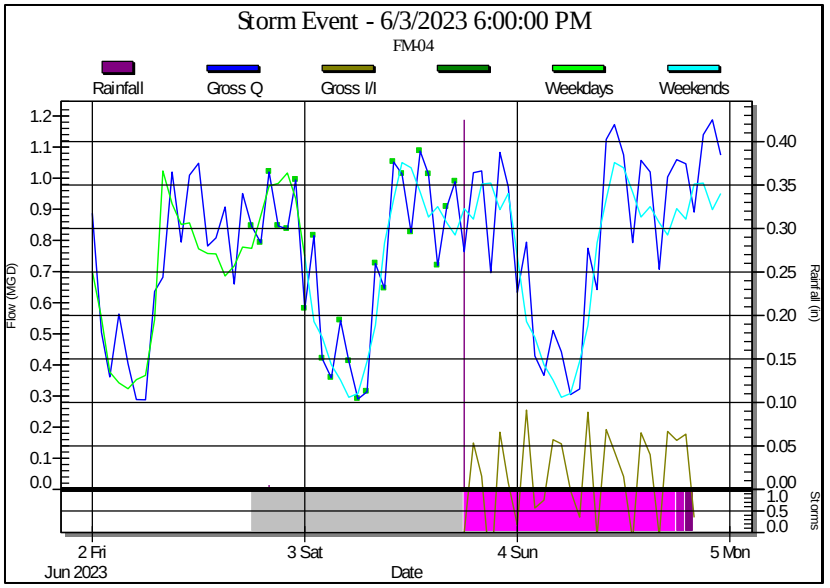

Storm Event - 4/26/2023 4:00:00 AM
FM-04
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
25 Tue
Apr 2023
26 Wed
27 Thu
28 Fri
29 Sat
30 Sun
Date

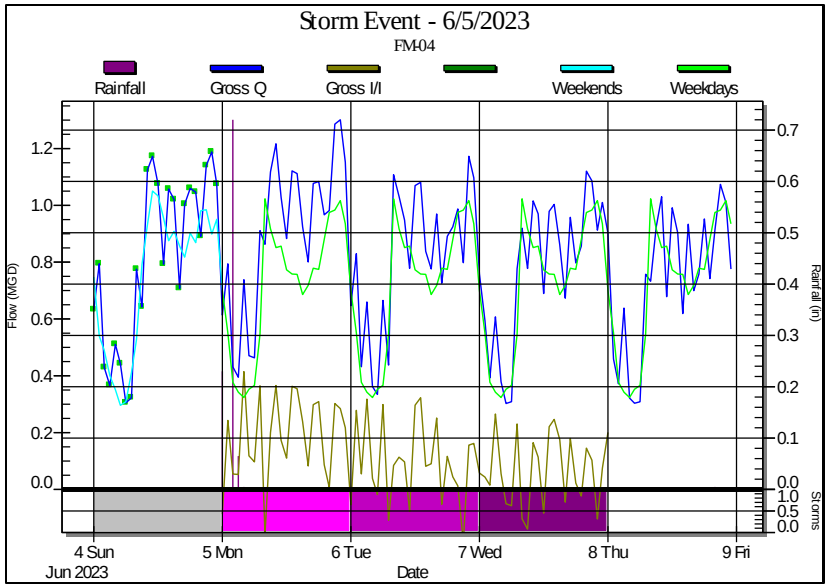

Storm Event - 5/8/2023 10:00:00 AM
FM-04
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
7 Sun
May 2023
8 Mon
9 Tue
10 Wed
11 Thu
12 Fri
Date

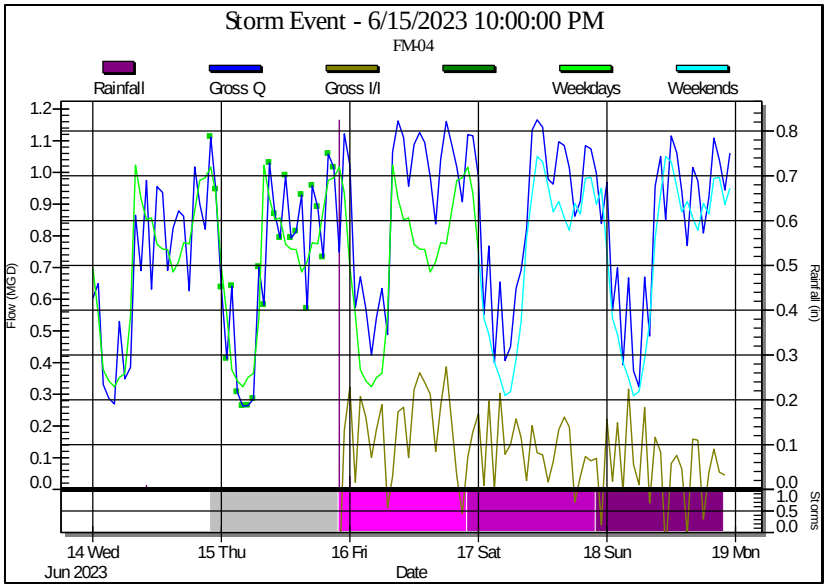

Storm Event - 5/15/2023 9:00:00 PM
FM-04
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
14 Sun
May 2023
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Date

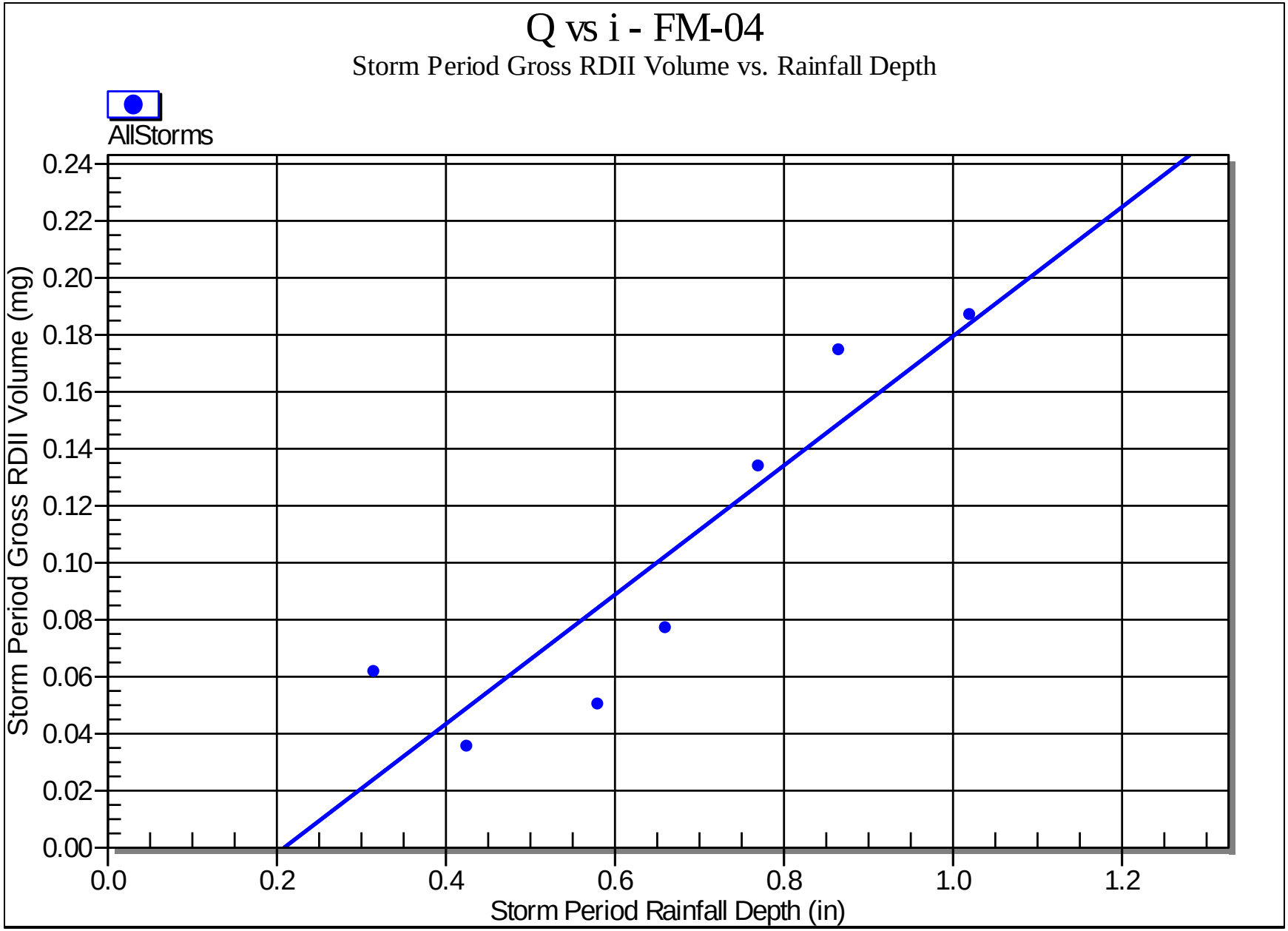

Storm Event - 5/19/2023 2:00:00 PM
FM-04
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
18 Thu
May 2023
19 Fri
20 Sat
21 Sun
22 Mon
23 Tue
Date

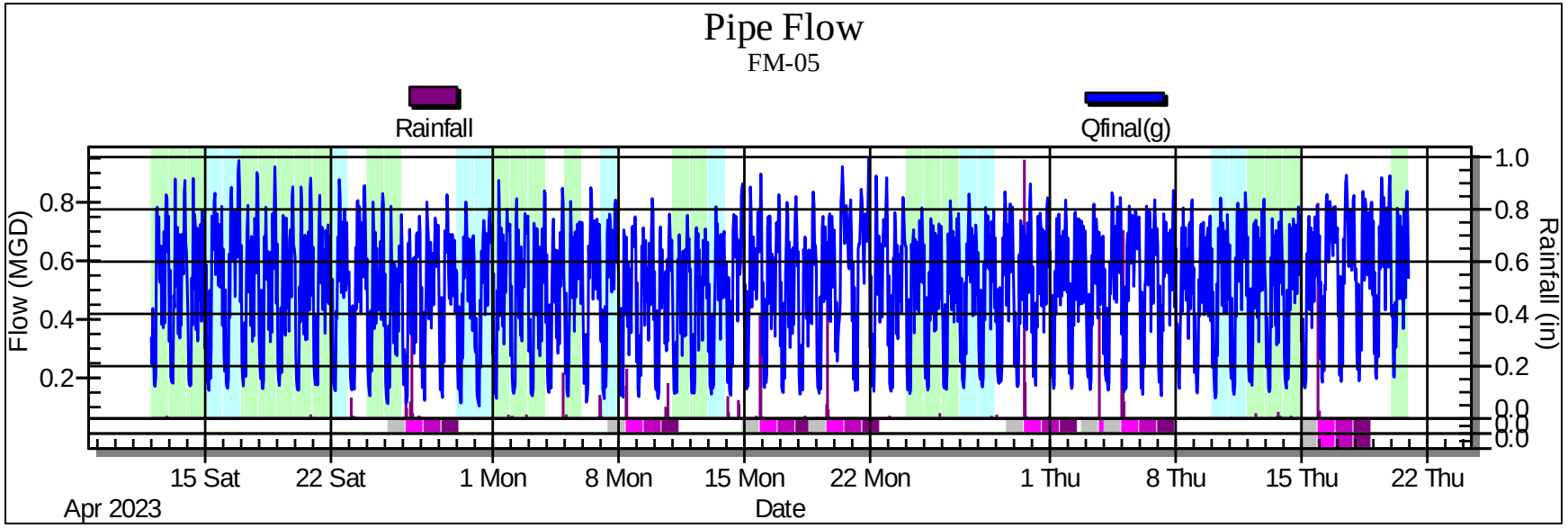

Storm Event - 5/30/2023 2:00:00 PM
FM-04
Rainfall
Gross Q
Gross I/I
Weekdays
Flow (MGD)
Rainfall (in)
Storms
29 Mon
May 2023
30 Tue
31 Wed
1 Thu
2 Fri
3 Sat
Date

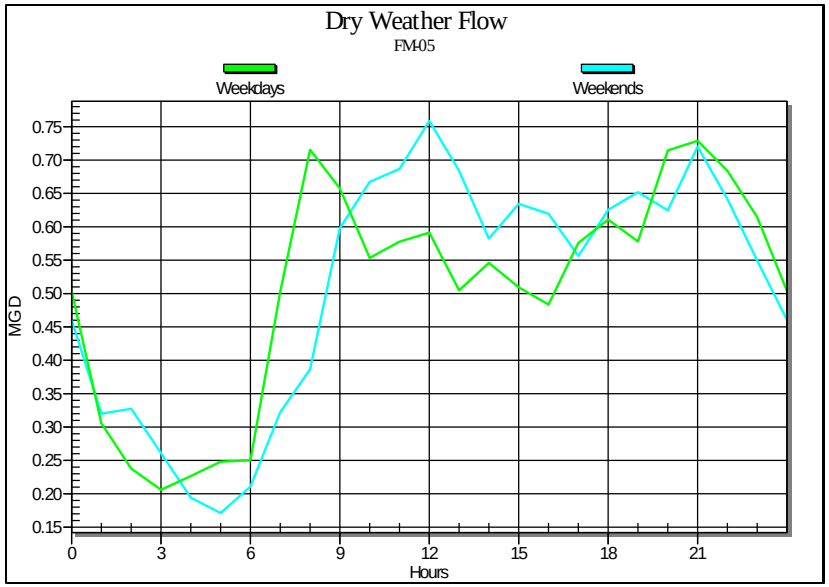

Storm Event - 6/3/2023 6:00:00 PM
FM-04
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
2 Fri
Jun 2023
3 Sat
4 Sun
5 Mon
Date

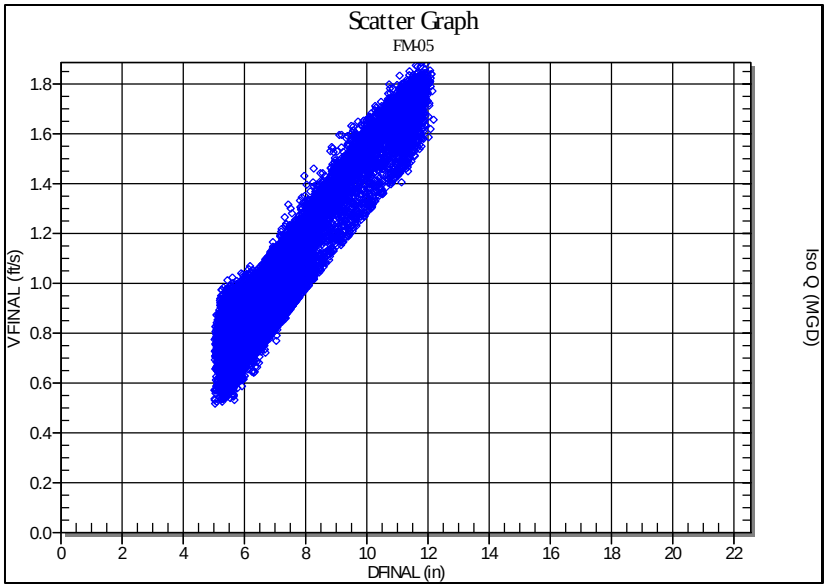

Storm Event - 6/5/2023
FM-04
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
4 Sun
Jun 2023
5 Mon
6 Tue
7 Wed
8 Thu
9 Fri
Date

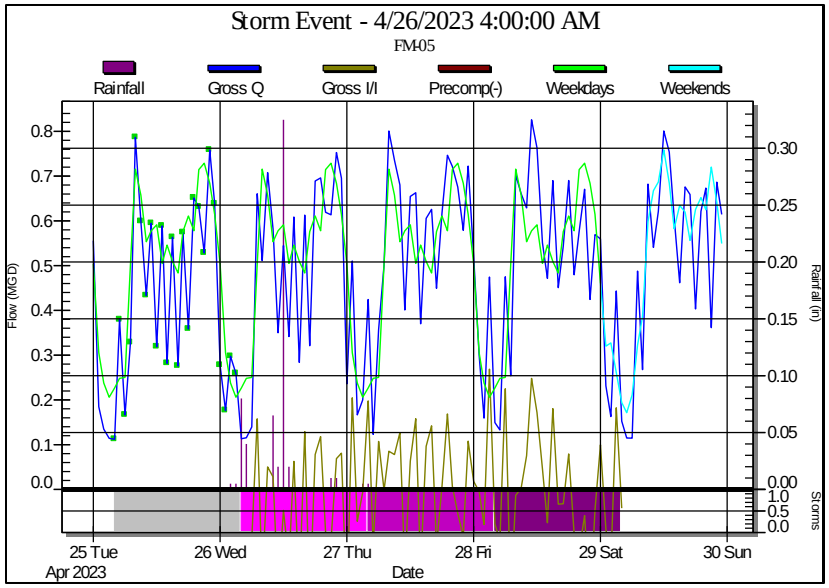

Storm Event - 6/15/2023 10:00:00 PM
FM-04
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
14 Wed
Jun 2023
15 Thu
16 Fri
17 Sat
18 Sun
19 Mon
Date

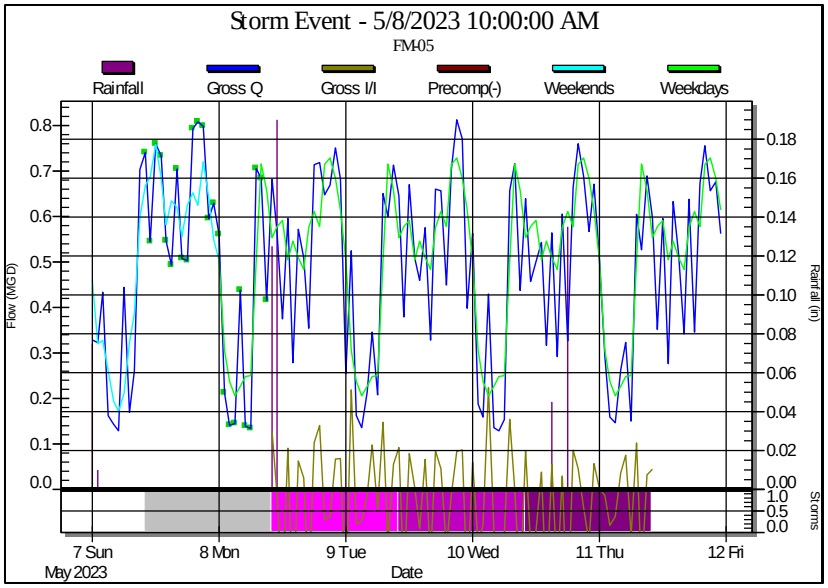

Q vs i - FM-04
Storm Period Gross RDII Volume vs. Rainfall Depth
AllStorms
Storm Period Gross RDII Volume (mg)
0.24
0.22
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
0.0
0.2
0.4
0.6
0.8
1.0
1.2
Storm Period Rainfall Depth (in)

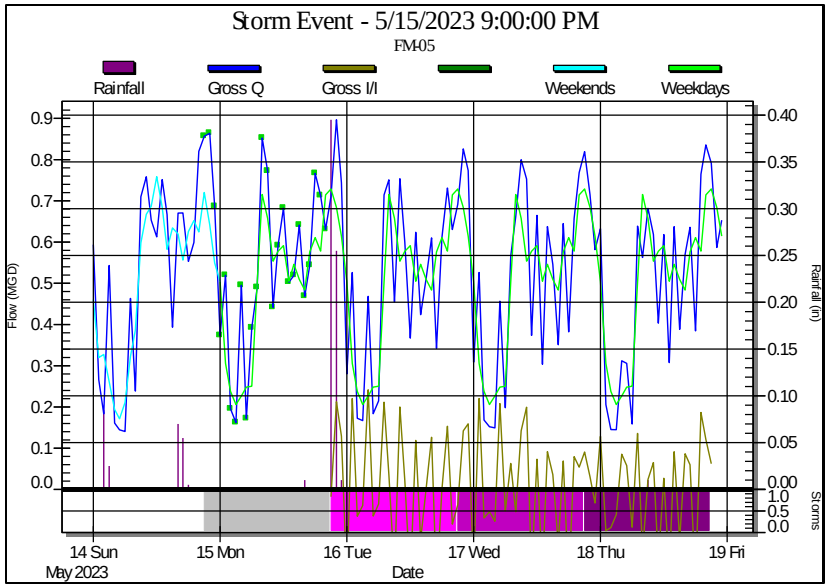

Pipe Flow
FM-05
Rainfall
Qfinal(g)
Flow (MGD)
Rainfall (in)
0.8
0.6
0.4
0.2
1.0
0.0
15 Sat
22 Sat
1 Mon
8 Mon
15 Mon
22 Mon
1 Thu
8 Thu
15 Thu
22 Thu
Apr 2023
Date

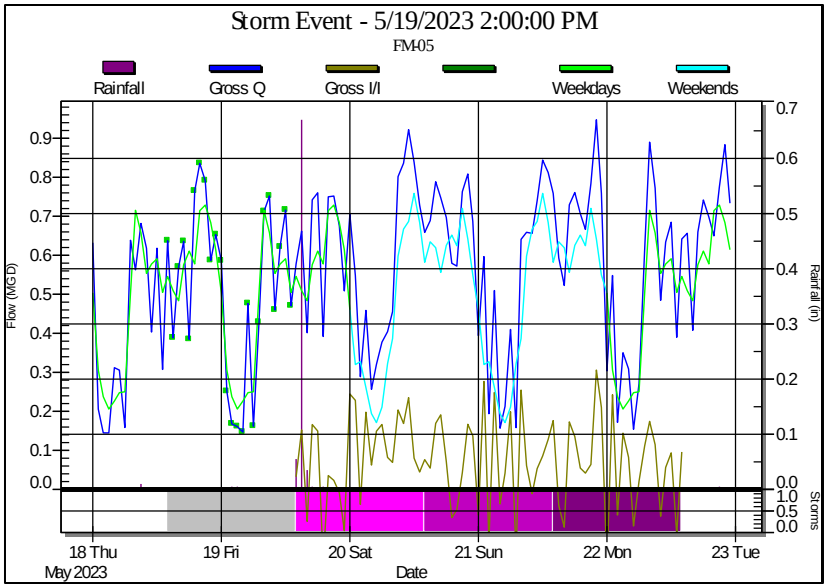

Dry Weather Flow
FM-05
Weekdays
Weekends
MGD
Hours
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0
3
6
9
12
15
18
21

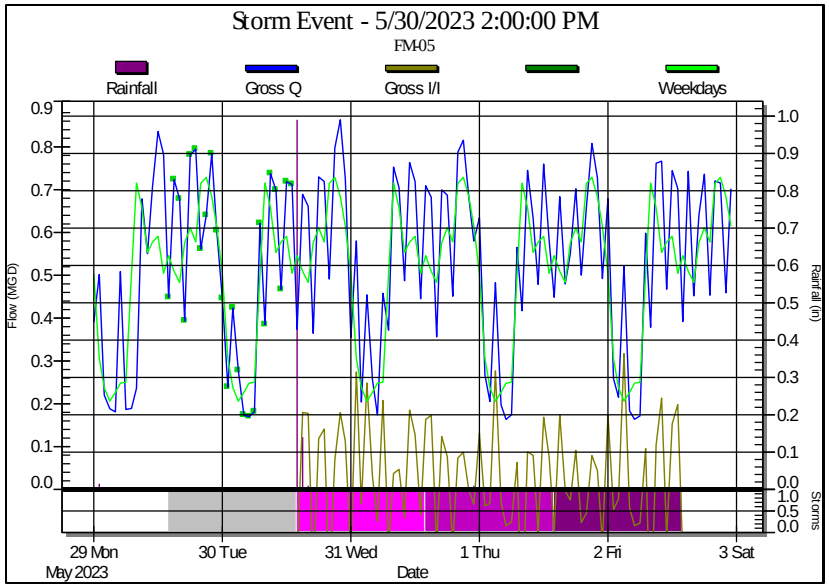

Scatter Graph
FM-05
VFINAL (ft/s)
DFINAL (in)
Iso Q (MGD)
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
2
4
6
8
10
12
14
16
18
20
22

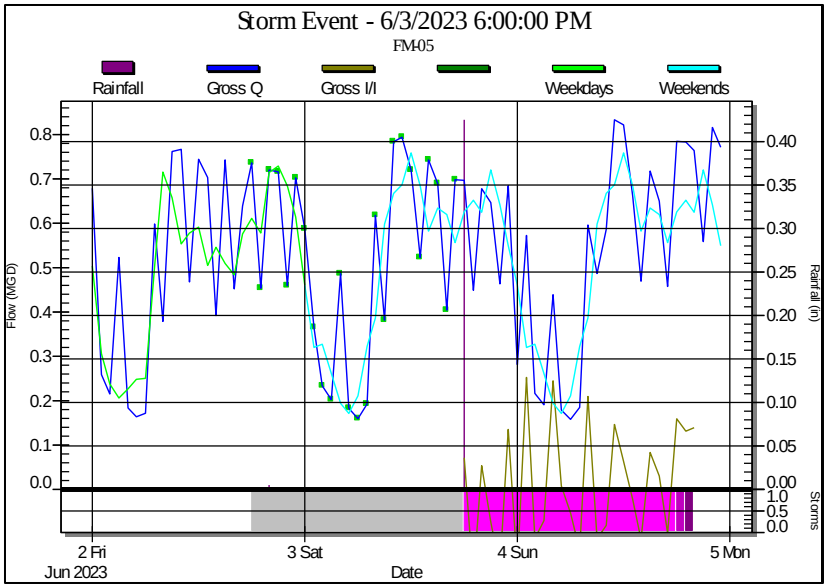

Storm Event - 4/26/2023 4:00:00 AM
FM-05
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
25 Tue
Apr 2023
26 Wed
27 Thu
28 Fri
29 Sat
30 Sun
Date

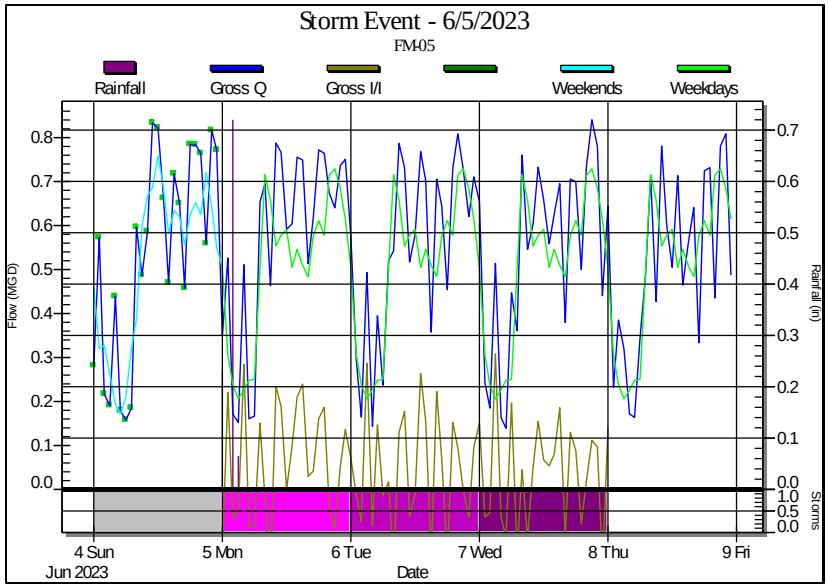

Storm Event - 5/8/2023 10:00:00 AM
FM-05
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
7 Sun
May 2023
8 Mon
9 Tue
10 Wed
11 Thu
12 Fri
Date

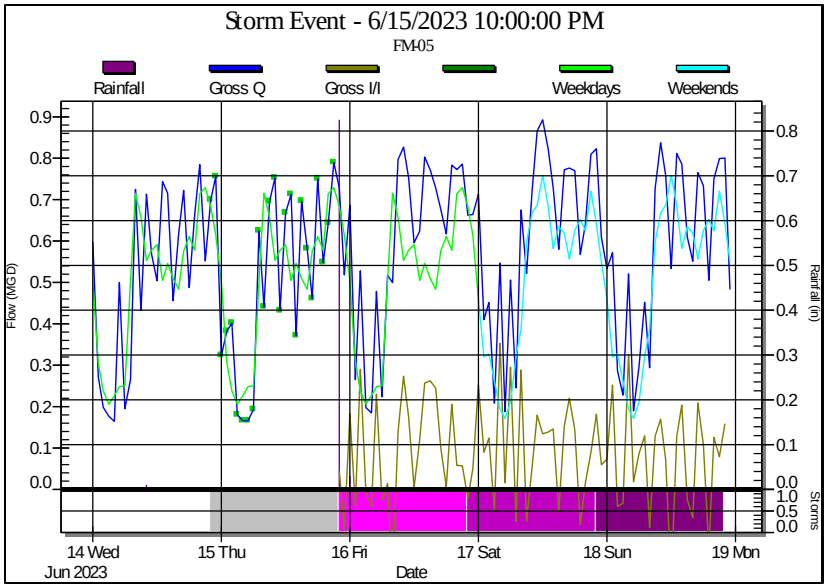

Storm Event - 5/15/2023 9:00:00 PM
FM-05
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
14 Sun
May 2023
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Date

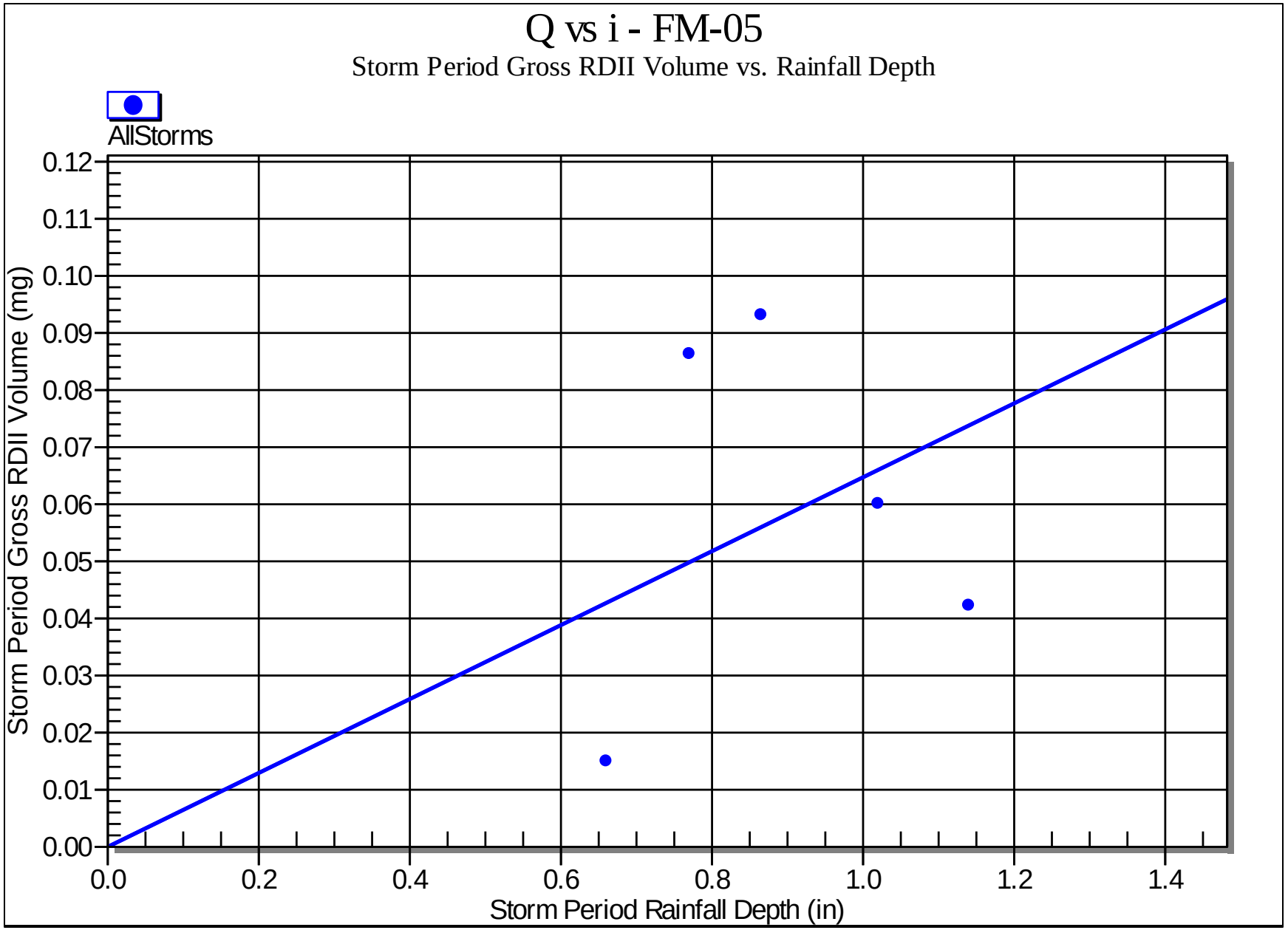

Storm Event - 5/19/2023 2:00:00 PM
FM-05
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
18 Thu
May 2023
19 Fri
20 Sat
21 Sun
22 Mon
23 Tue
Date

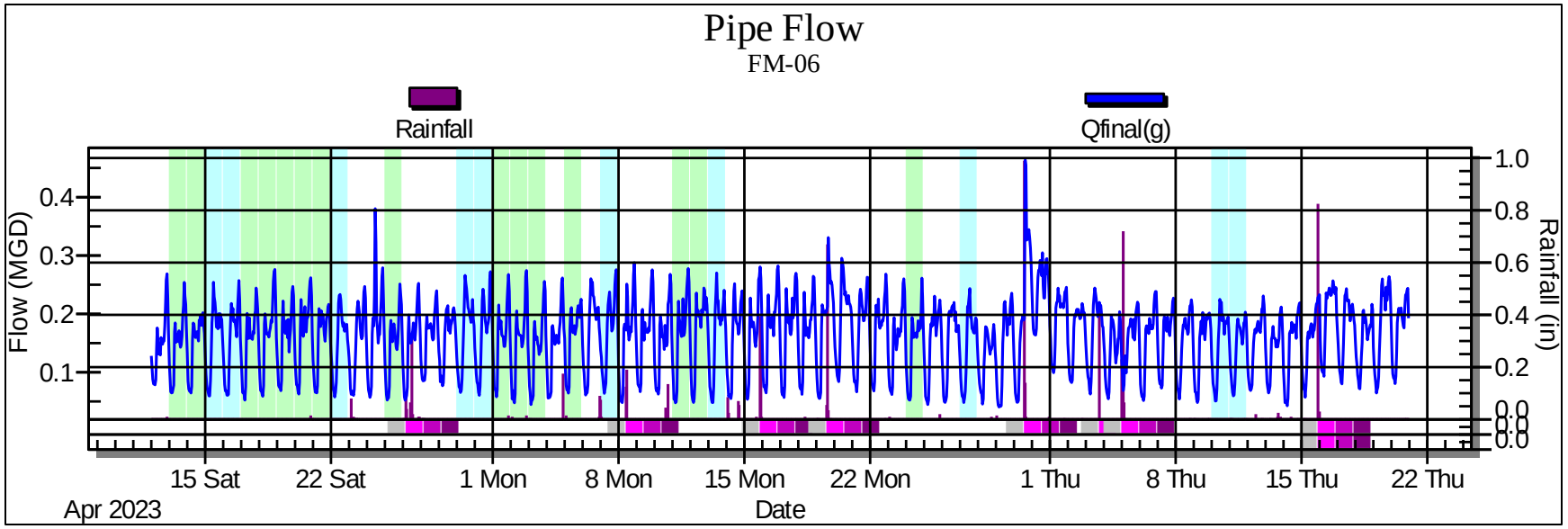

Storm Event - 5/30/2023 2:00:00 PM
FM-05
Rainfall
Gross Q
Gross I/I
Weekdays
Flow (MGD)
Rainfall (in)
Storms
29 Mon
May 2023
30 Tue
31 Wed
1 Thu
2 Fri
3 Sat
Date

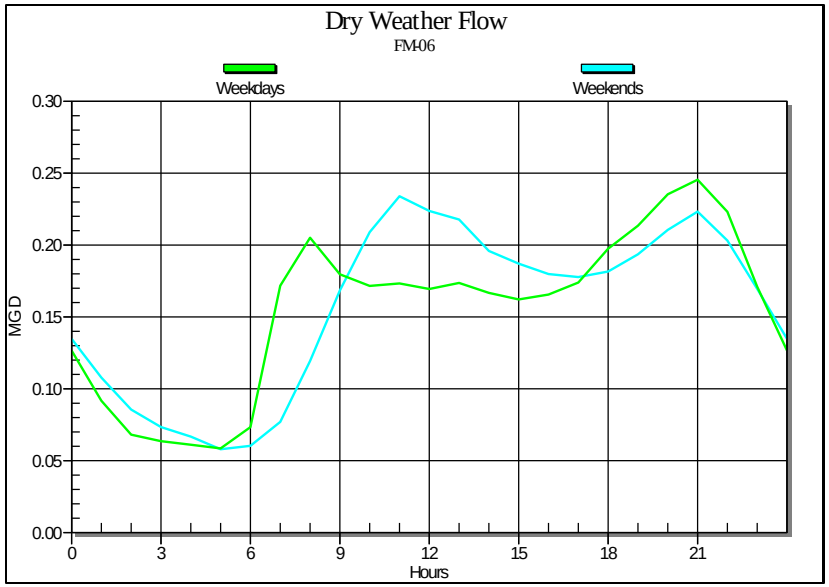

Storm Event - 6/3/2023 6:00:00 PM
FM-05
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
2 Fri
Jun 2023
3 Sat
4 Sun
5 Mon
Date

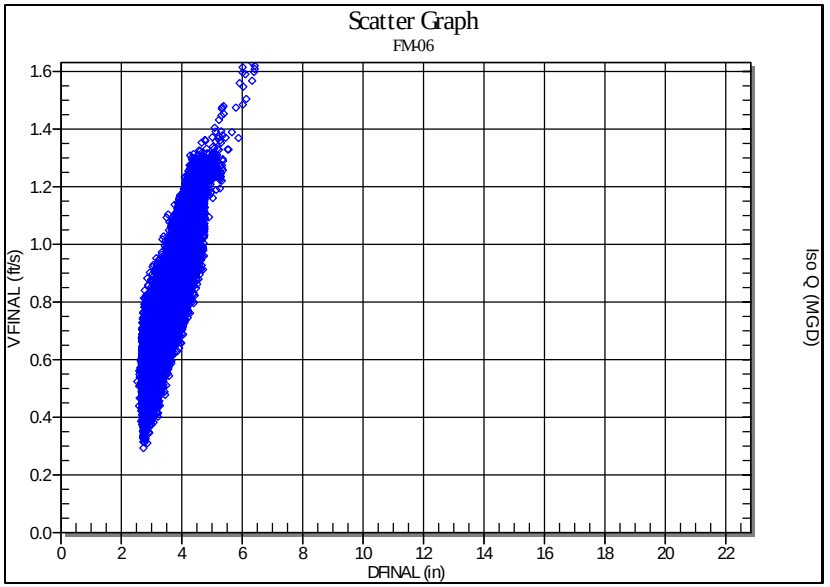

Storm Event - 6/5/2023
FM-05
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
4 Sun
Jun 2023
5 Mon
6 Tue
7 Wed
8 Thu
9 Fri
Date

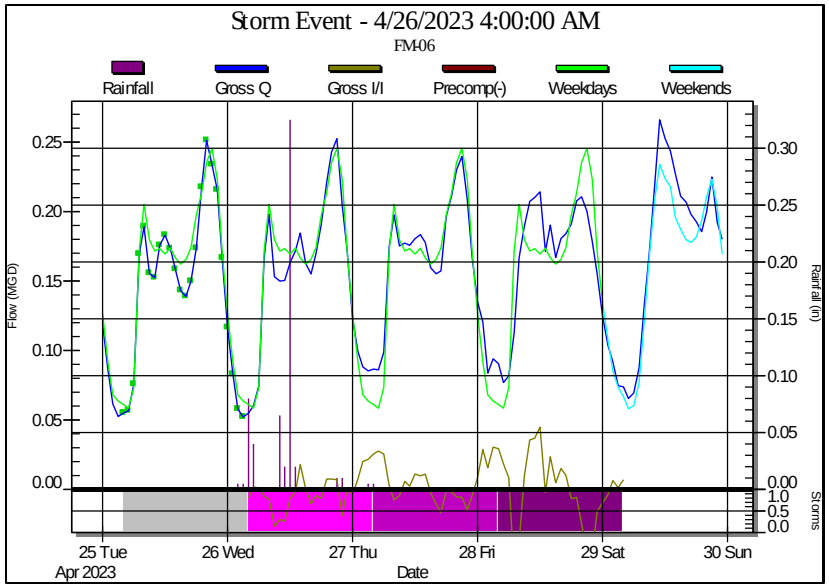

Storm Event - 6/15/2023 10:00:00 PM
FM-05
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
14 Wed
Jun 2023
15 Thu
16 Fri
17 Sat
18 Sun
19 Mon
Date

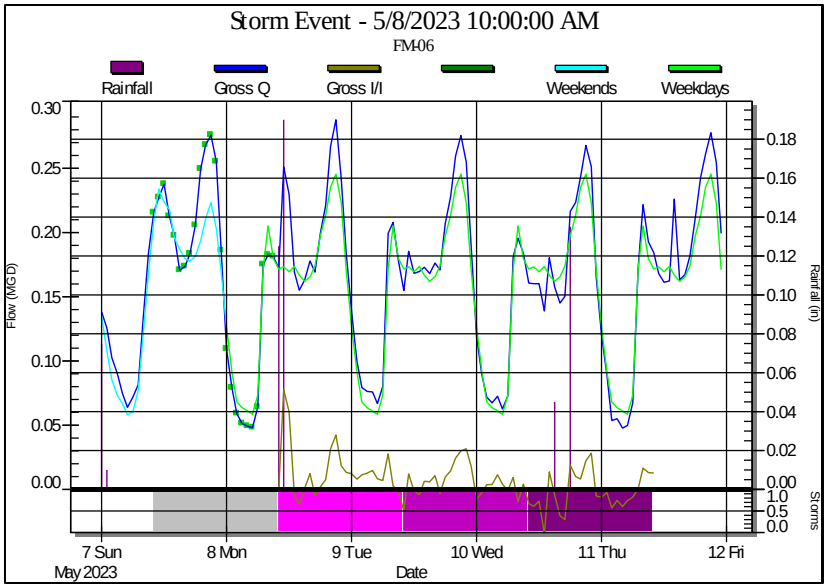

Q vs i - FM-05
Storm Period Gross RDII Volume vs. Rainfall Depth
AllStorms
Storm Period Gross RDII Volume (mg)
0.12
0.11
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
Storm Period Rainfall Depth (in)

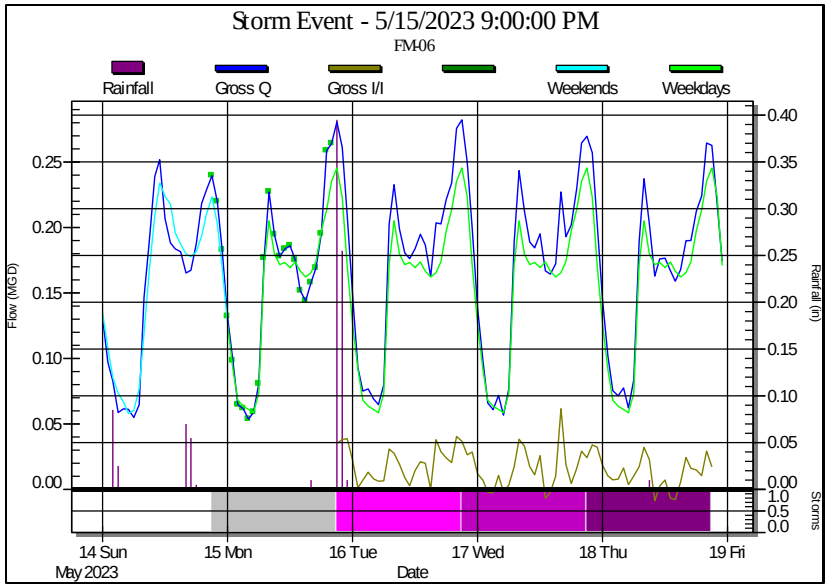

Pipe Flow
FM-06
Rainfall
Qfinal(g)
Flow (MGD)
Rainfall (in)
0.4
0.3
0.2
0.1
1.0
0.8
0.6
0.4
0.2
0.0
15 Sat
22 Sat
1 Mon
8 Mon
15 Mon
22 Mon
1 Thu
8 Thu
15 Thu
22 Thu
Apr 2023
Date

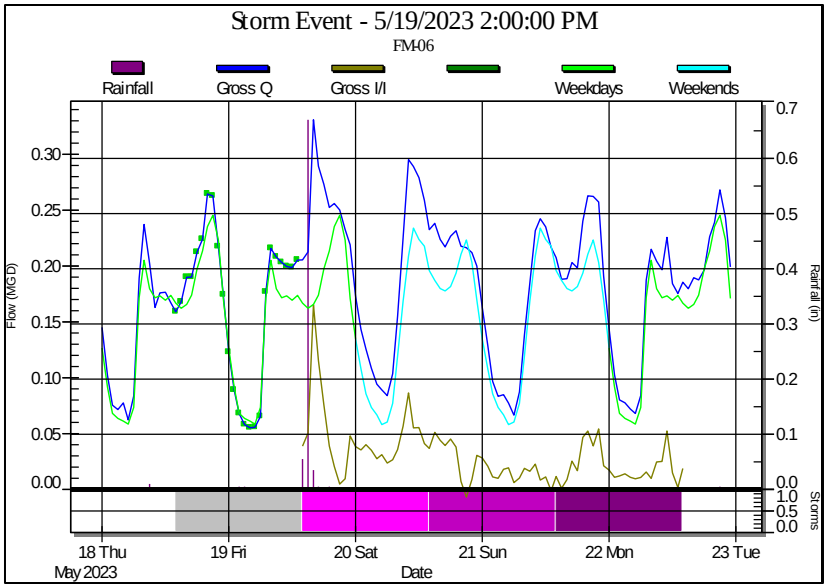

Dry Weather Flow
FM-06
Weekdays
Weekends
MGD
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0
3
6
9
12
15
18
21
Hours

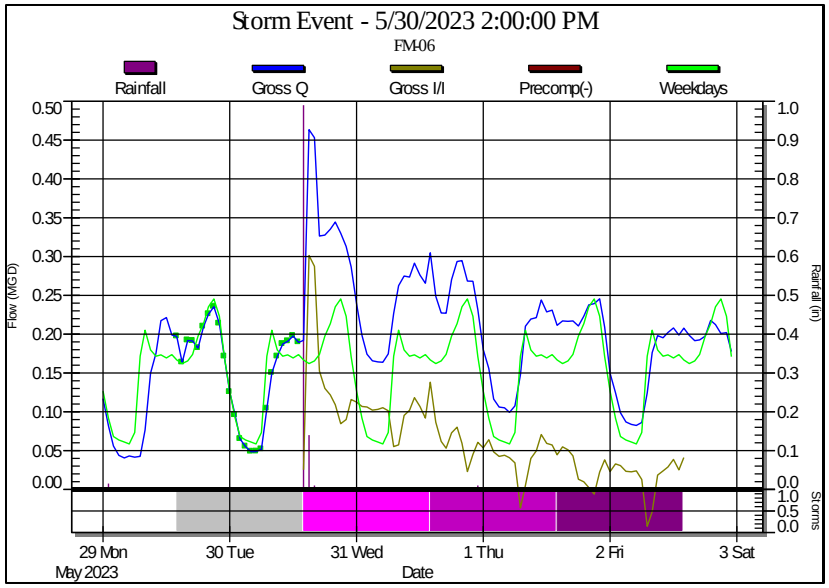

Scatter Graph
FM-06
VFINAL (ft/s)
Iso Q (MGD)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
2
4
6
8
10
12
14
16
18
20
22
DFINAL (in)

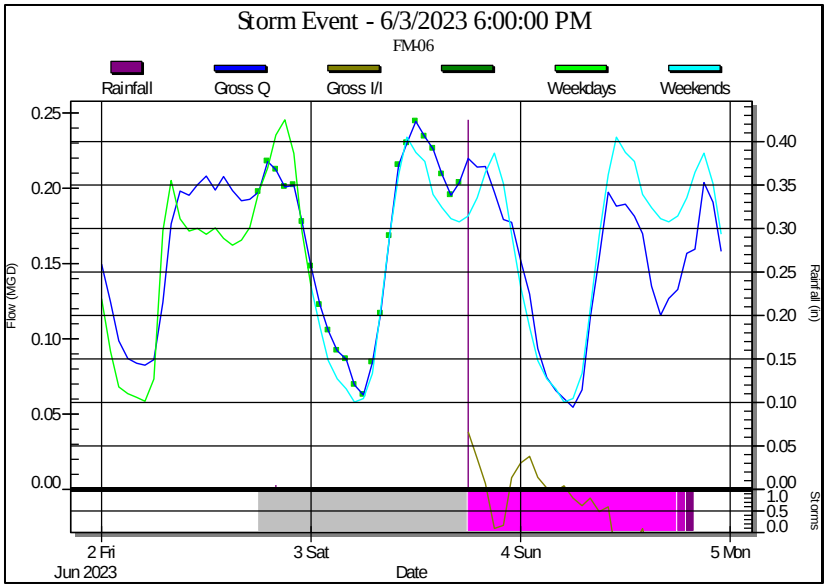

Storm Event - 4/26/2023 4:00:00 AM
FM-06
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
25 Tue
26 Wed
27 Thu
28 Fri
29 Sat
30 Sun
Apr 2023
Date

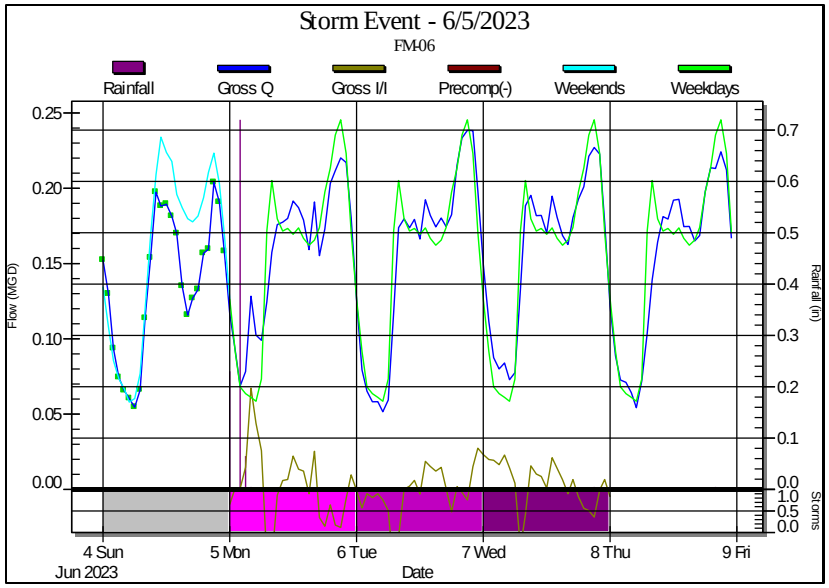

Storm Event - 5/8/2023 10:00:00 AM
FM-06
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
7 Sun
8 Mon
9 Tue
10 Wed
11 Thu
12 Fri
May 2023
Date

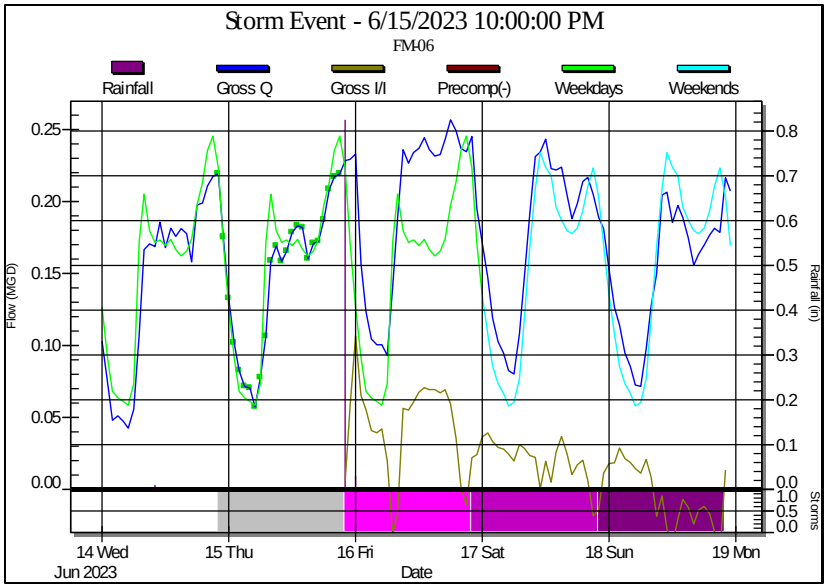

Storm Event - 5/15/2023 9:00:00 PM
FM-06
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
May 2023
Date

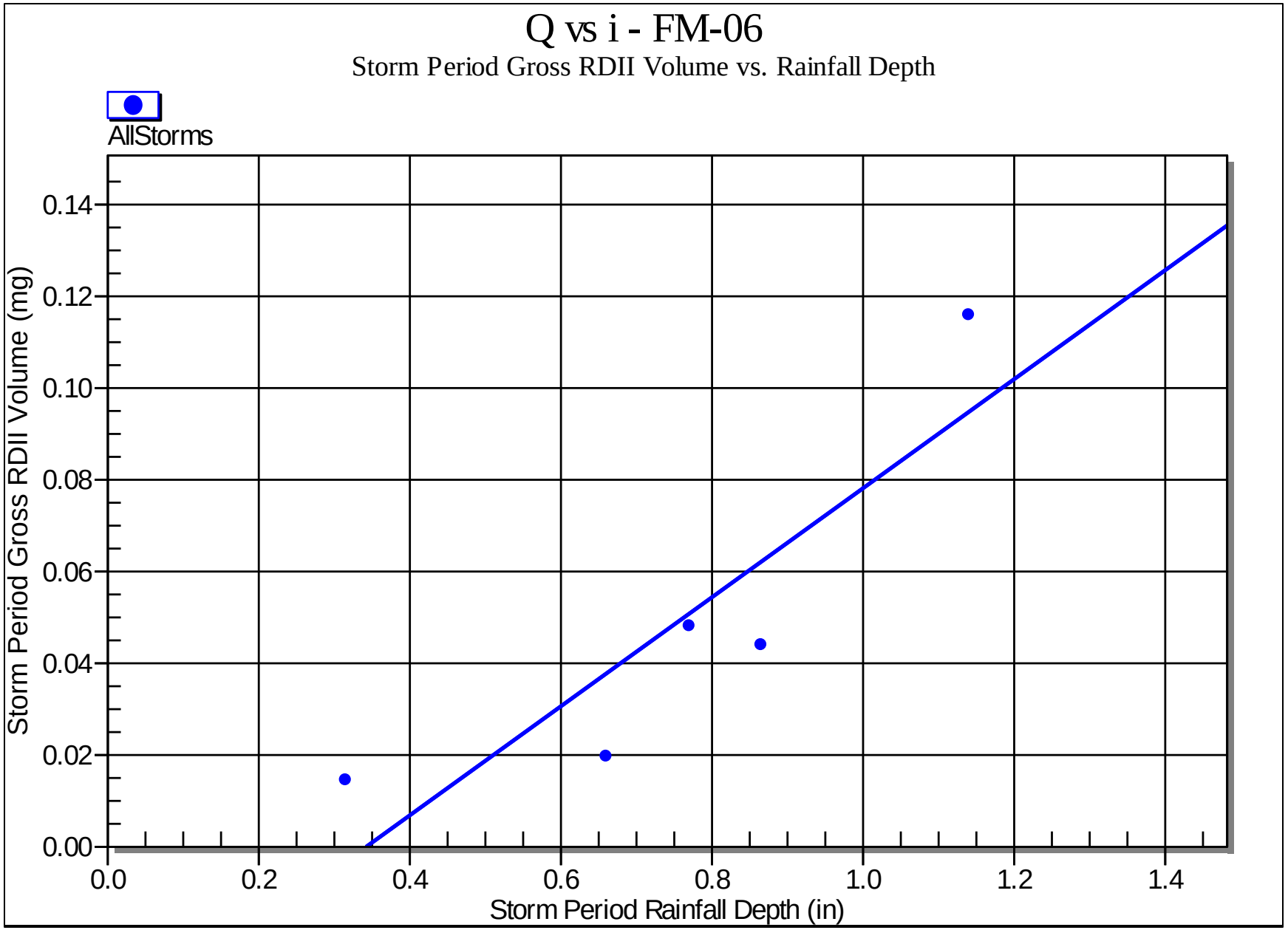

Storm Event - 5/19/2023 2:00:00 PM
FM-06
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
18 Thu
19 Fri
20 Sat
21 Sun
22 Mon
23 Tue
May 2023
Date

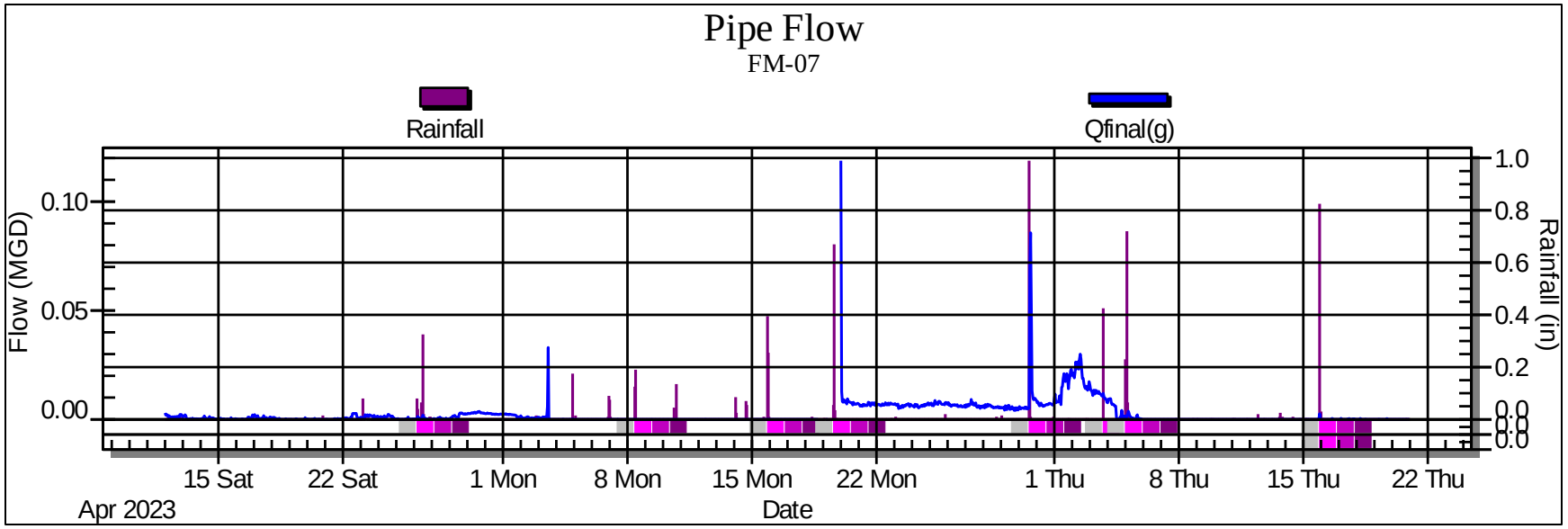

Storm Event - 5/30/2023 2:00:00 PM
FM-06
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekdays
Flow (MGD)
Rainfall (in)
Storms
29 Mon
May 2023
30 Tue
31 Wed
1 Thu
2 Fri
3 Sat
Date

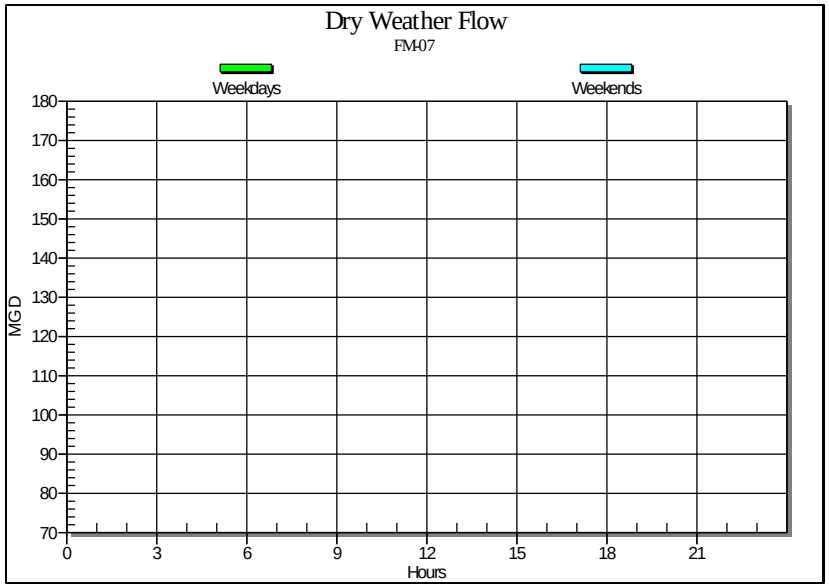

Storm Event - 6/3/2023 6:00:00 PM
FM-06
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
2 Fri
Jun 2023
3 Sat
4 Sun
5 Mon
Date

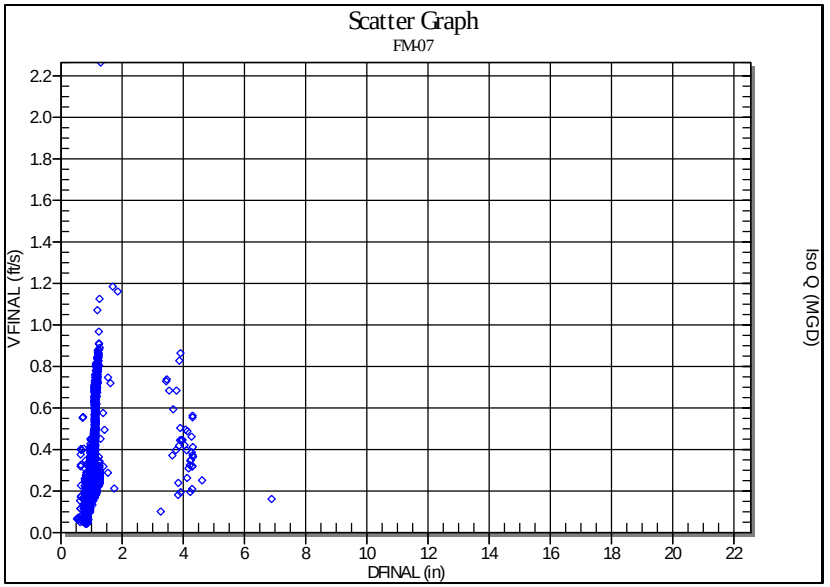

Storm Event - 6/5/2023
FM-06
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
4 Sun
Jun 2023
5 Mon
6 Tue
7 Wed
8 Thu
9 Fri
Date

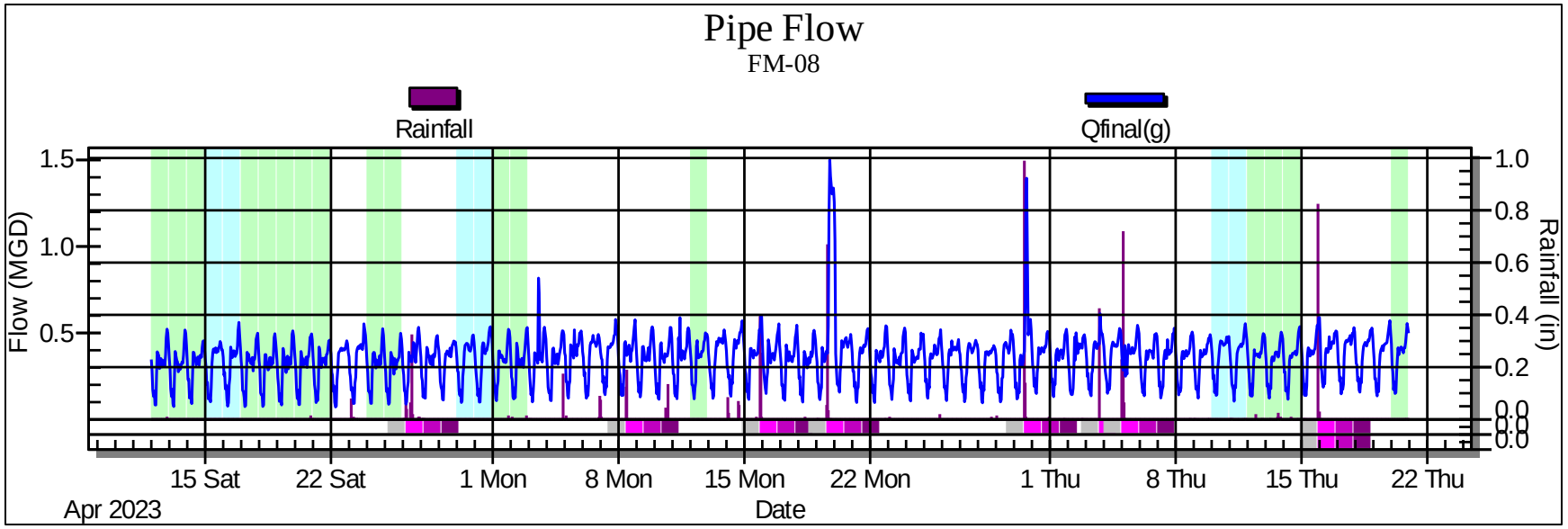

Storm Event - 6/15/2023 10:00:00 PM
FM-06
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
14 Wed
Jun 2023
15 Thu
16 Fri
17 Sat
18 Sun
19 Mon
Date

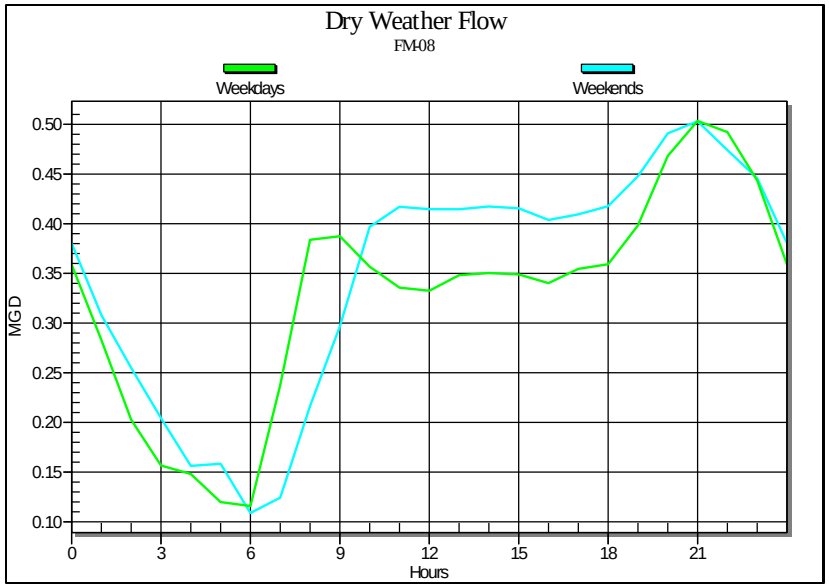

Q vs i - FM-06
Storm Period Gross RDII Volume vs. Rainfall Depth
AllStorms
Storm Period Gross RDII Volume (mg)
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
Storm Period Rainfall Depth (in)

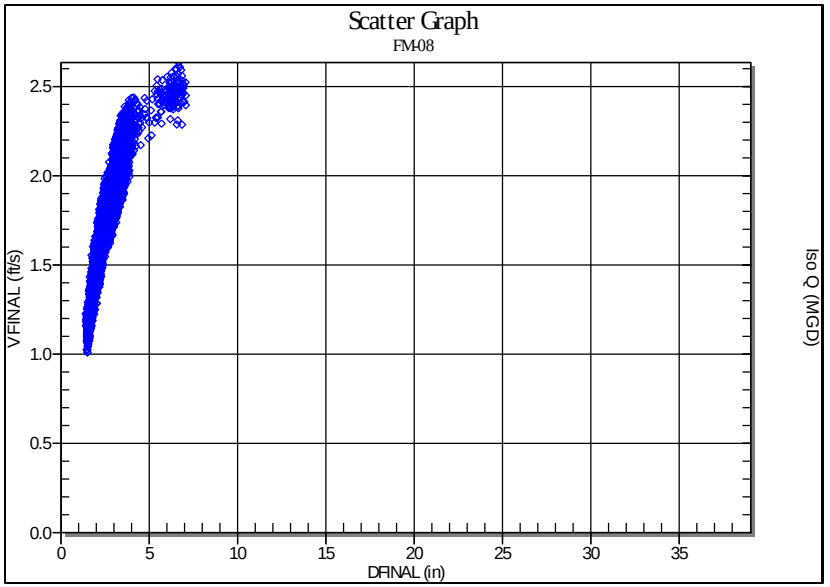

Pipe Flow
FM-07
Rainfall
Qfinal(g)
Flow (MGD)
0.10
0.05
0.00
1.0
0.8
0.6
0.4
0.2
0.0
Rainfall (in)
15 Sat
22 Sat
1 Mon
8 Mon
15 Mon
22 Mon
1 Thu
8 Thu
15 Thu
22 Thu
Apr 2023
Date

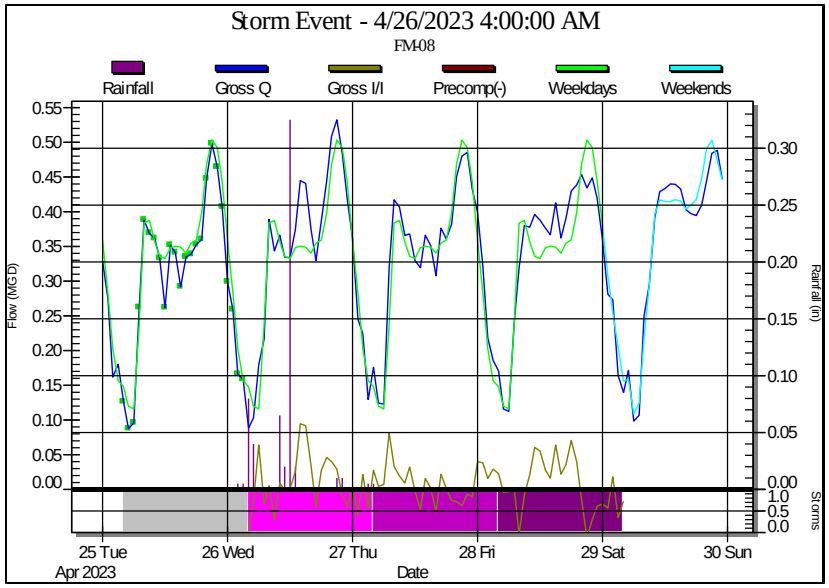

Dry Weather Flow
FM-07
Weekdays
Weekends
MGD
180
170
160
150
140
130
120
110
100
90
80
70
0
3
6
9
12
15
18
21
Hours

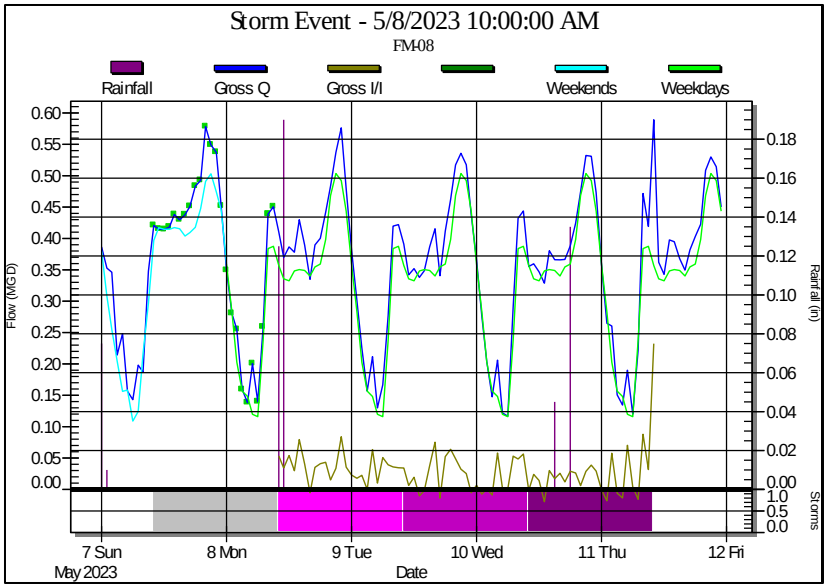

Scatter Graph
FM-07
VFINAL (ft/s)
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
2
4
6
8
10
12
14
16
18
20
22
DFINAL (in)
Iso Q (MGD)

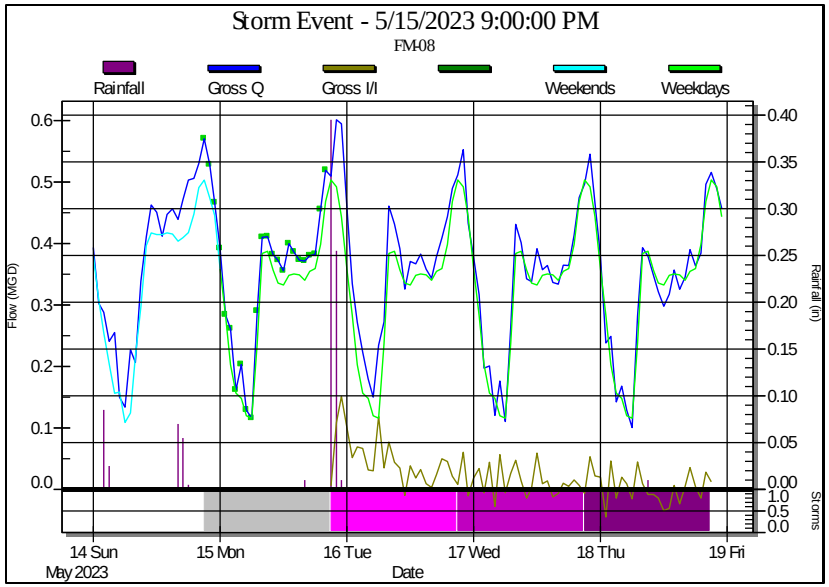

Pipe Flow
FM-08
Rainfall
Qfinal(g)
Flow (MGD)
Rainfall (in)
1.5
1.0
0.5
0.8
0.6
0.4
0.2
0.0
15 Sat
22 Sat
1 Mon
8 Mon
15 Mon
22 Mon
1 Thu
8 Thu
15 Thu
22 Thu
Apr 2023
Date

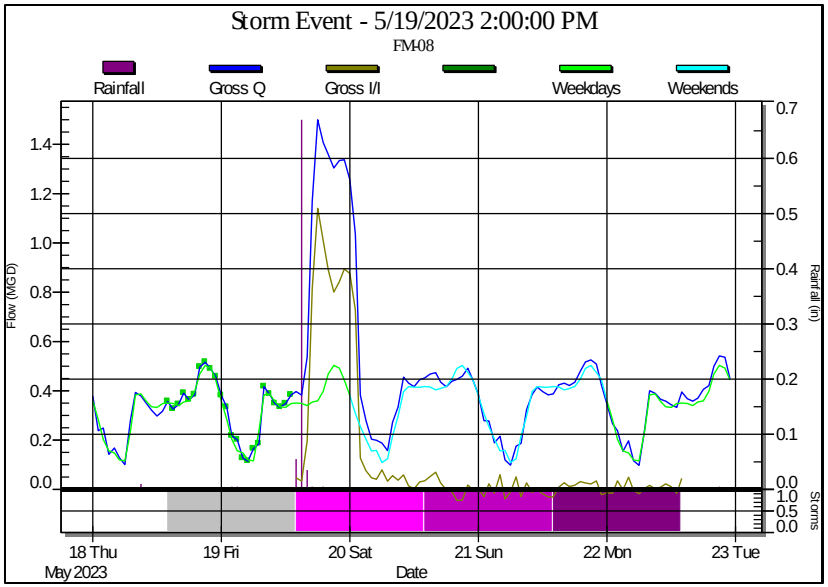

Dry Weather Flow
FM-08
Weekdays
Weekends
MGD
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0
3
6
9
12
15
18
21
Hours

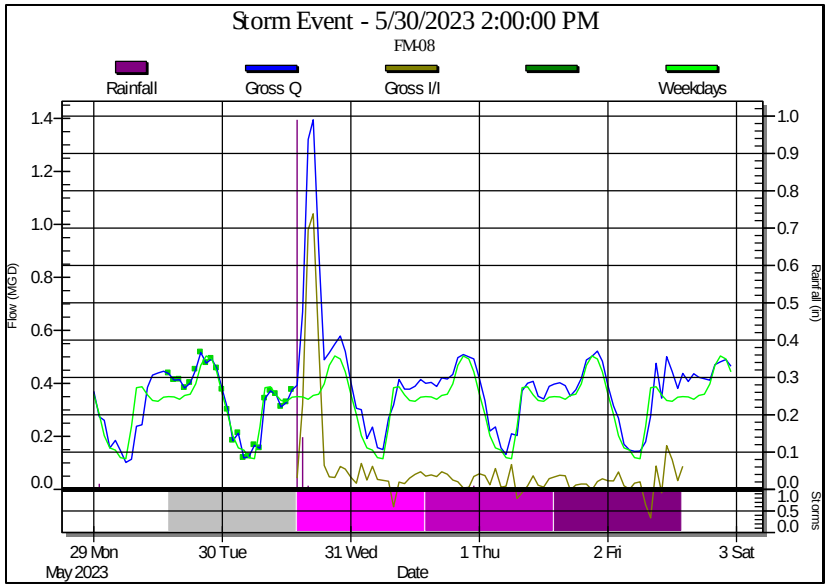

Scatter Graph
FM-08
VFINAL (ft/s)
Iso Q (MGD)
2.5
2.0
1.5
1.0
0.5
0.0
0
5
10
15
20
25
30
35
DFINAL (in)

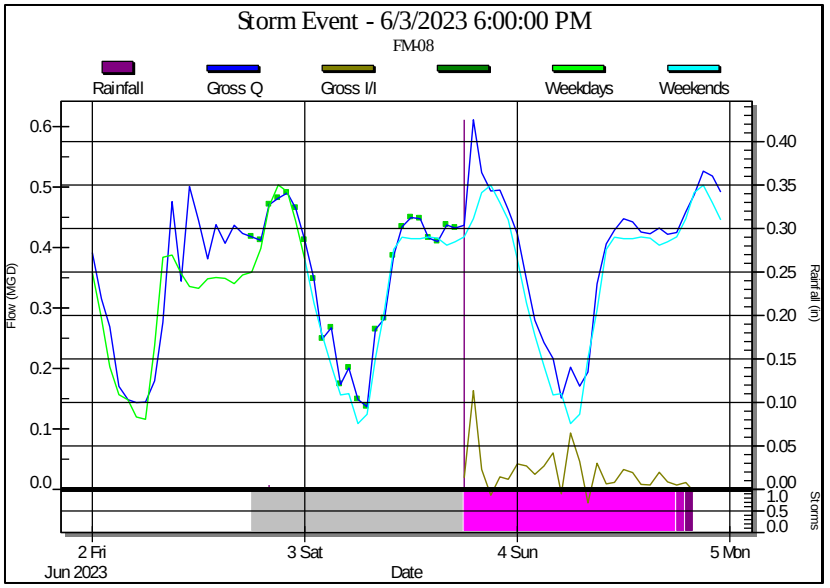

Storm Event - 4/26/2023 4:00:00 AM
FM-08
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
25 Tue
26 Wed
27 Thu
28 Fri
29 Sat
30 Sun
Apr 2023
Date

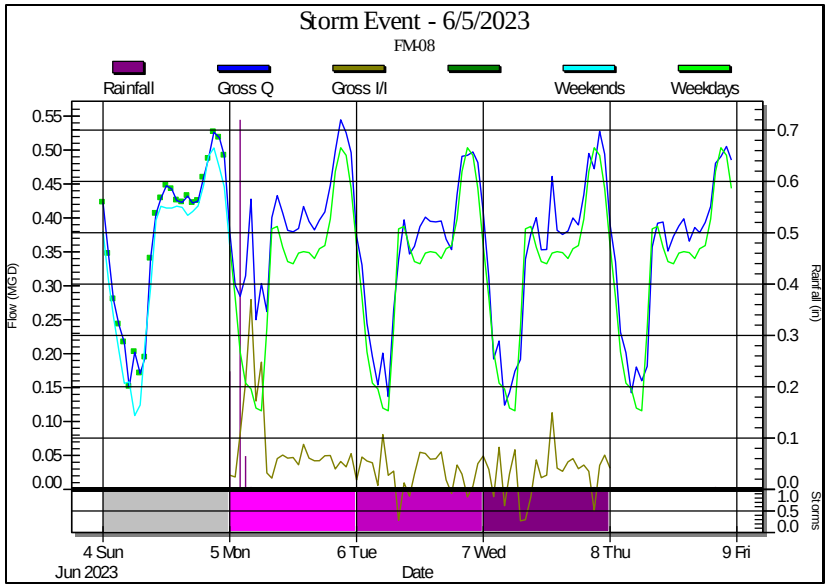

Storm Event - 5/8/2023 10:00:00 AM
FM-08
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
7 Sun
8 Mon
9 Tue
10 Wed
11 Thu
12 Fri
May 2023
Date

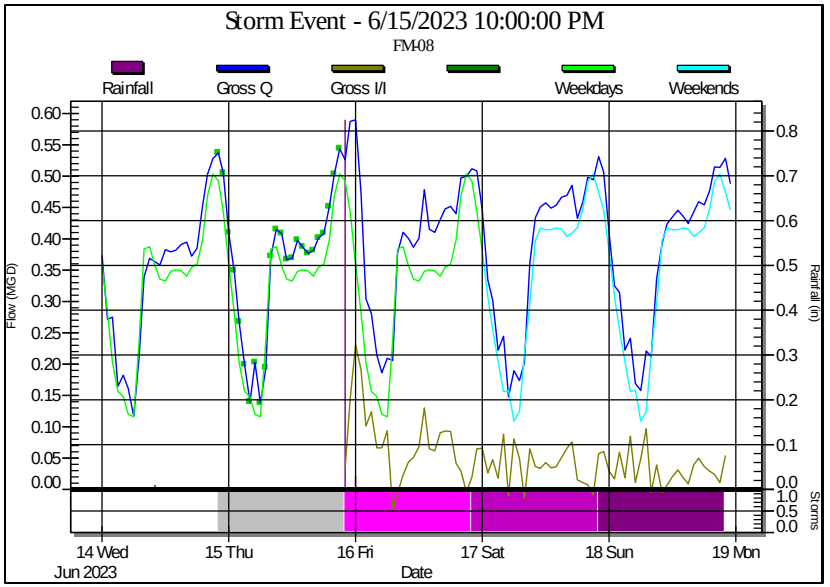

Storm Event - 5/15/2023 9:00:00 PM
FM-08
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
May 2023
Date

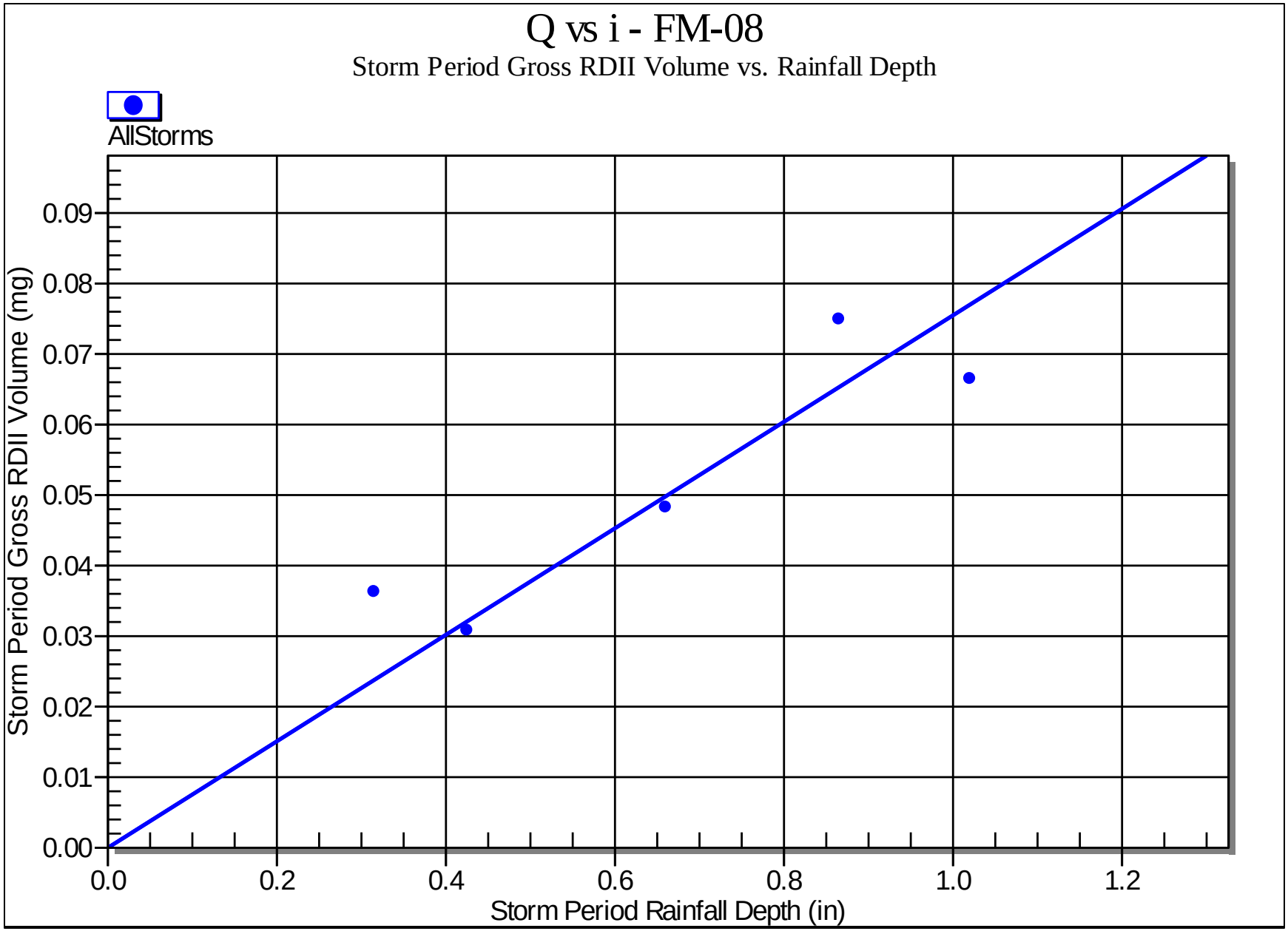

Storm Event - 5/19/2023 2:00:00 PM
FM-08
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
18 Thu
19 Fri
20 Sat
21 Sun
22 Mon
23 Tue
May 2023
Date

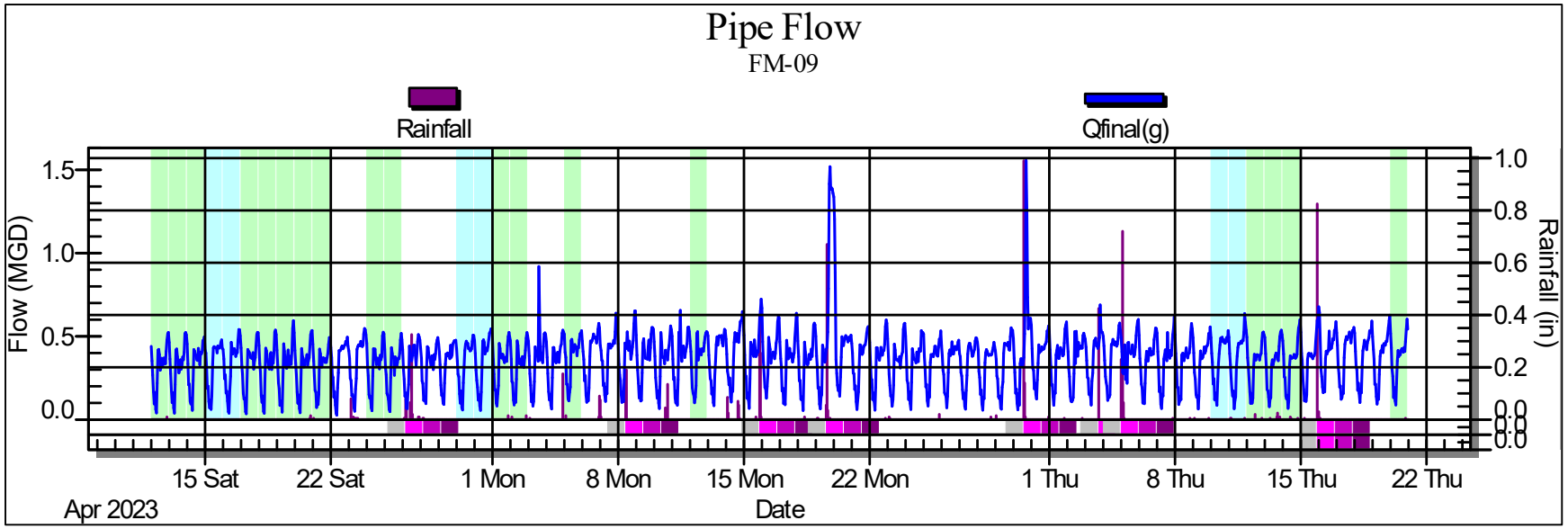

Storm Event - 5/30/2023 2:00:00 PM
FM-08
Rainfall
Gross Q
Gross I/I
Weekdays
Flow (MGD)
Rainfall (in)
Storms
29 Mon
May 2023
30 Tue
31 Wed
1 Thu
2 Fri
3 Sat
Date

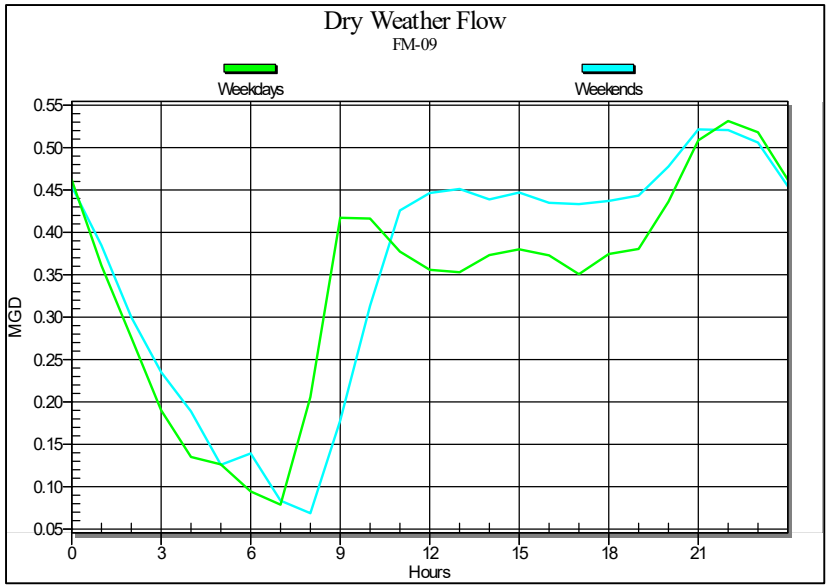

Storm Event - 6/3/2023 6:00:00 PM
FM-08
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
2 Fri
Jun 2023
3 Sat
4 Sun
5 Mon
Date

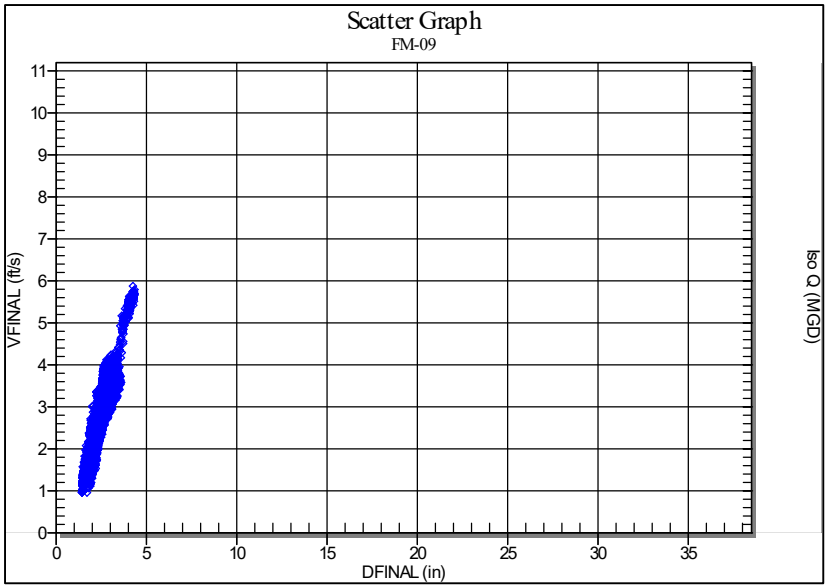

Storm Event - 6/5/2023
FM-08
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
4 Sun
Jun 2023
5 Mon
6 Tue
7 Wed
8 Thu
9 Fri
Date

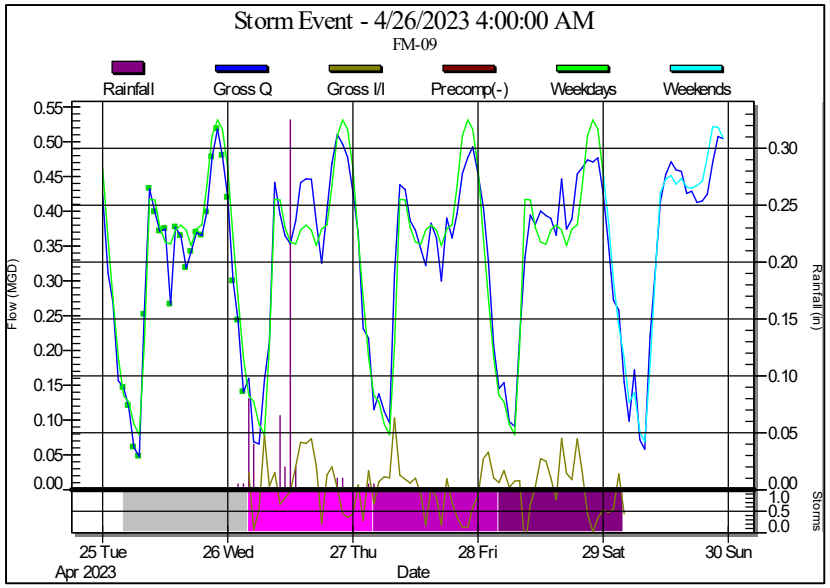

Storm Event - 6/15/2023 10:00:00 PM
FM-08
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
14 Wed
Jun 2023
15 Thu
16 Fri
17 Sat
18 Sun
19 Mon
Date

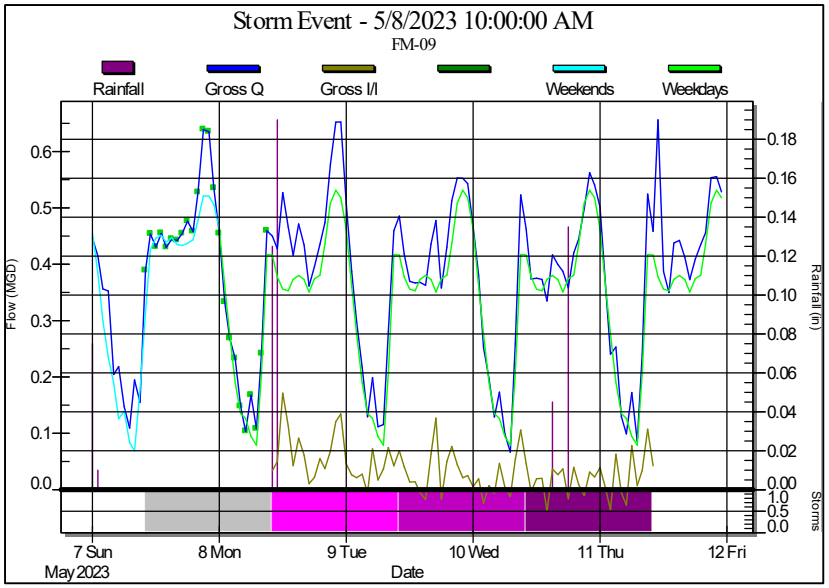

Q vs i - FM-08
Storm Period Gross RDII Volume vs. Rainfall Depth
AllStorms
Storm Period Gross RDII Volume (mg)
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.0
0.2
0.4
0.6
0.8
1.0
1.2
Storm Period Rainfall Depth (in)

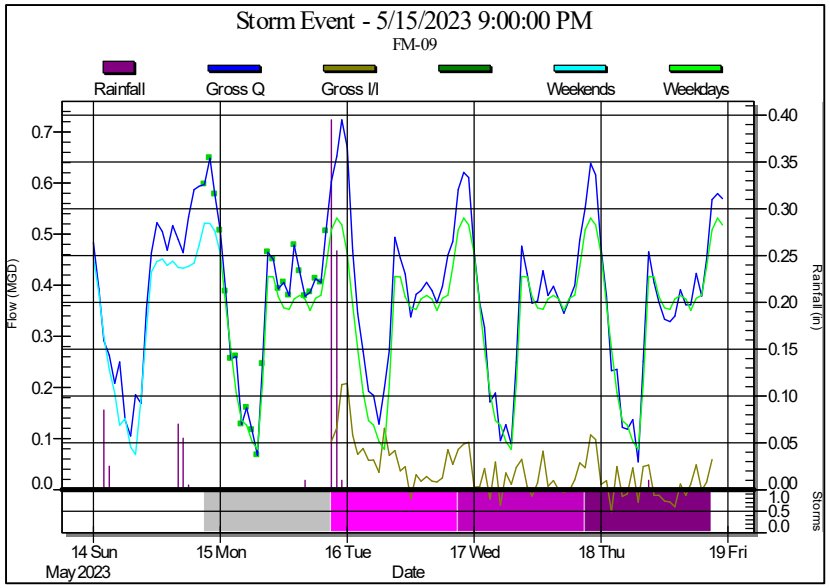

Pipe Flow
FM-09
Rainfall
Qfinal(g)
Flow (MGD)
Rainfall (in)
1.5
1.0
0.5
0.0
1.0
0.8
0.6
0.4
0.2
0.0
15 Sat
22 Sat
1 Mon
8 Mon
15 Mon
22 Mon
1 Thu
8 Thu
15 Thu
22 Thu
Apr 2023
Date

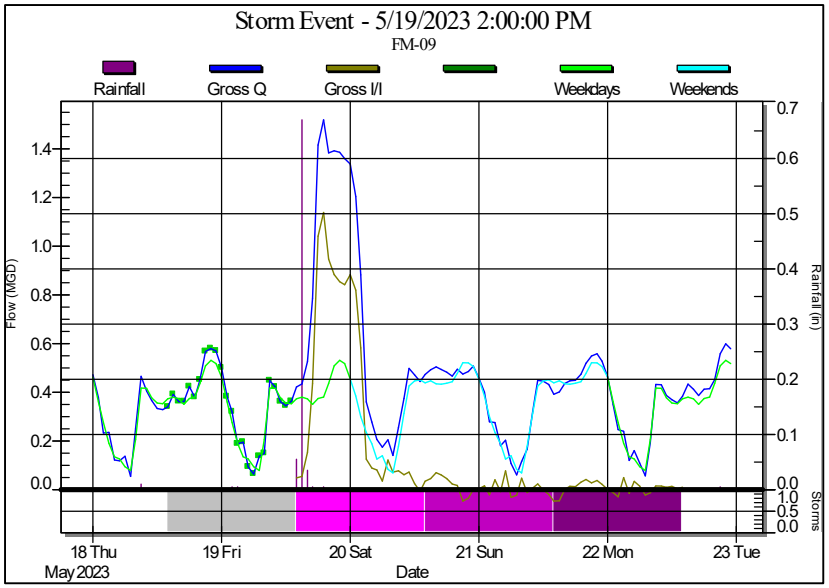

Dry Weather Flow
FM-09
Weekdays
Weekends
MGD
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0
3
6
9
12
15
18
21
Hours

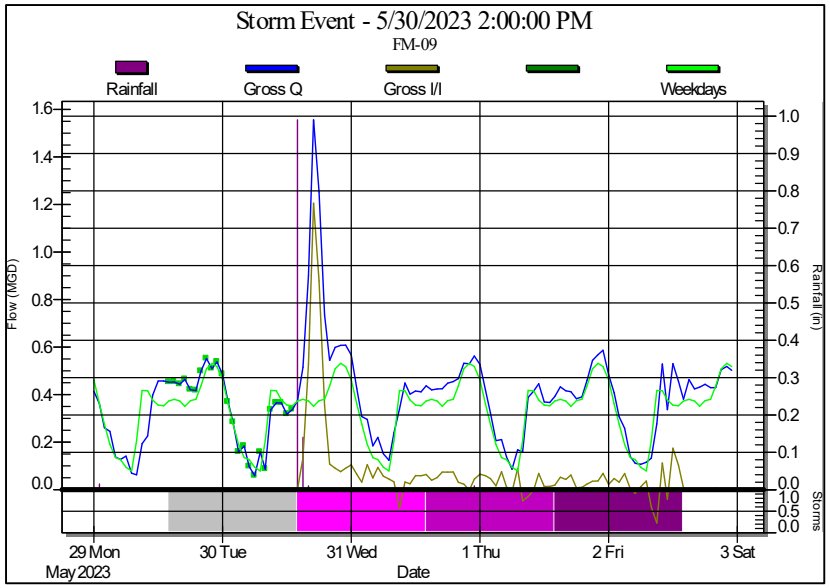

Scatter Graph
FM-09
VFINAL (ft/s)
Iso Q (MGD)
11
10
9
8
7
6
5
4
3
2
1
0
0
5
10
15
20
25
30
35
DFINAL (in)

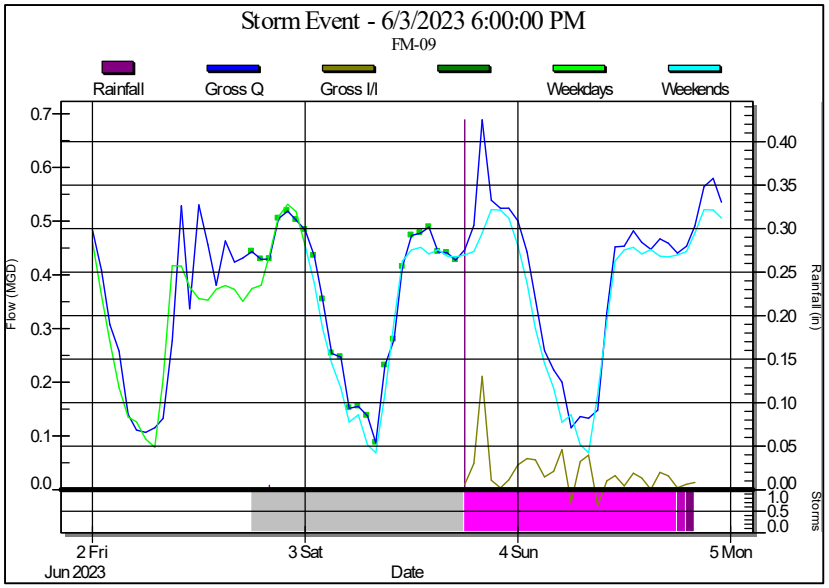

Storm Event - 4/26/2023 4:00:00 AM
FM-09
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
25 Tue
26 Wed
27 Thu
28 Fri
29 Sat
30 Sun
Apr 2023
Date

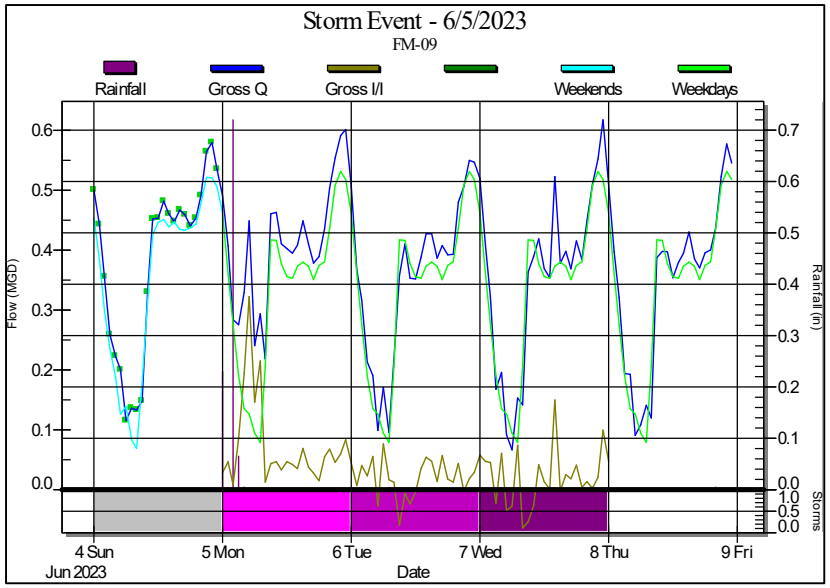

Storm Event - 5/8/2023 10:00:00 AM
FM-09
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
7 Sun
8 Mon
9 Tue
10 Wed
11 Thu
12 Fri
May 2023
Date

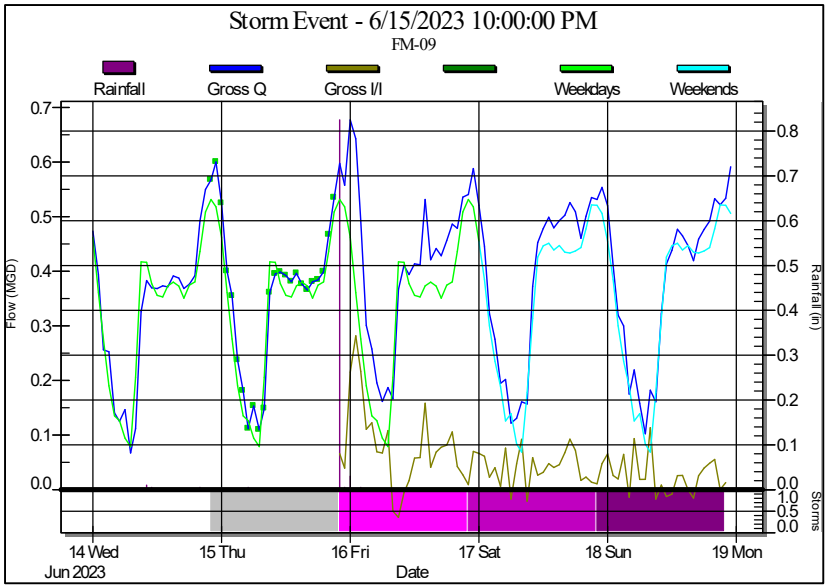

Storm Event - 5/15/2023 9:00:00 PM
FM-09
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
14 Sun
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
May 2023
Date

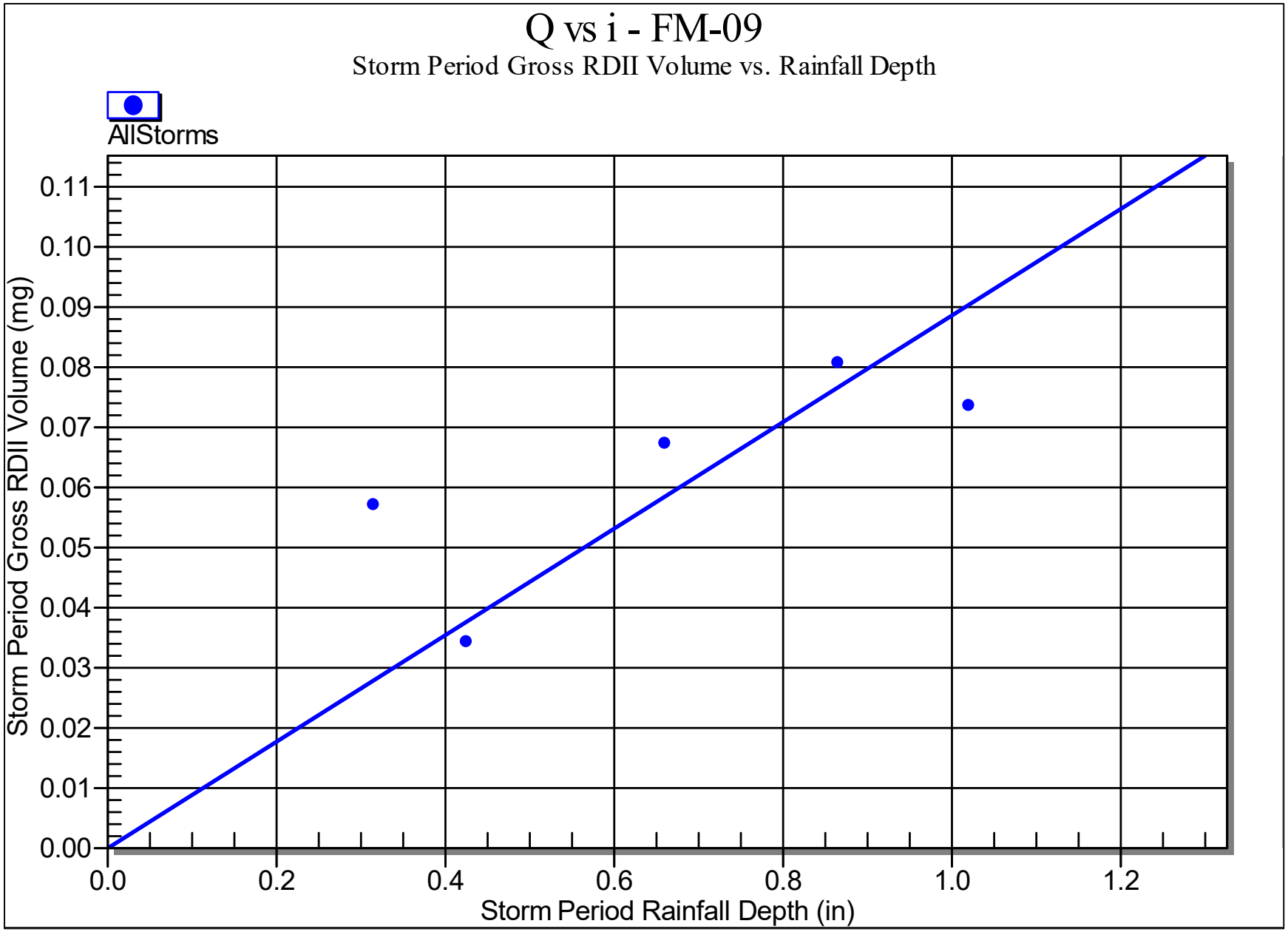

Storm Event - 5/19/2023 2:00:00 PM
FM-09
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
18 Thu
19 Fri
20 Sat
21 Sun
22 Mon
23 Tue
May 2023
Date

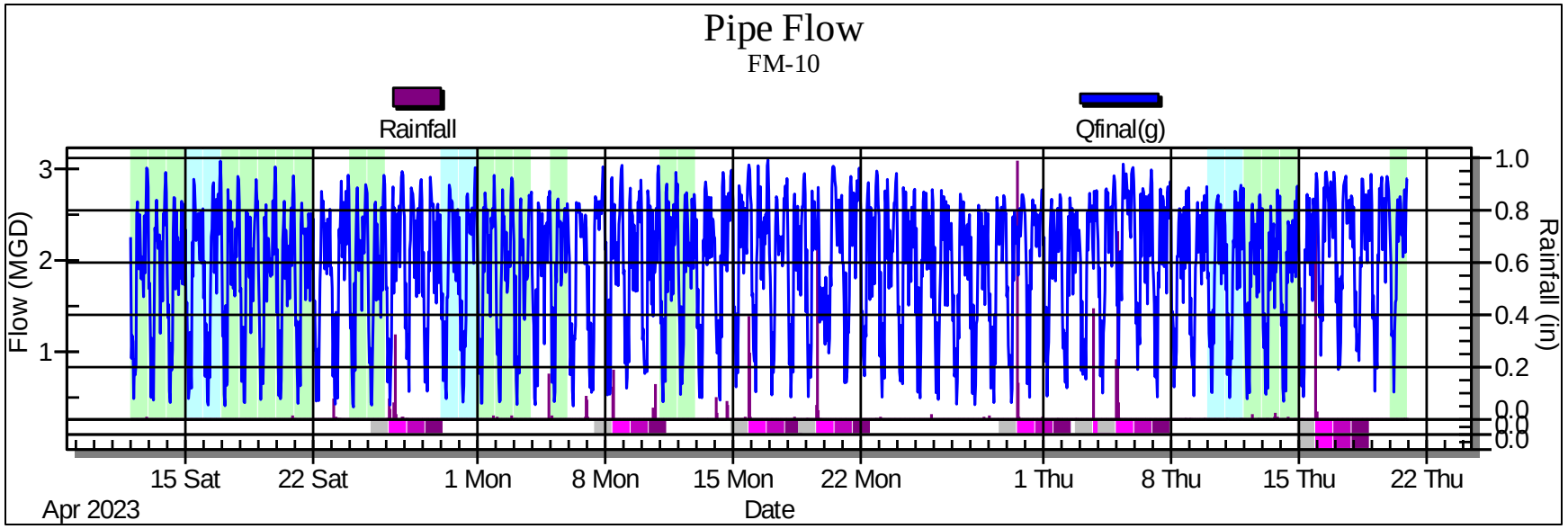

Storm Event - 5/30/2023 2:00:00 PM
FM-09
Rainfall
Gross Q
Gross I/I
Weekdays
Flow (MGD)
Rainfall (in)
Storms
29 Mon
May 2023
30 Tue
31 Wed
1 Thu
2 Fri
3 Sat
Date

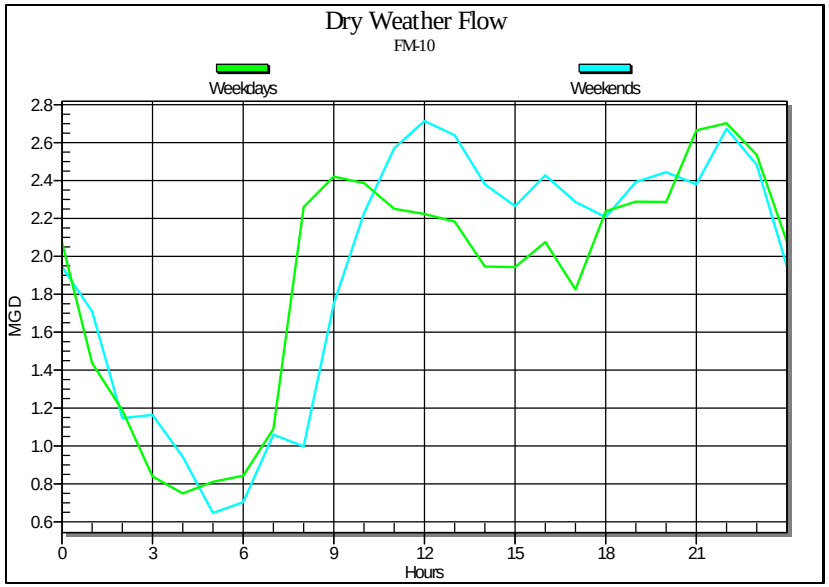

Storm Event - 6/3/2023 6:00:00 PM
FM-09
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
2 Fri
Jun 2023
3 Sat
4 Sun
5 Mon
Date

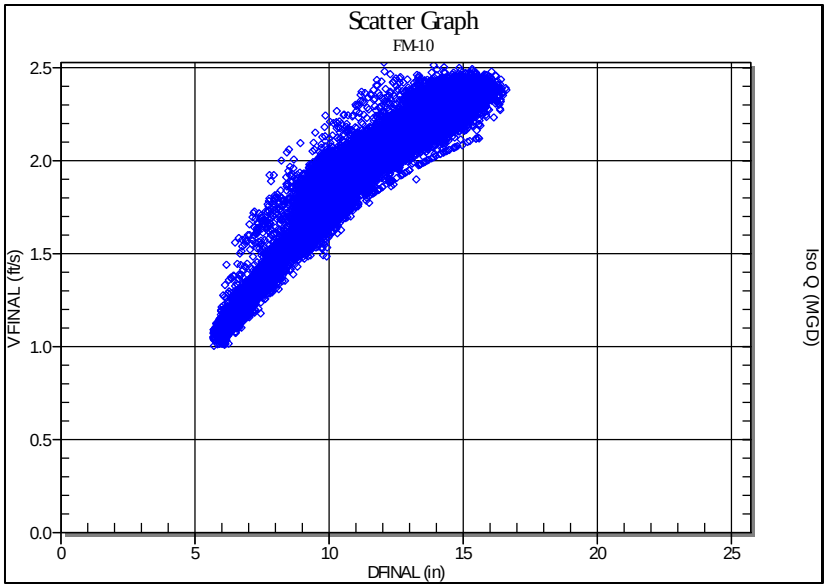

Storm Event - 6/5/2023
FM-09
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
4 Sun
Jun 2023
5 Mon
6 Tue
7 Wed
8 Thu
9 Fri
Date

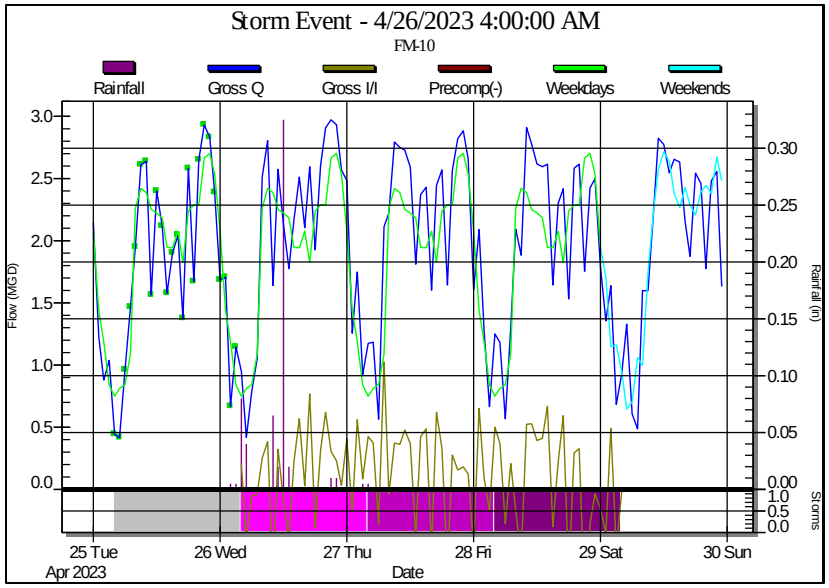

Storm Event - 6/15/2023 10:00:00 PM
FM-09
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
14 Wed
Jun 2023
15 Thu
16 Fri
17 Sat
18 Sun
19 Mon
Date

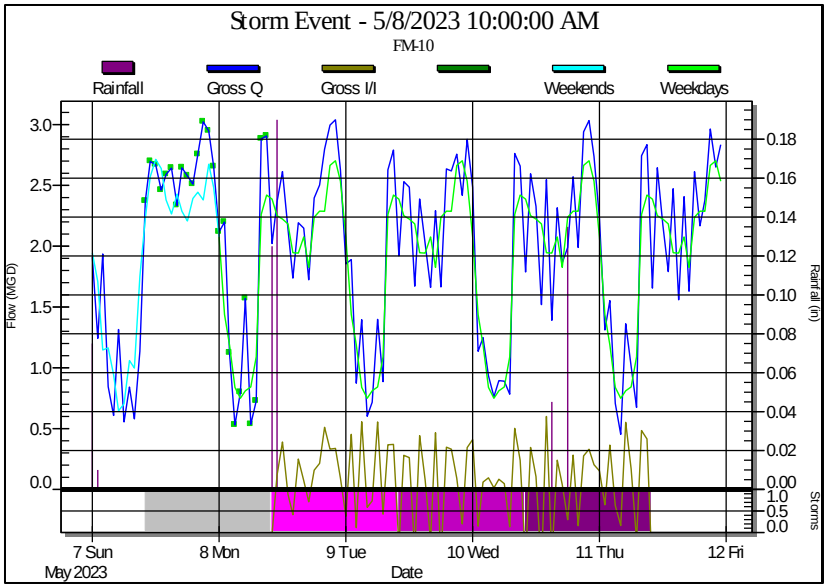

Q vs i - FM-09
Storm Period Gross RDII Volume vs. Rainfall Depth
AllStorms
Storm Period Gross RDII Volume (mg)
0.11
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
0.0
0.2
0.4
0.6
0.8
1.0
1.2
Storm Period Rainfall Depth (in)

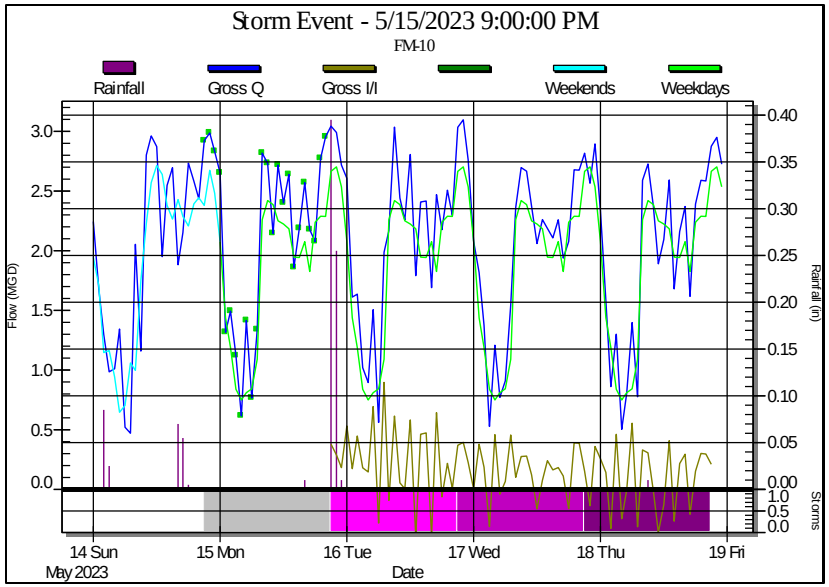

Pipe Flow
FM-10
Rainfall
Qfinal(g)
Flow (MGD)
Rainfall (in)
3
2
1
1.0
0.8
0.6
0.4
0.2
0.0
15 Sat
22 Sat
1 Mon
8 Mon
15 Mon
22 Mon
1 Thu
8 Thu
15 Thu
22 Thu
Apr 2023
Date

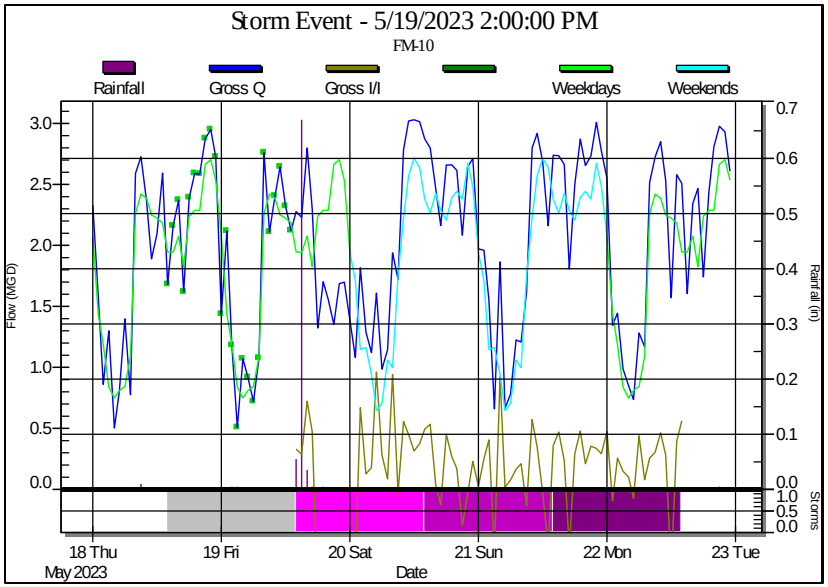

Dry Weather Flow
FM-10
Weekdays
Weekends
MGD
Hours
0
3
6
9
12
15
18
21

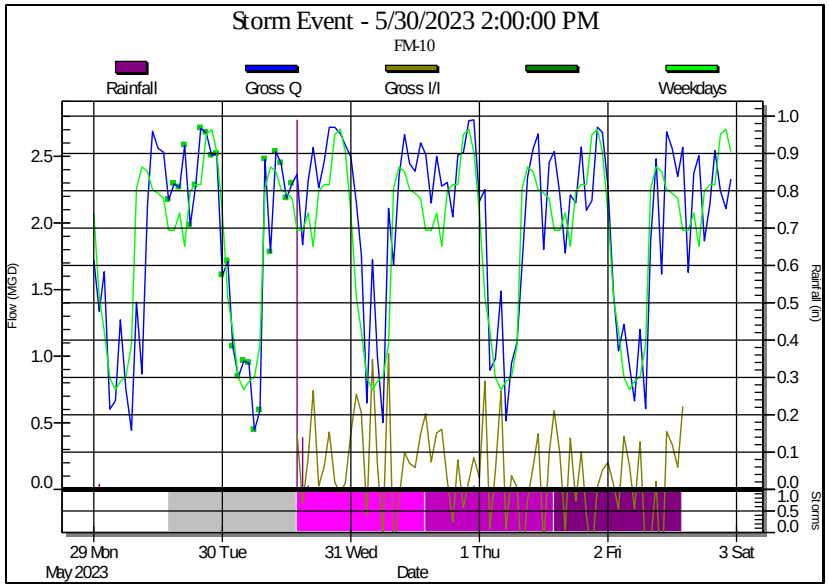

Scatter Graph
FM-10
VFINAL (ft/s)
DFINAL (in)
Iso Q (MGD)
0.0
0.5
1.0
1.5
2.0
2.5
0
5
10
15
20
25

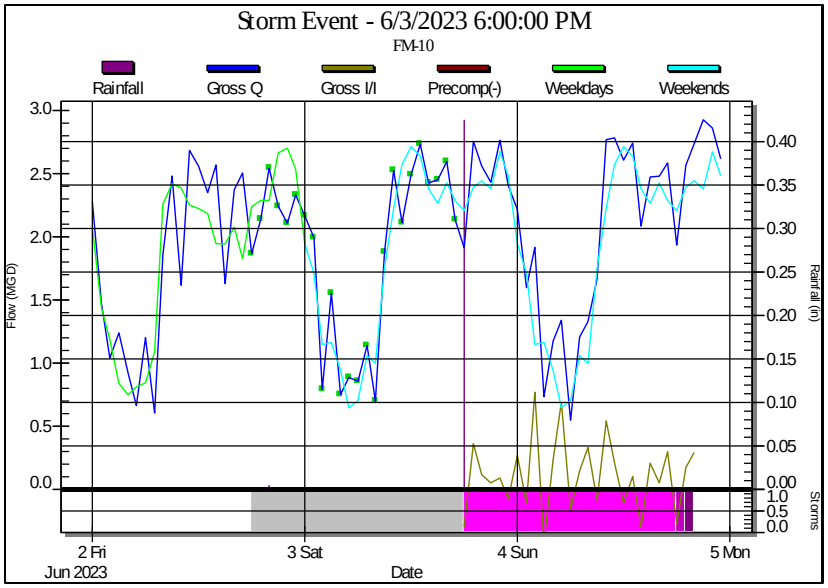

Storm Event - 4/26/2023 4:00:00 AM
FM-10
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
25 Tue
Apr 2023
26 Wed
27 Thu
28 Fri
29 Sat
30 Sun
Date

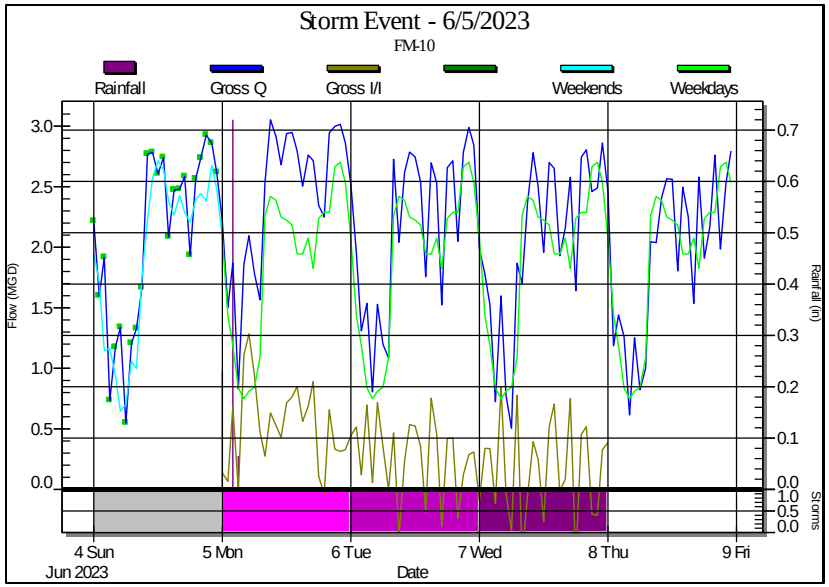

Storm Event - 5/8/2023 10:00:00 AM
FM-10
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
7 Sun
May 2023
8 Mon
9 Tue
10 Wed
11 Thu
12 Fri
Date

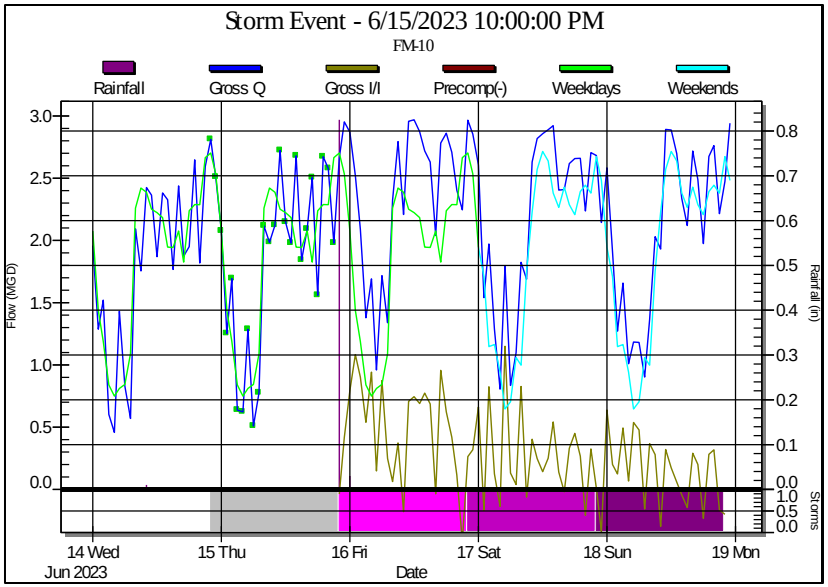

Storm Event - 5/15/2023 9:00:00 PM
FM-10
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
14 Sun
May 2023
15 Mon
16 Tue
17 Wed
18 Thu
19 Fri
Date

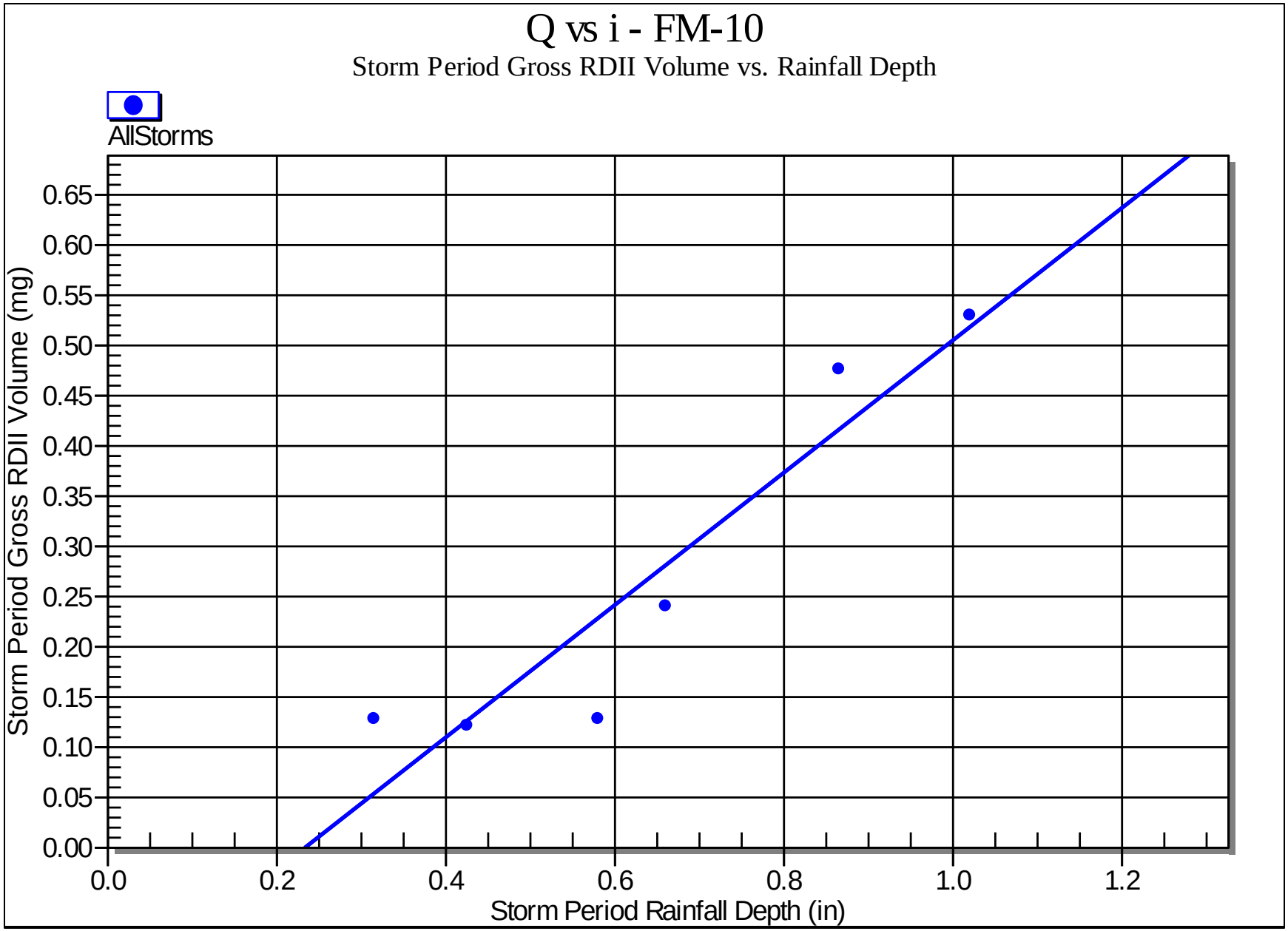

Storm Event - 5/19/2023 2:00:00 PM
FM-10
Rainfall
Gross Q
Gross I/I
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
18 Thu
May 2023
19 Fri
20 Sat
21 Sun
22 Mon
23 Tue
Date


Storm Event - 5/30/2023 2:00:00 PM
FM-10
Rainfall
Gross Q
Gross I/I
Weekdays
Flow (MGD)
Rainfall (in)
Storms
29 Mon
May 2023
30 Tue
31 Wed
1 Thu
2 Fri
3 Sat
Date


Storm Event - 6/3/2023 6:00:00 PM
FM-10
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
2 Fri
Jun 2023
3 Sat
4 Sun
5 Mon
Date


Storm Event - 6/5/2023
FM-10
Rainfall
Gross Q
Gross I/I
Weekends
Weekdays
Flow (MGD)
Rainfall (in)
Storms
4 Sun
Jun 2023
5 Mon
6 Tue
7 Wed
8 Thu
9 Fri
Date


Storm Event - 6/15/2023 10:00:00 PM
FM-10
Rainfall
Gross Q
Gross I/I
Precomp(-)
Weekdays
Weekends
Flow (MGD)
Rainfall (in)
Storms
14 Wed
Jun 2023
15 Thu
16 Fri
17 Sat
18 Sun
19 Mon
Date


Q vs i - FM-10
Storm Period Gross RDII Volume vs. Rainfall Depth
AllStorms
Storm Period Gross RDII Volume (mg)
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
0.40
0.45
0.50
0.55
0.60
0.65
0.0
0.2
0.4
0.6
0.8
1.0
1.2
Storm Period Rainfall Depth (in)

Appendix C
Water Demand and Wastewater Flow Projections

Table C-1
Water Demand Projections

2023								
Customer Base	**Served Population**	**Non-residential Acres**	**Average Day Usage Rates**	**Average Day Demand (MGD)**	**Max Day to Avg Day Ratio**	**Max Day Demand (MGD)**	**Peak Hour to Max Day Ratio**	**Peak Hour Demand (MGD)**
Lower Residential	14,089	-	185 gpcd	2.61	2.20	5.73	2.10	12.04
Lower Non-Residential	-	424	1,400 gpd/acre	0.59	2.20	1.31	2.10	2.74
Total Lower Plane	**14,089**	**424**	**-**	**3.20**	**-**	**7.04**	**-**	**14.78**
Table C-1	24,754	-	185 gpcd	4.58	2.20	10.07	2.10	21.16
Upper Non-Residential	-	1,068	1,400 gpd/acre	1.50	2.20	3.29	2.10	6.91
Total Upper Plane	**24,754**	**1,068**	**-**	**6.07**	**-**	**13.36**	**-**	**28.07**
Total Town	**38,843**	**1,492**		**9.27**	**-**	**20.40**	**-**	**42.85**
2028[(1)]								
Customer Base	**Served Population**	**Non-residential Acres**	**Average Day Usage Rates**	**Average Day Demand (MGD)**	**Max Day to Avg Day Ratio**	**Max Day Demand (MGD)**	**Peak Hour to Max Day Ratio**	**Peak Hour Demand (MGD)**
Lower Residential	26,101	-	185 gpcd	4.83	2.20	10.62	2.10	22.31
Lower Non-Residential	-	1,175	1,400 gpd/acre	1.65	2.20	3.62	2.10	7.60
Total Lower Plane	**26,101**	**1,175**	**-**	**6.47**	**-**	**14.24**	**-**	**29.91**
Upper Residential	27,292	-	185 gpcd	5.05	2.20	11.11	2.10	23.33
Upper Non-Residential	-	1,149	1,400 gpd/acre	1.61	2.20	3.54	2.10	7.43
Total Upper Plane	**27,292**	**1,149**	**-**	**6.66**	**-**	**14.65**	**-**	**30.76**
Total Town	**53,393**	**2,324**		**13.13**	**-**	**28.89**	**-**	**60.67**
2033[(1)]								
Customer Base	**Served Population**	**Non-residential Acres**	**Average Day Usage Rates**	**Average Day Demand (MGD)**	**Max Day to Avg Day Ratio**	**Max Day Demand (MGD)**	**Peak Hour to Max Day Ratio**	**Peak Hour Demand (MGD)**
Lower Residential	34,454	-	185 gpcd	6.37	2.20	14.02	2.10	29.45
Lower Non-Residential	-	2,024	1,400 gpd/acre	2.83	2.20	6.23	2.10	13.09
Total Lower Plane	**34,454**	**2,024**	**-**	**9.21**	**-**	**20.26**	**-**	**42.54**
Upper Residential	29,983	-	185 gpcd	5.55	2.20	12.20	2.10	25.63
Upper Non-Residential	-	1,616	1,400 gpd/acre	2.26	2.20	4.98	2.10	10.45
Total Upper Plane	**29,983**	**1,616**	**-**	**7.81**	**-**	**17.18**	**-**	**36.08**
Total Town	**64,437**	**3,640**		**17.02**	**-**	**37.44**	**-**	**78.62**
Buildout[(1)]								
Customer Base	**Served Population**	**Non-residential Acres**	**Average Day Usage Rates**	**Average Day Demand (MGD)**	**Max Day to Avg Day Ratio**	**Max Day Demand (MGD)**	**Peak Hour to Max Day Ratio**	**Peak Hour Demand (MGD)**
Artesia Development	5,364	-	185 gpcd	0.99	2.20	2.18	2.10	4.58
Lower Residential	41,441	-	185 gpcd	7.67	2.20	16.87	2.10	35.42
Lower Non-Residential	-	2,928	1,400 gpd/acre	4.10	2.20	9.02	2.10	18.94
Total Lower Plane	**41,441**	**2,928**	**-**	**12.76**	**-**	**28.07**	**-**	**58.94**
Upper Residential	35,370	-	185 gpcd	6.54	2.20	14.40	2.10	30.23
Upper Non-Residential	-	1,901	1,400 gpd/acre	2.66	2.20	5.86	2.10	12.30
Total Upper Plane	**35,370**	**1,901**	**-**	**9.20**	**-**	**20.25**	**-**	**42.53**
Total Town	**82,175**	**4,829**		**22.96**	**-**	**50.50**	**-**	**106.05**

[(1)] 5-year, 10-year and buildout demands assume the area between the DNT and railroad is shifted from the Upper Pressure Plane to the Lower Pressure Plane

Table C-2
Summary of Wastewater Flow Projections

2023				
Customer Base	**Served Population**	**Non-Residential Acres**	**Average Day Flow (MGD)[1]**	**Peak Wet Weather Flow[2] (MGD)**
UTRWD Residential	14,094	-	1.31	5.24
UTRWD Non-Residential	-	588	-	-
Total UTRWD Basin	**14,094**	**588**	**1.31**	**5.24**
NTMWD Residential	22,478	-	1.83	7.32
NTMWD Non-Residential	-	458	-	-
Total NTMWD Basin	**22,478**	**458**	**1.83**	**7.32**
Total Town	**36,572**	**1,046**	**3.14**	**12.56**
2028				
Customer Base	**Served Population**	**Non-Residential Acres**	**Average Day Flow[3] (MGD)**	**Peak Wet Weather Flow[2] (MGD)**
UTRWD Residential	34,271	-	3.26	13.04
UTRWD Non-Residential	-	1,879	1.22	4.88
Total UTRWD Basin	**34,271**	**1,879**	**4.48**	**17.92**
NTMWD Residential	16,944	-	1.61	6.44
NTMWD Non-Residential	-	428	0.28	1.12
Total NTMWD Basin	**16,944**	**428**	**1.89**	**7.56**
Total Town	**51,215**	**2,307**	**6.37**	**25.48**
2033				
Customer Base	**Served Population**	**Non-Residential Acres**	**Average Day Flow[3] (MGD)**	**Peak Wet Weather Flow[2] (MGD)**
UTRWD Residential	43,059	-	4.09	16.36
UTRWD Non-Residential	-	2,909	1.89	7.56
Total UTRWD Basin	**43,059**	**2,909**	**5.98**	**23.92**
NTMWD Residential	19,201	-	1.82	7.28
NTMWD Non-Residential	-	709	0.46	1.84
Total NTMWD Basin	**19,201**	**709**	**2.28**	**9.12**
Total Town	**62,259**	**3,618**	**8.26**	**33.04**
Buildout				
Customer Base	**Served Population**	**Non-Residential Acres**	**Average Day Flow[3] (MGD)**	**Peak Wet Weather Flow[2] (MGD)**
UTRWD Residential	54,374	-	5.17	20.68
UTRWD Non-Residential	-	3,984	2.59	10.36
Total UTRWD Basin	**54,374**	**3,984**	**7.76**	**31.04**
NTMWD Residential	22,438	-	2.13	8.52
NTMWD Non-Residential	-	840	0.55	2.20
Total NTMWD Basin	**22,438**	**840**	**2.68**	**10.72**
Total Town	**76,811**	**4,824**	**10.44**	**41.76**

[1]Flows are based on wholesale summary data.

[2]The peaking factor is assumed to be 4.0 for all planning periods.

[3]For future growth, population has a 95 gallons per capita day rate and non-residential acreage has a 650 gallons per acre per day rate.

Appendix D
Water System Project Cost Estimates

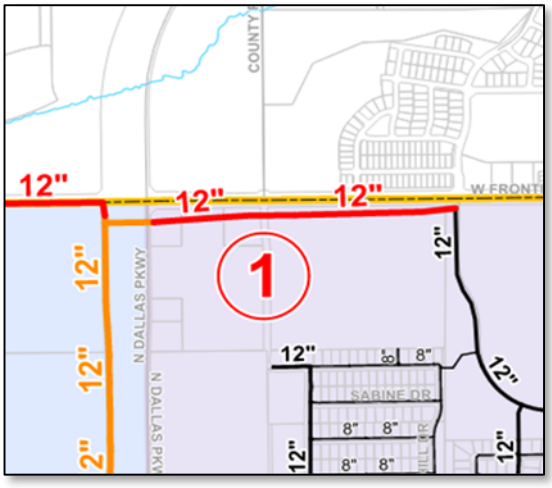
Town of Prosper

Capital Improvement Cost Estimate	**June 20, 2025**
Construction Project Number: 1	**5-Year**
Project Name:	**West Frontier Parkway 12-inch Water Line**

Project Description:

A 12-inch water line along West Frontier Parkway from Greenwood Memorial Drive to North Dallas Parkway.

Vicinity Map



Project Drivers:

This project will to help establish gridding in the eastern portion of the Lower Pressure Plane, as well as provide redundancy to and help maintain pressures in the Frontier Park neighborhood.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" WL & Appurtenances	2,800	LF	$ 240	$ 672,000
2	Concrete Pavement Repair	2,800	LF	$ 100	$ 280,000
				SUBTOTAL:	**$ 952,000**
		CONTINGENCY		30%	$ 285,600
				SUBTOTAL:	**$ 1,237,600**
		ENG/SURVEY		15%	$ 185,700
				SUBTOTAL:	**$ 1,423,300**
				Estimated Project Total:	**$ 1,423,300**

Town of Prosper

Capital Improvement Cost Estimate — **June 20, 2025**

Construction Project Number: 2 — **Phase:** 5-Year

Project Name: Talon Lane 12-inch Water Line and PRV

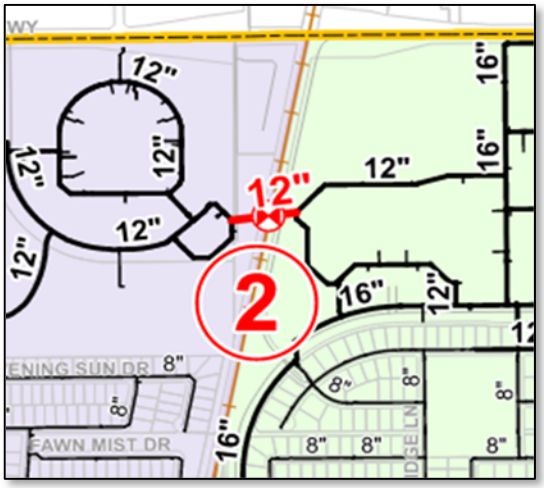
Project Description:

A 12-inch water line and pressure reducing valve south of West Frontier Parkway and intersecting Talon Lane.

Project Drivers:

This project will provide an additional transfer point between the Upper and Lower Pressure Planes.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" WL & Appurtenances	500	LF	$ 240	$ 120,000
2	Pressure Reducing Valve	1	LS	$ 30,500	$ 30,500
3	20" Boring and Casing	200	LF	$ 1,000	$ 200,000
4	Concrete Pavement Repair	100	LF	$ 100	$ 10,000
				SUBTOTAL:	**$ 360,500**
		CONTINGENCY		30%	$ 108,200
				SUBTOTAL:	**$ 468,700**
		ENG/SURVEY		15%	$ 70,400
				SUBTOTAL:	**$ 539,100**
				Estimated Project Total:	**$ 539,100**

Town of Prosper

Capital Improvement Cost Estimate — **June 20, 2025**

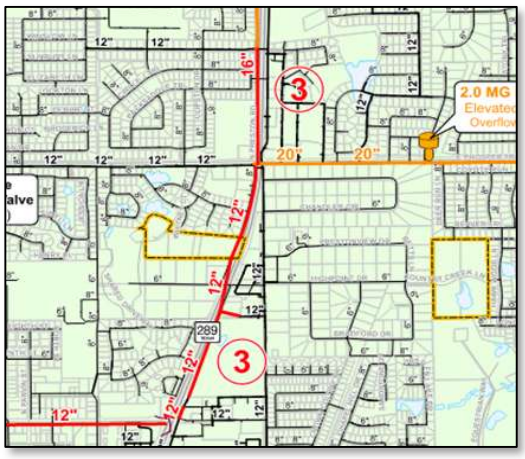
Construction Project Number: 3 — **Phase:** 5-Year

Project Name: Preston Road 12- and 16-inch Water Line

Project Description:

A 16-inch water line along North Preston Road from St. Peter Lane to East Prosper Trail, followed by a 12-inch water line from East Prosper Trail to East Broadway Street.

Vicinity Map



Project Drivers:

This project helps maintain pressures in the Upper Pressure Plane during peak hour demands.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	2,200	LF	$ 320	$ 704,000
2	12" WL & Appurtenances	5,000	LF	$ 240	$ 1,200,000
3	Concrete Pavement Repair	7,200	LF	$ 100	$ 720,000
				SUBTOTAL:	**$ 2,624,000**
		CONTINGENCY		30%	$ 787,200
				SUBTOTAL:	**$ 3,411,200**
		ENG/SURVEY		15%	$ 511,700
				SUBTOTAL:	**$ 3,922,900**
				Estimated Project Total:	**$ 3,922,900**

Town of Prosper

Capital Improvement Cost Estimate — **June 20, 2025**

Construction Project Number: 4 — **Phase:** 5-Year

Project Name: Railroad 12-inch Water Line and PRV

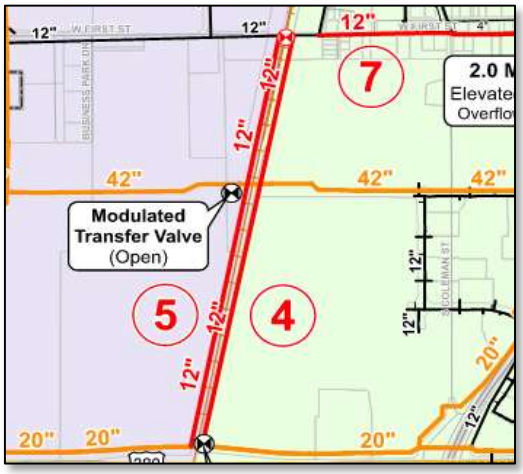
Project Description:

A pressure reducing valve and a 12-inch water line along the east side of the railroad tracks from First Street to University Drive.

Project Drivers:

This project completes looping in the Upper Pressure Plane and will help supply projected non-residential development.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" WL & Appurtenances	5,800	LF	$ 240	$ 1,392,000
2	Pressure Reducing Valve	1	LS	$ 30,500	$ 30,500
				$ 75,000	
				SUBTOTAL:	**$ 1,422,500**
		CONTINGENCY		30%	$ 426,800
				SUBTOTAL:	**$ 1,849,300**
		ENG/SURVEY		15%	$ 277,400
				SUBTOTAL:	**$ 2,126,700**
				Estimated Project Total:	**$ 2,126,700**

Town of Prosper

Capital Improvement Cost Estimate	**June 20, 2025**
Construction Project Number: 5	**Phase: 5-Year**
Project Name:	**Railroad 12-inch Water Line**

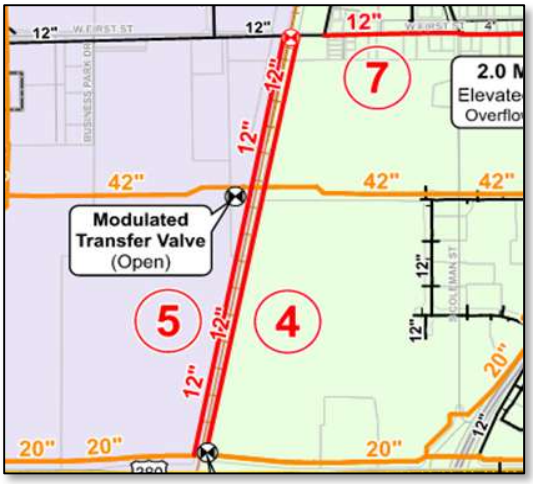
Project Description:

A 12-inch water line along the west side of the railroad tracks from First Street to University Drive.

Project Drivers:

This project completes looping in the Lower Pressure Plane and will help supply projected non-residential development.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" WL & Appurtenances	5,800	LF	$ 240	$ 1,392,000
				SUBTOTAL:	**$ 1,392,000**
		CONTINGENCY		30%	$ 417,600
				SUBTOTAL:	**$ 1,809,600**
		ENG/SURVEY		15%	$ 271,500
				SUBTOTAL:	**$ 2,081,100**
				Estimated Project Total:	**$ 2,081,100**

Town of Prosper

Capital Improvement Cost Estimate — **June 20, 2025**

Construction Project Number: 6 — **Phase:** 5-Year

Project Name: South of First Street 12- and 30-inch Water Line

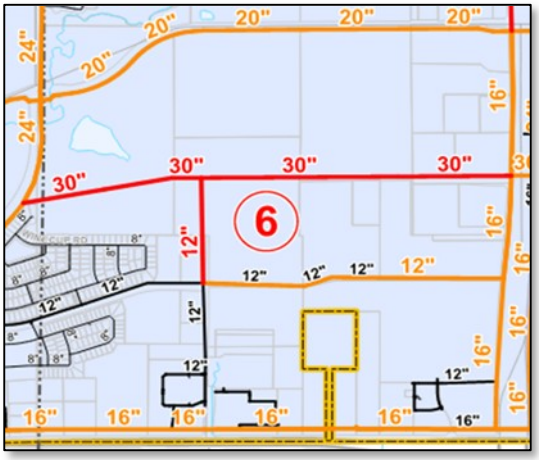
Project Description:

A 30-inch water line parallel to and south of First Street from Legacy Drive to Dallas Parkway, with a 12-inch water line connecting to the 30-inch line and ending at the intersection of Mahard Parkway and Prairie Drive.

Project Drivers:

This project will increase the delivery capacity to the Lower Pressure Plane, and increase transmission capacity to the Fishtrap EST.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	30" WL & Appurtenances	6,500	LF	$ 600	$ 3,900,000
2	12" WL & Appurtenances	1,500	LF	$ 240	$ 360,000
3	48" Boring and Casing	500	LF	$ 2,400	$ 1,200,000
4	Concrete Pavement Repair	1,300	LF	$ 100	$ 130,000
				SUBTOTAL:	**$ 5,590,000**
		CONTINGENCY		30%	$ 1,677,000
				SUBTOTAL:	**$ 7,267,000**
		ENG/SURVEY		15%	$ 1,090,100
				SUBTOTAL:	**$ 8,357,100**
				Estimated Project Total:	**$ 8,357,100**

Town of Prosper

Capital Improvement Cost Estimate — **June 20, 2025**

Construction Project Number: 7 — **Phase:** 5-Year

Project Name: First Street 12-inch Water Line

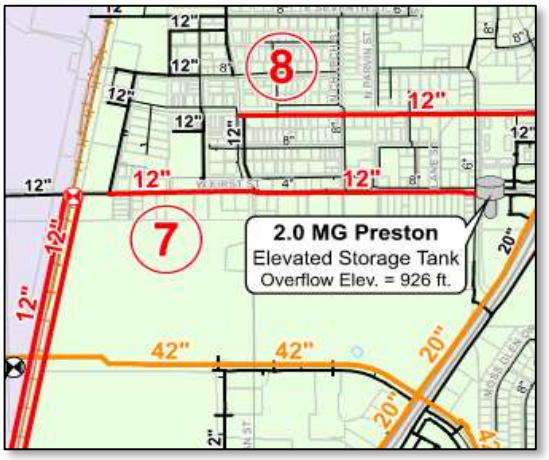
Project Description:

A 12-inch water line along First Street, from the 2.0 MG Preston elevated storage tank to South McKinley Street.

Project Drivers:

This project provides looping and redundancy in the Upper Pressure Plane.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" WL & Appurtenances	4,400	LF	$ 240	$ 1,056,000
2	Concrete Pavement Repair	4,400	LF	$ 100	$ 440,000
				SUBTOTAL:	**$ 1,496,000**
			CONTINGENCY	30%	$ 448,800
				SUBTOTAL:	**$ 1,944,800**
			ENG/SURVEY	15%	$ 291,800
				SUBTOTAL:	**$ 2,236,600**
				Estimated Project Total:	**$ 2,236,600**

Town of Prosper

Capital Improvement Cost Estimate — **June 20, 2025**

Construction Project Number: 8 — **Phase:** 5-Year

Project Name: East Broadway Street 12-inch Water Line

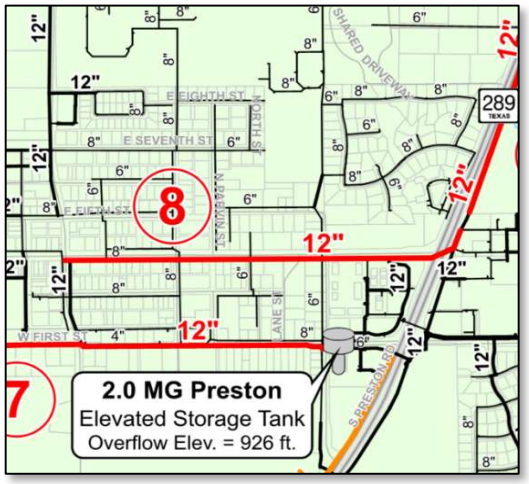
Project Description:

A 12-inch water line along East Broadway Street from Preston Road to Coleman Street.

Project Drivers:

This project provides looping and redundancy in the Upper Pressure Plane.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" WL & Appurtenances	4,300	LF	$ 240	$ 1,032,000
2	Concrete Pavement Repair	4,300	LF	$ 100	$ 430,000
				SUBTOTAL:	**$ 1,462,000**
				CONTINGENCY 30%	$ 438,600
				SUBTOTAL:	**$ 1,900,600**
				ENG/SURVEY 15%	$ 285,100
				SUBTOTAL:	**$ 2,185,700**
				Estimated Project Total:	**$ 2,185,700**

Town of Prosper

Capital Improvement Cost Estimate — **June 20, 2025**

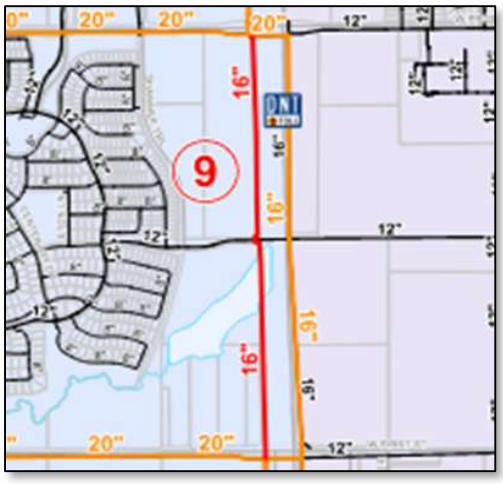
Construction Project Number: 9 — **Phase:** 5-Year

Project Name: Dallas Parkway 16-inch Water Line

Project Description:

A 16-inch water line along Dallas Parkway from Prosper Trail to First Street.

Vicinity Map



Project Drivers:

This project will help establish gridding the eastern portion of the Lower Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	5,900	LF	$ 320	$ 1,888,000
2	30" Boring and Casing	300	LF	$ 1,500	$ 450,000
3	Concrete Pavement Repair	5,600	LF	$ 100	$ 560,000
				SUBTOTAL:	**$ 2,898,000**
		CONTINGENCY		30%	$ 869,400
				SUBTOTAL:	**$ 3,767,400**
		ENG/SURVEY		15%	$ 565,200
				SUBTOTAL:	**$ 4,332,600**
				Estimated Project Total:	**$ 4,332,600**

Town of Prosper

Capital Improvement Cost Estimate	**June 20, 2025**
Construction Project Number: 10	**Phase: 10-Year**
Project Name:	**1.5 MG Prosper Road Elevated Storage Tank**

Project Description:

A 1.5 MG elevated storage tank located at the intersection of Carnegie Mellon Drive and Prosper Road, with a 30-inch line connecting the tank to the 24-inch line under design along Prosper Road.

Project Drivers:

This project will provide elevated storage, fire flow volume, and help maintain pressure in the Lower Pressure Plane during peak hour demands.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	1.5 MG Elevated Storage Tank	1	LS	$ 7,500,000	$ 7,500,000
2	30" WL & Appurtenances	300	LF	$ 600	$ 180,000
				SUBTOTAL:	**$ 7,680,000**
				CONTINGENCY 30%	$ 2,304,000
				SUBTOTAL:	**$ 9,984,000**
				ENG/SURVEY 15%	$ 1,497,600
				SUBTOTAL:	**$ 11,481,600**
				Estimated Project Total:	**$ 11,481,600**

Town of Prosper

Capital Improvement Cost Estimate — **June 20, 2025**

Construction Project Number: 11 — **Phase:** 10-Year

Project Name: Legacy Drive 12- to 24-inch Water Line

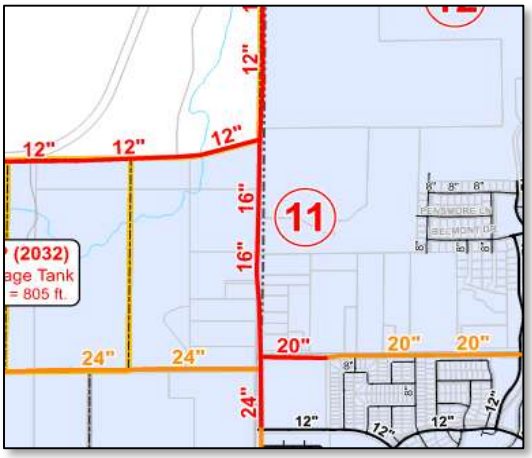
Project Description:

A 12- to 24-inch water line along Legacy Drive from Frontier Parkway to Star Meadow Drive, with a 20-inch water line connecting at West Prosper Trail.

Project Drivers:

This project helps complete looping around the perimeter of the Lower Pressure Plane.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	24" WL & Appurtenances	1,100	LF	$ 480	$ 528,000
2	20" WL & Appurtenances	1,000	LF	$ 400	$ 400,000
3	16" WL & Appurtenances	3,200	LF	$ 320	$ 1,024,000
4	12" WL & Appurtenances	3,300	LF	$ 240	$ 792,000
5	Concrete Pavement Repair	8,600	LF	$ 100	$ 860,000
				SUBTOTAL:	**$ 3,604,000**
				CONTINGENCY 30%	$ 1,081,200
				SUBTOTAL:	**$ 4,685,200**
				ENG/SURVEY 15%	$ 702,800
				SUBTOTAL:	**$ 5,388,000**
				Estimated Project Total:	**$ 5,388,000**

Town of Prosper

Capital Improvement Cost Estimate — **June 20, 2025**

Construction Project Number: 12 — **Phase:** 10-Year

Project Name: Frontier Parkway 12-inch Water Line

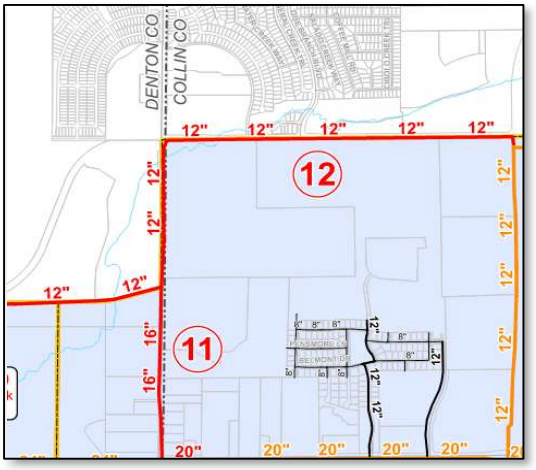
Project Description:

A 12-inch water line along Frontier Parkway from Legacy Drive to Dallas Parkway.

Project Drivers:

This project helps complete looping around the perimeter of the Lower Pressure Plane.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" WL & Appurtenances	6,300	LF	$ 240	$ 1,512,000
2	20" Boring and Casing	200	LF	$ 1,000	$ 200,000
3	Concrete Pavement Repair	6,100	LF	$ 100	$ 610,000
				SUBTOTAL:	**$ 2,322,000**
		CONTINGENCY		30%	$ 696,600
				SUBTOTAL:	**$ 3,018,600**
		ENG/SURVEY		15%	$ 452,800
				SUBTOTAL:	**$ 3,471,400**
				Estimated Project Total:	**$ 3,471,400**

Town of Prosper

Capital Improvement Cost Estimate — **June 20, 2025**

Construction Project Number: 13 — **Phase:** 10-Year

Project Name: Parvin Road 12- and 16-inch Water Line

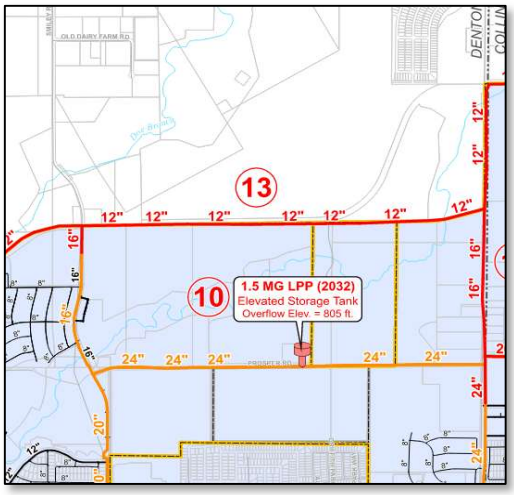
Project Description:

A 12-inch water line along Parvin Road from Legacy Drive to North Teel Parkway and a 16-inch water line connecting at Teel Parkway.

Project Drivers:

This project helps complete looping around the perimeter of the Lower Pressure Plane.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	16" WL & Appurtenances	600	LF	$ 320	$ 192,000
2	12" WL & Appurtenances	8,300	LF	$ 240	$ 1,992,000
3	20" Boring and Casing	300	LF	$ 1,000	$ 300,000
4	Concrete Pavement Repair	8,600	LF	$ 100	$ 860,000
				SUBTOTAL:	**$ 3,344,000**
		CONTINGENCY		30%	$ 1,003,200
				SUBTOTAL:	**$ 4,347,200**
		ENG/SURVEY		15%	$ 652,100
				SUBTOTAL:	**$ 4,999,300**
				Estimated Project Total:	**$ 4,999,300**

Town of Prosper

Capital Improvement Cost Estimate — **June 20, 2025**

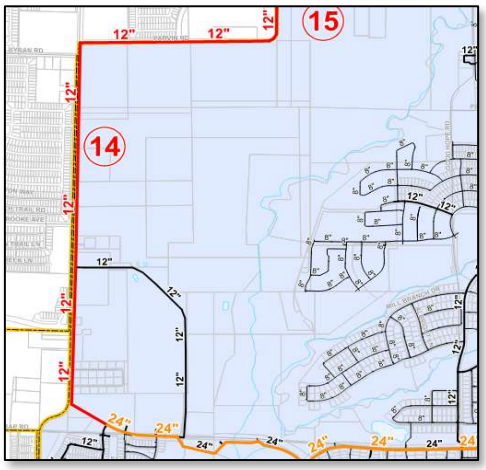
Construction Project Number: 14 — **Phase:** 10-Year

Project Name: FM 1385 12-inch Water Line

Project Description:

A 12-inch water line along FM 1385 from Parvin Road to Fishtrap Road.

Vicinity Map



Project Drivers:

This project helps complete looping around the perimeter of the Lower Pressure Plane.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" WL & Appurtenances	8,600	LF	$ 240	$ 2,064,000
2	Concrete Pavement Repair	8,600	LF	$ 100	$ 860,000
				SUBTOTAL:	**$ 2,924,000**
			CONTINGENCY	30%	$ 877,200
				SUBTOTAL:	**$ 3,801,200**
			ENG/SURVEY	15%	$ 570,200
				SUBTOTAL:	**$ 4,371,400**
				Estimated Project Total:	**$ 4,371,400**

Town of Prosper

Capital Improvement Cost Estimate	**June 20, 2025**
Construction Project Number: 15	**Phase: 10-Year**
Project Name:	**Parvin Road 12-inch Water Line**

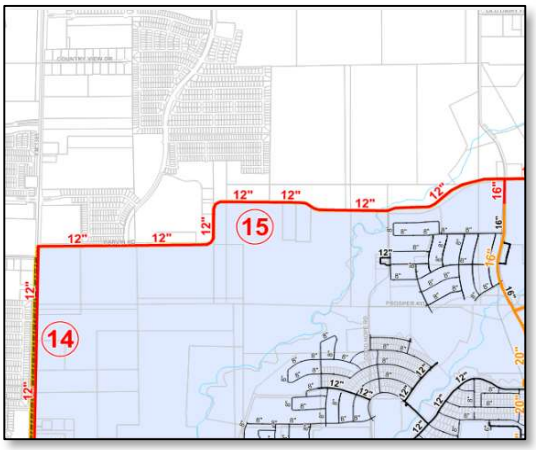
Project Description:

A 12-inch water line along Parvin Road from North Teel Parkway to FM 1385.

Project Drivers:

This project helps complete looping around the perimeter of the Lower Pressure Plane.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	12" WL & Appurtenances	11,900	LF	$ 240	$ 2,856,000
2	20" Boring and Casing	200	LF	$ 1,000	$ 200,000
3	Concrete Pavement Repair	11,700	LF	$ 100	$ 1,170,000
				SUBTOTAL:	**$ 4,226,000**
		CONTINGENCY		30%	$ 1,267,800
				SUBTOTAL:	**$ 5,493,800**
		ENG/SURVEY		15%	$ 824,100
				SUBTOTAL:	**$ 6,317,900**
				Estimated Project Total:	**$ 6,317,900**

Town of Prosper

Capital Improvement Cost Estimate	**June 20, 2025**
Construction Project Number: 16	**Phase: Buildout**
Project Name:	**Expand LPP Firm Pumping Capacity to 40 MGD**

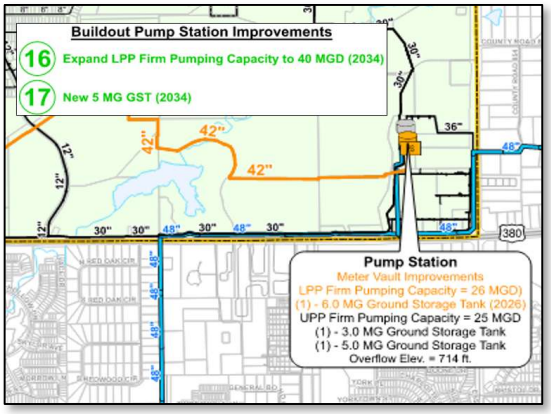
Project Description:

An expension of the Lower Pressure Plane pumping capacity to 40 MGD.

Project Drivers:

This project will increase the pumping capacity to the Lower Pressure Plane.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Pump Station - Expansion 14 MGD	1	LS	$ 2,250,000	$ 2,250,000
				SUBTOTAL:	**$ 2,250,000**
		CONTINGENCY		30%	$ 675,000
				SUBTOTAL:	**$ 2,925,000**
		ENG/SURVEY		15%	$ 438,800
				SUBTOTAL:	**$ 3,363,800**
				Estimated Project Total:	**$ 3,363,800**

Town of Prosper

Capital Improvement Cost Estimate — **June 20, 2025**

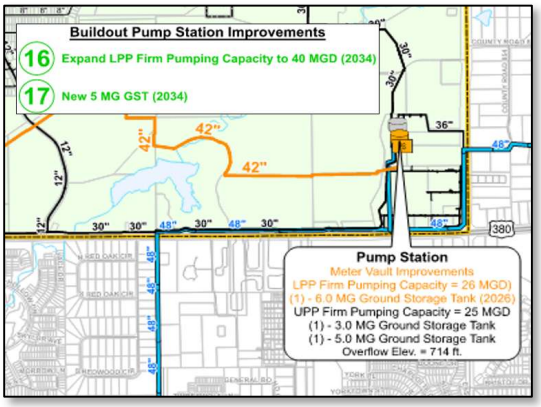
Construction Project Number: 17 — **Phase:** Buildout

Project Name: New 5 MG GST

Project Description:

A 5 MG ground storage tank located at the existing pump station off of North Custer Road.

Vicinity Map



Project Drivers:

This project will provide ground storage storage, fire flow volume, and help maintain pressure during peak hour demands.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	5.0 MG Ground Storage Tank	1	LS	$ 7,500,000	$ 7,500,000
				SUBTOTAL:	**$ 7,500,000**
		CONTINGENCY		30%	$ 2,250,000
				SUBTOTAL:	**$ 9,750,000**
		ENG/SURVEY		15%	$ 1,462,500
				SUBTOTAL:	**$ 11,212,500**
				Estimated Project Total:	**$ 11,212,500**

Appendix E
Wastewater System Project Cost Estimates

Town of Prosper

Capital Improvement Cost Estimate — **June 27, 2025**

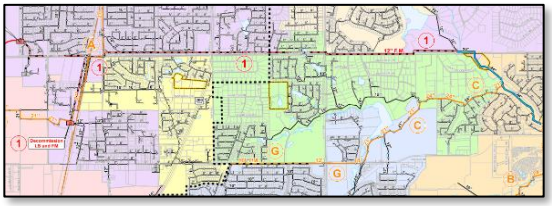
Construction Project Number: 1 — **Phase:** 5-Year

Project Name: WWTP Lift Station and Force Main Decommissioning

Project Description:

Decommission WWTP Lift Station and downstream force main.

Vicinity Map



Project Drivers:

This project will decommission the WWTP Lift Station and downstream force main. Flow will instead be conveyed through the 21-inch line under design that will convey flow to UTRWD.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	Decommission Lift Station	1	LS	$ 200,000	$ 200,000
				SUBTOTAL:	**$ 200,000**
		CONTINGENCY		30%	$ 60,000
				SUBTOTAL:	**$ 260,000**
		ENG/SURVEY		15%	$ 39,000
				SUBTOTAL:	**$ 299,000**
				Estimated Project Total:	**$ 299,000**

Town of Prosper

Capital Improvement Cost Estimate	**June 27, 2025**
Construction Project Number: 2	**Phase: 5-Year**
Project Name:	**South Rutherford Branch Creek 10-inch Trunk Line**

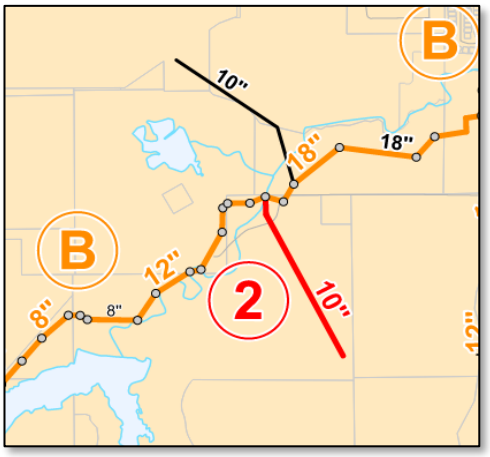
Project Description:

A 10-inch interceptor south of Rutherford Branch Creek.

Project Drivers:

This project will serve projected residential growth in this area, conveying flow to NTMWD.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	10" Pipe	2,000	LF	$ 250	$ 500,000
2	Concrete Pavement Repair	100	LF	$ 100	$ 10,000
				SUBTOTAL:	**$ 510,000**
		CONTINGENCY		30%	$ 153,000
				SUBTOTAL:	**$ 663,000**
		ENG/SURVEY		15%	$ 99,500
				SUBTOTAL:	**$ 762,500**
				Estimated Project Total:	**$ 762,500**

Town of Prosper

Capital Improvement Cost Estimate	**June 27, 2025**
Construction Project Number: 3	**Phase: 5-Year**
Project Name:	**New 10-inch Trunk Line to Under-Design 30-inch Interceptor**

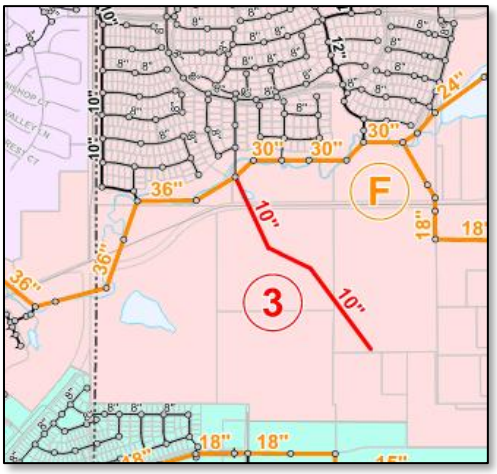
Project Description:

A 10-inch interceptor originating south of West First Street and connecting to the 30-inch interceptor currently under design.

Project Drivers:

This project will serve projected residential growth in this area, conveying flow to UTRWD.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	10" Pipe	3,400	LF	$ 250	$ 850,000
2	Concrete Pavement Repair	200	LF	$ 100	$ 20,000
				SUBTOTAL:	**$ 870,000**
		CONTINGENCY		30%	$ 261,000
				SUBTOTAL:	**$ 1,131,000**
		ENG/SURVEY		15%	$ 169,700
				SUBTOTAL:	**$ 1,300,700**
				Estimated Project Total:	**$ 1,300,700**

Town of Prosper

Capital Improvement Cost Estimate	**June 27, 2025**
Construction Project Number: 4	**Phase: 5-Year**
Project Name:	**Glenbrooke 10-inch Interceptor**

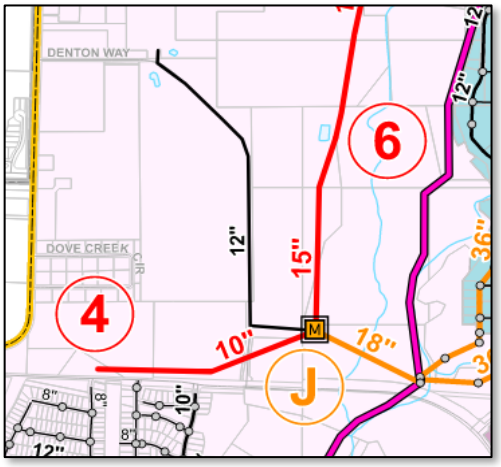
Project Description:

A 10-inch interceptor north of the Glenbrooke subdivision conveying flow to the interceptor under design in Project M.

Project Drivers:

This project will serve projected non-residential growth in this area, conveying flow to UTRWD.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	10" Pipe	2,500	LF	$ 250	$ 625,000
2	Concrete Pavement Repair	100	LF	$ 100	$ 10,000
				SUBTOTAL:	**$ 635,000**
		CONTINGENCY		30%	$ 190,500
				SUBTOTAL:	**$ 825,500**
		ENG/SURVEY		15%	$ 123,900
				SUBTOTAL:	**$ 949,400**
				Estimated Project Total:	**$ 949,400**

Town of Prosper

Capital Improvement Cost Estimate — **June 27, 2025**

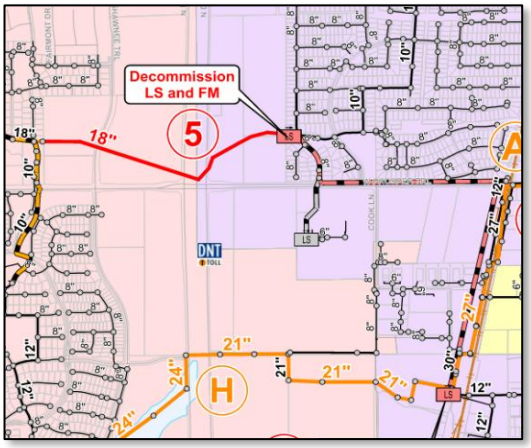
Construction Project Number: 5 — **Phase:** 5-Year

Project Name: Lakes of Prosper Lift Station Decommissioning and 18-inch Interceptor

Project Description:

An 18-inch interceptor originating at the existing Lakes of Prosper Lift Station, and connecting to an 18-inch line under design.

Vicinity Map



Project Drivers:

This project will serve projected residential and non-residential development, and will convey flow to UTRWD. This project will also decommission the existing Lakes of Prosper Lift Station.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	18" Pipe	4,500	LF	$ 450	$ 2,025,000
2	Decommission Lift Station	1	LS	$ 25,000	$ 25,000
3	32" Boring and Casing	600	LF	$ 1,600	$ 960,000
4	Concrete Pavement Repair	100	LF	$ 100	$ 10,000
				SUBTOTAL:	**$ 3,020,000**
			CONTINGENCY	30%	$ 906,000
				SUBTOTAL:	**$ 3,926,000**
			ENG/SURVEY	15%	$ 588,900
				SUBTOTAL:	**$ 4,514,900**
				Estimated Project Total:	**$ 4,514,900**

Town of Prosper

Capital Improvement Cost Estimate — **June 27, 2025**

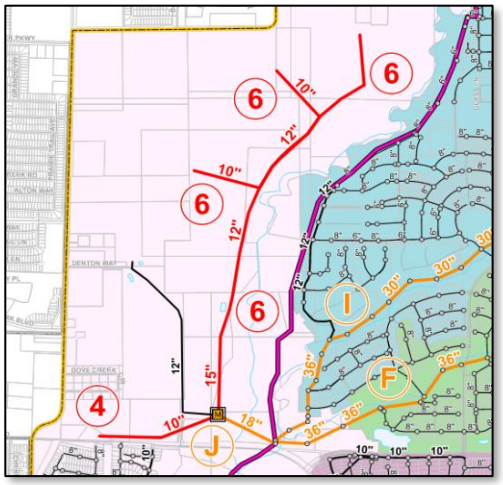
Construction Project Number: 6 — **Phase:** 5-Year

Project Name: Doe Branch 10- to 15-inch Lines

Project Description:

10- to 15-inch wastewater lines along Doe Branch tying into the UTRWD Doe Branch interceptor.

Vicinity Map



Project Drivers:

This project will parallel the existing UTRWD Doe Branch interceptor and serve projected residential and non-residential development in northwest Prosper, conveying flow to UTRWD.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	15" Pipe	2,200	LF	$ 375	$ 825,000
2	12" Pipe	4,500	LF	$ 300	$ 1,350,000
3	10" Pipe	4,800	LF	$ 250	$ 1,200,000
4	20" Boring and Casing	400	LF	$ 1,000	$ 400,000
				SUBTOTAL:	**$ 3,775,000**
		CONTINGENCY		30%	$ 1,132,500
				SUBTOTAL:	**$ 4,907,500**
		ENG/SURVEY		15%	$ 736,200
				SUBTOTAL:	**$ 5,643,700**
				Estimated Project Total:	**$ 5,643,700**

Town of Prosper

Capital Improvement Cost Estimate	**June 27, 2025**
Construction Project Number: 7	**Phase: 10-Year**
Project Name:	**University Drive and Dallas Parkway 12- and 15-inch Interceptor**

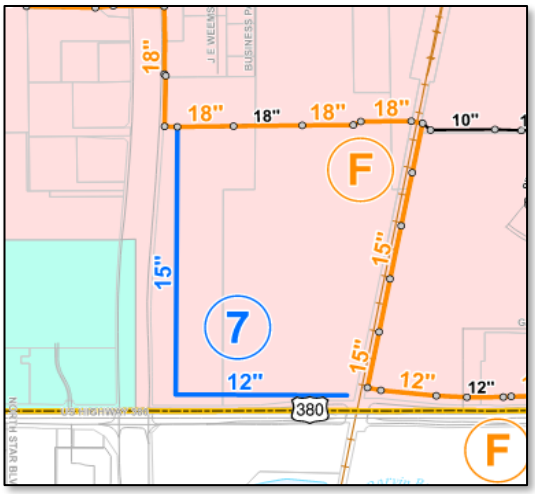
Project Description:

A 12- and 15-inch interceptor originating near the BNSF railway and conveying flow to the 18-inch interceptor currently under design.

Project Drivers:

This project will serve projected residential growth in this area, conveying flow to UTRWD.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	15" Pipe	3,600	LF	$ 375	$ 1,350,000
2	12" Pipe	2,200	LF	$ 300	$ 660,000
				SUBTOTAL:	**$ 2,010,000**
		CONTINGENCY		30%	$ 603,000
				SUBTOTAL:	**$ 2,613,000**
		ENG/SURVEY		15%	$ 392,000
				SUBTOTAL:	**$ 3,005,000**
				Estimated Project Total:	**$ 3,005,000**

Town of Prosper

Capital Improvement Cost Estimate — **June 27, 2025**

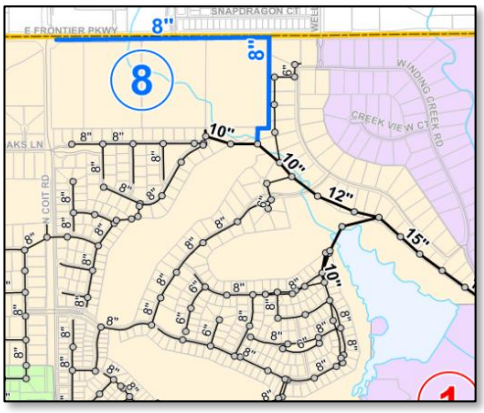
Construction Project Number: 8 — **Phase:** 10-Year

Project Name: Gentle Creek 8-inch Gravity Main

Project Description:

An 8-inch gravity main originating near Frontier Parkway along Wilson Creek and connecting to an existing 10-inch interceptor.

Vicinity Map



Project Drivers:

This project will serve projected residential growth in this area, conveying flow to NTMWD.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	8" Pipe	4,600	LF	$ 200	$ 920,000
2	Concrete Pavement Repair	2,900	LF	$ 100	$ 290,000
				SUBTOTAL:	**$ 1,210,000**
		CONTINGENCY		30%	$ 363,000
				SUBTOTAL:	**$ 1,573,000**
		ENG/SURVEY		15%	$ 236,000
				SUBTOTAL:	**$ 1,809,000**
				Estimated Project Total:	**$ 1,809,000**

Town of Prosper

Capital Improvement Cost Estimate	**June 27, 2025**
Construction Project Number: 9	**Phase: Buildout**
Project Name:	**Cedar Ridge Estates and Whispering Farms 10-inch Interceptors**

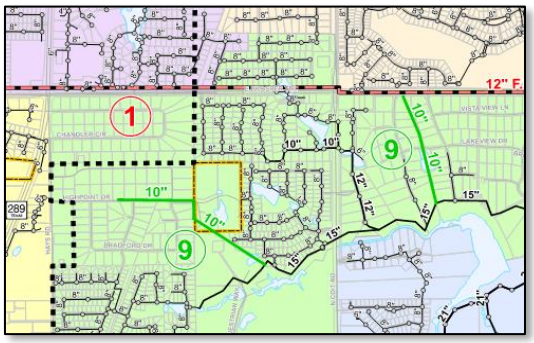
Project Description:

Two 10-inch interceptors near the Cedar Ridge Estates and Whispering Farms neighborhoods.

Project Drivers:

This project will facilitate the conversion of existing septic systems to Town wastewater service.

Vicinity Map



Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	10" Pipe	6,100	LF	$ 250	$ 1,525,000
2	18" Boring and Casing	500	LF	$ 900	$ 450,000
3	Concrete Pavement Repair	1,600	LF	$ 100	$ 160,000
				SUBTOTAL:	**$ 2,135,000**
		CONTINGENCY		30%	$ 640,500
				SUBTOTAL:	**$ 2,775,500**
		ENG/SURVEY		15%	$ 416,400
				SUBTOTAL:	**$ 3,191,900**
				Estimated Project Total:	**$ 3,191,900**

Town of Prosper

Capital Improvement Cost Estimate — **June 27, 2025**

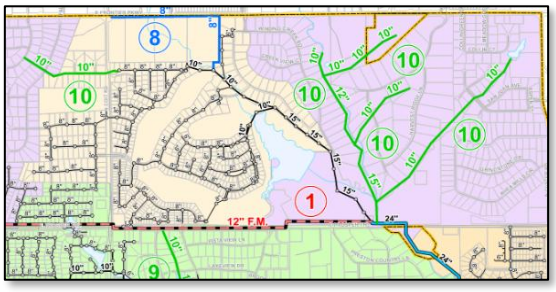
Construction Project Number: 10 — **Phase:** Buildout

Project Name: Wilson Creek 10- to 15-inch Interceptors

Project Description:

10- to 15-inch interceptors in the north eastern portion of Prosper. This project also includes a separate 10-inch trunk line along Fair Oaks Lane.

Vicinity Map



Project Drivers:

This project will facilitate the conversion of existing septic systems to Town wastewater service.

Opinion of Probable Construction Cost

ITEM	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	TOTAL
1	15" Pipe	2,400	LF	$ 375	$ 900,000
2	12" Pipe	2,200	LF	$ 300	$ 660,000
3	10" Pipe	13,300	LF	$ 250	$ 3,325,000
4	18" Boring and Casing	700	LF	$ 900	$ 630,000
5	Concrete Pavement Repair	2,900	LF	$ 100	$ 290,000
				SUBTOTAL:	**$ 5,805,000**
		CONTINGENCY		30%	$ 1,741,500
				SUBTOTAL:	**$ 7,546,500**
		ENG/SURVEY		15%	$ 1,132,000
				SUBTOTAL:	**$ 8,678,500**
				Estimated Project Total:	**$ 8,678,500**

Appendix F
Roadway Project Cost Estimates

Serv Area	Reference CIP No.	Roadway	From	To	Project Status	Length (mi)	Added Lanes	Thoroughfare Plan Description	Pct.in Serv. Area	Roadway Project Costs Engineering	ROW	Construction	Signal	Total Project Cost
1	1-Gee-a	Gee Rd	0.187 mi N of US 380	First St	Recoup	0.65	2	Major Thoroughfare	100%	$136,800	$0	$1,812,600	$0	$1,949,400
1	1-Gee-b	Gee Rd	0.187 mi N of US 380	First St	New	0.65	2	Major Thoroughfare	100%	$419,600	$0	$3,227,700	$319,108	$3,966,408
1	1-Gee-c	Gee Rd	US 380	0.187 mi N of US 380	New	0.07	2	Major Thoroughfare	100%	$46,100	$0	$354,600	$35,058	$435,758
1	1-Gee-d	Gee Rd	First St	FM 1385	New	0.97	4	Major Thoroughfare	100%	$2,572,200	$0	$19,786,000	$1,956,153	$24,314,353
1	1-Tel-a	Teel Pkwy	US 380	671ft N of US 380	Recoup	0.17	2	Major Thoroughfare	100%	$24,685	$0	$282,247	$0	$306,932
1	1-Tel-c	Teel Pkwy	First St	314 ft S of First St	Recoup	0.05	2	Major Thoroughfare	100%	$7,260	$0	$83,014	$0	$90,274
1	1-Tel-b	Teel Pkwy	87 ft N of US 380	314 ft S of First St	Recoup	0.51	2	Major Thoroughfare	100%	$74,055	$0	$846,740	$0	$920,795
1	1-Tel-d	Teel Pkwy	US 380	First St	New	0.73	2	Major Thoroughfare	100%	$469,900	$0	$3,614,600	$357,359	$4,441,859
1	1-Tel-e	Teel Pkwy	First St	381 ft N of Roundtree Dr	New	0.56	2	Major Thoroughfare	100%	$807,500	$0	$6,211,200	$614,073	$7,632,773
1	1-Tel-f	Teel Pkwy	88 ft N of N Windsong Pkwy	381 ft N of Roundtree Dr	Recoup	0.36	2	Major Thoroughfare	100%	$77,100	$0	$592,765	$0	$669,865
1	1-Tel-g	Teel Pkwy	88 ft N of N Windsong Pkwy	Prosper Trl	New	0.30	2	Major Thoroughfare	100%	$192,800	$0	$1,483,300	$146,647	$1,822,747
1	1-Tel-h	Teel Pkwy	First St	Parvin Rd	New	1.77	2	Major Thoroughfare	100%	$731,100	$0	$5,623,500	$555,970	$6,910,570
1	1-Tel-i	Teel Pkwy	Prosper Trl	Parvin Rd	New	1.23	2	Major Thoroughfare	100%	$901,600	$0	$6,935,000	$685,632	$8,522,232
1	1-Lgy-b	Legacy Dr	Scarlet	First St	New	0.41	4	Major Thoroughfare	100%	$1,415,100	$0	$10,885,600	$1,076,210	$13,376,910
1	1-Lgy-a	Legacy Dr	US 380	Scarlet Dr	Recoup	0.60	4	Major Thoroughfare	100%	$72,000	$0	$553,627	$0	$625,627
1	1-Lgy-c	Legacy Dr	US 380	First St	New	1.00	2	Major Thoroughfare	100%	$386,400	$0	$2,972,500	$293,878	$3,652,778
1	1-Lgy-f	Legacy Dr	Prosper Trl	Parvin Rd	New	0.57	2	Major Thoroughfare	100%	$419,400	$0	$3,225,900	$318,930	$3,964,230
1	1-Lgy-g	Legacy Dr	Prosper Trl	Parvin Rd	New	0.57	2	Major Thoroughfare	100%	$236,800	$0	$1,821,600	$180,093	$2,238,493
1/X	1-Lgy-h	Legacy Dr	Parvin Rd	Frontier Pkwy	New	0.47	2	Major Thoroughfare	50%	$173,000	$0	$1,330,700	$131,560	$1,635,260
1/X	1-Lgy-i	Legacy Dr	Parvin Rd	Frontier Pkwy	New	0.47	2	Major Thoroughfare	50%	$97,750	$0	$751,750	$74,322	$923,822
1	1-Lgy-d	Legacy Dr	First St	Prosper Trl	New	1.09	2	Major Thoroughfare	100%	$799,000	$0	$6,146,300	$607,657	$7,552,957
1	1-Lgy-e	Legacy Dr	First St	Prosper Trl	New	1.09	2	Major Thoroughfare	100%	$450,500	$0	$3,465,400	$342,608	$4,258,508
1	1-Rd-a	New Road A	US 380	First St	New	1.01	2	Commercial Collector	100%	$626,900	$0	$4,822,300	$476,759	$5,925,959
1	1-Rd-c	New Road C	New Road B	Greenwood Memorial Dr	New	0.31	3	Commercial Collector	100%	$345,300	$0	$2,655,900	$262,577	$3,263,777
1	1-Rd-b	New Road B	Prosper Trl	Frontier Pkwy	New	1.01	2	Commercial Collector	100%	$626,900	$0	$4,822,300	$476,759	$5,925,959
1/X	1-Pvn-a	Parvin Rd	FM 1385	0.61 mi W of Legacy Drive	New	2.84	2	Major Thoroughfare	50%	$1,038,700	$0	$7,990,100	$789,945	$9,818,745
1/X	1-Pvn-b	Parvin Rd	FM 1385	0.61 mi W of Legacy Drive	New	2.84	2	Major Thoroughfare	50%	$585,000	$0	$4,500,000	$444,895	$5,529,895
1/X	1-FP-a	Frontier Pkwy	Legacy Dr	DNT	New	1.08	2	Major Thoroughfare	50%	$506,900	$0	$3,899,400	$385,516	$4,791,816
1/X	1-FP-b	Frontier Pkwy	Legacy Dr	DNT	New	1.08	2	Major Thoroughfare	50%	$252,000	$0	$1,938,400	$191,641	$2,382,041
1/X	1-FP-c	Frontier Pkwy	DNT	BNSF RR	Recoup	1.08	2	Major Thoroughfare	50%	$0	$0	$1,833,000	$0	$1,833,000
1/X	1-FP-d	Frontier Pkwy	DNT	BNSF RR	New	1.08	2	Major Thoroughfare	50%	$223,750	$0	$1,721,100	$170,157	$2,115,007
1	1-MP-a	Mahard Pkwy	US 380	Prairie Dr	Recoup	0.36	4	Major Thoroughfare	100%	$69,400	$0	$533,528	$0	$602,928
1	1-MP-b	Mahard Pkwy	Prairie Dr	500 N of Prairie Dr	Recoup	0.10	2	Major Thoroughfare	100%	$0	$0	$594,948	$0	$594,948
1	1-MP-c	Mahard Pkwy	Prairie Dr	500 N of Prairie Dr	New	0.10	2	Major Thoroughfare	100%	$76,300	$0	$586,700	$58,004	$721,004
1	1-MP-d	Mahard Pkwy	500 N of Prairie Dr	Lovers Lane	New	0.13	4	Major Thoroughfare	100%	$139,100	$0	$1,070,200	$105,806	$1,315,106
1	1-Saf-a	Safety Way	DNT	Mike Howard	Recoup	0.48	2	Commercial Collector	100%	$187,300	$0	$1,440,959	$0	$1,628,259
1	1-PT-a	Prosper Trl	Teel Pkwy	2550' E of Teel Pkwy	New	0.77	2	Minor Thoroughfare	100%	$551,800	$0	$4,244,400	$419,625	$5,215,825
1	1-PT-b	Prosper Trl	1617' E of Teel Pkwy	3149' E of Teel Pkwy	New	0.29	2	Minor Thoroughfare	100%	$208,800	$0	$1,605,800	$158,758	$1,973,358
1	1-PT-c	Prosper Trl	3149' E of Teel Pkwy	Legacy Dr	New	0.30	2	Minor Thoroughfare	100%	$198,000	$0	$1,522,800	$150,552	$1,871,352
1	1-PT-d	Prosper Trl	Legacy Dr	DNT	New	1.09	2	Minor Thoroughfare	100%	$595,200	$0	$4,578,100	$452,616	$5,625,916
1	1-PT-e	Prosper Trl	DNT	BNSF RR	Recoup	0.88	2	Minor Thoroughfare	100%	$0	$0	$1,148,752	$0	$1,148,752
1	1-1st-a	First St	Gee Rd	Teel Pkwy	Recoup	1.19	2	Minor Thoroughfare	100%	$140,000	$0	$2,726,000	$0	$2,866,000
1	1-1st-b	First St	Teel Pkwy	Stuber E.S.	Recoup	1.01	2	Minor Thoroughfare	100%	$551,460	$266,177	$2,757,300	$0	$3,574,937
1	1-1st-c	First St	Stuber E.S.	DNT	New	1.41	2	Minor Thoroughfare	100%	$1,008,900	$0	$7,761,000	$767,295	$9,537,195
1	1-1st-d	First St	DNT	BNSF RR	New	0.68	2	Minor Thoroughfare	100%	$486,400	$0	$3,741,700	$369,925	$4,598,025
1	1-PD-a	Prairie Dr	Teel Pkwy	290 ft W of Waters Edge Way	New	0.52	4	Minor Thoroughfare	100%	$576,300	$0	$4,433,400	$438,310	$5,448,010
1	1-PD-b	Prairie Dr	290 ft W of Waters Edge Way	Shawnee Trl	Recoup	1.64	4	Minor Thoroughfare	100%	$0	$0	$4,523,471	$0	$4,523,471
1	1-ST-c	Shawnee Trl	Star Trace Pkwy	982 ft N of Caruth Dr	Recoup	1.09	2	Minor Thoroughfare	100%	$458,600	$0	$3,527,839	$0	$3,986,439
1	1-ST-b	Shawnee Trl	Lovers Lane	Star Trace Pkwy	New	0.88	4	Minor Thoroughfare	100%	$973,000	$0	$7,484,700	$739,979	$9,197,679
1	1-ST-d	Shawnee Trl	Star Trace Pkwy	982 ft N of Caruth Dr	New	1.09	2	Minor Thoroughfare	100%	$622,600	$0	$4,789,600	$473,526	$5,885,726
1	1-ST-e	Shawnee Trl	982 ft N of Caruth Dr	Frontier Pkwy	New	0.46	4	Minor Thoroughfare	100%	$509,400	$0	$3,918,700	$387,424	$4,815,524
1	1-LL-b	Lovers Lane	DNT	BNSF RR	New	0.59	4	Minor Thoroughfare	100%	$654,300	$0	$5,033,100	$497,600	$6,185,000
1	1-LL-a	Lovers Lane	Mahard Pkwy	DNT	New	0.72	4	Minor Thoroughfare	100%	$796,900	$0	$6,130,300	$606,075	$7,533,275
1	1-Mik-a	Mike Howard	First St	1,200 ft S of Prosper Trl	Recoup	0.76	2	Commercial Collector	100%	$0	$0	$1,550,000	$0	$1,550,000
Sub-total SA 1						43.16				**$23,519,860**	**$266,177**	**$191,892,439**	**$16,519,006**	**$232,197,483**

Serv Area	Reference CIP No.	Roadway	From	To	Project Status	Length (mi)	Added Lanes	Thoroughfare Plan Description	Pct.in Serv. Area	Roadway Project Costs Engineering	ROW	Construction	Signal	Total Project Cost
2	2-Ct-a	Coit Rd	US 380	First St	New	1.01	2	Major Thoroughfare	100%	$417,872	$0	$3,214,400	$317,793	$3,950,065
2	2-Ct-b	Coit Rd	First St	Frontier Pkwy	New	2.00	2	Major Thoroughfare	100%	$1,436,214	$0	$11,047,800	$1,092,246	$13,576,260
2	2-Ct-c	Coit Rd	First St	Frontier Pkwy	New	2.00	2	Major Thoroughfare	100%	$824,577	$0	$6,342,900	$627,094	$7,794,571
2/X	2-FP-a	Frontier Pkwy	BNSF RR	Preston Rd	Recoup	1.01	2	Major Thoroughfare	50%	$0	$0	$3,650,000	$0	$3,650,000
2/X	2-FP-b	Frontier Pkwy	BNSF RR	Preston Rd	New	1.01	2	Major Thoroughfare	50%	$332,287	$0	$2,556,050	$252,705	$3,141,042
2	2-PT -a	Prosper Trl	BNSF RR	Preston Rd	Recoup	1.11	2	Minor Thoroughfare	100%	$175,310	$0	$1,348,535	$0	$1,523,845
2	2-PT -c	Prosper Trl	560' E of Preston Rd	Coit Rd	Recoup	0.83	2	Minor Thoroughfare	100%	$234,208	$0	$4,158,217	$0	$4,392,425
2	2-PT -b	Prosper Trl	560' E of Preston Rd	Preston Rd	Recoup	0.18	2	Minor Thoroughfare	100%	$50,792	$0	$901,782	$0	$952,574
2	2-PT -d	Prosper Trl	864' E of Coit Rd	Custer Rd	New	1.76	2	Minor Thoroughfare	100%	$1,307,007	$0	$10,053,900	$993,984	$12,354,891
2	2-1st-a	First St	BNSF RR	N Coleman St	New	0.37	2	Minor Thoroughfare	100%	$263,674	$0	$2,029,800	$200,677	$2,494,351
2	2-1st-b	First St	N Coleman St	Craig St	New	0.46	2	Minor Thoroughfare	100%	$332,007	$0	$2,553,900	$252,493	$3,138,400
2	2-1st-c	First St	Craig St	Coit Rd	Recoup	1.51	2	Minor Thoroughfare	100%	$0	$0	$2,589,861	$0	$2,589,861
2	2-1st-d	First St	Coit Rd	Custer Rd	Recoup	2.06	2	Minor Thoroughfare	100%	$1,778,640	$649,800	$8,893,200	$0	$11,321,640
2	2-RB-a	Richland Blvd	Coleman	Lovers Lane	Recoup	0.56	4	Minor Thoroughfare	100%	$551,675	$0	$4,243,652	$0	$4,795,327
2	2-RB-b	Richland Blvd	Lovers Lane	287' W of La Cima	New	0.37	4	Minor Thoroughfare	100%	$410,878	$0	$3,160,600	$312,474	$3,883,952
2	2-RB-c	Richland Blvd	287' W of La Cima	160' E of La Cima	Recoup	0.41	4	Minor Thoroughfare	100%	$268,177	$385,773	$1,340,866	$0	$1,994,836
2	2-RB-d	Richland Blvd	160' E of La Cima	Prosper Commons	New	0.45	4	Minor Thoroughfare	100%	$498,147	$0	$3,831,900	$378,843	$4,708,890
2	2-Col-a	Coleman St	Richland Blvd	Lovers Lane	Recoup	0.27	2	Minor Thoroughfare	100%	$265,986	$0	$2,046,046	$0	$2,312,032
2	2-Col-b	Coleman St	Lovers Lane	First St	New	0.38	2	Minor Thoroughfare	100%	$242,437	$0	$1,864,900	$184,374	$2,291,711
2	2-Col-c	Coleman St	Gorgeous Rd	Prosper Trl	New	0.50	2	Minor Thoroughfare	100%	$318,084	$0	$2,446,800	$241,904	$3,006,788
2	2-Col-d	Coleman St	Prosper Trl	Talon	New	0.61	2	Minor Thoroughfare	100%	$387,933	$0	$2,984,100	$295,025	$3,667,058
2	2-Col-e	Coleman St	Talon	Victory Way	Recoup	0.46	2	Minor Thoroughfare	100%	$0	$0	$500,000	$0	$500,000
2	2-Col-f	Coleman St	Victory Way	Preston Rd	Recoup	0.51	4	Minor Thoroughfare	100%	$0	$0	$311,830	$0	$311,830
2	2-LL-b	Lovers Lane	Gateway Dr	US 380	Recoup	1.12	4	Minor Thoroughfare	100%	$1,103,349	$0	$8,487,303	$0	$9,590,652
2	2-LL-a	Lovers Lane	BNSF RR	Gateway Dr	New	0.29	4	Minor Thoroughfare	100%	$322,270	$0	$2,479,000	$245,088	$3,046,358
2	2-Vly-a	Victory Way	Coleman St	Frontier Pkwy	Recoup	0.36	2	Minor Thoroughfare	100%	$299,860	$338,400	$1,499,300	$0	$2,137,560
2	2-Vly-b	Victory Way	Coleman St	Frontier Pkwy	New	0.36	2	Minor Thoroughfare	100%	$229,203	$0	$1,763,100	$174,310	$2,166,613
2	2-Mck-a	McKinley St	Gorgeous Rd	W 5th St	Recoup	0.22	2	Old Town District	100%	$89,433	$0	$1,700,406	$0	$1,789,839
2	2-Mck-b	McKinley St	Gorgeous Rd	Coleman St	New	0.18	2	Old Town District	100%	$165,230	$0	$1,271,000	$125,658	$1,561,888
2	2-Crg-a	Craig Rd	Preston Rd	West Broadway St	New	0.42	2	Commercial Couplet	100%	$302,666	$0	$2,328,200	$230,179	$2,861,045
2	2-WB-a	West Broadway St	Craig	Preston Rd	New	0.21	2	Old Town District	100%	$151,749	$0	$1,167,300	$115,406	$1,434,455
Sub-total SA 2						22.99				**12,739,864**	**1,373,973**	**102,766,668**	**6,040,252**	**$122,920,757**

1

Town of Prosper

Planning Level Cost Estimate Worksheet

Gee Road

0.187 mi N of US 380 to First St

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	6
Length (lf):	3,432		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	35	STA	$ 3,000.00	$ 105,000
2	Unclassified Street Excavation	6,200	CY	$ 30.00	$ 186,000
3	8" Lime Stabilized Subgrade	10,000	SY	$ 8.50	$ 85,000
4	Lime for Stabilization (48 lb/SY)	240	TON	$ 350.00	$ 84,000
5	9" CRCP	9,200	SY	$ 105.00	$ 966,000
6	Curb	6,870	LF	$ 30.00	$ 206,100
7	Concrete Sidewalk and Ramps	41,190	SF	$ 12.00	$ 494,280
8	Furnishing and Placing Topsoil	4,600	SY	$ 5.00	$ 23,000
				Paving Estimate Subtotal:	**$ 2,149,380**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 43,000
10	Traffic Control	5%	$ 107,500
11	Erosion Control	3%	$ 64,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 322,500
13	Landscaping	2%	$ 43,000
14	Illumination	3%	$ 64,500
		Other Components Estimate Subtotal:	**$ 645,000**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 2,794,380
Mobilization	5%	$ 139,800
Contingency	10%	$ 293,500
Construction Cost Estimate Total:		**$ 3,227,700**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 3,227,700
Engineering/Survey/Testing		13.0%	$ 419,600
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 3,647,300**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Gee Road

US 380 to 0.187 mi N of US 380

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	6
Length (lf):	370		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	4	STA	$ 3,000.00	$ 12,000
2	Unclassified Street Excavation	700	CY	$ 30.00	$ 21,000
3	8" Lime Stabilized Subgrade	1,100	SY	$ 8.50	$ 9,350
4	Lime for Stabilization (48 lb/SY)	30	TON	$ 350.00	$ 10,500
5	9" CRCP	1,000	SY	$ 105.00	$ 105,000
6	Curb	740	LF	$ 30.00	$ 22,200
7	Concrete Sidewalk and Ramps	4,440	SF	$ 12.00	$ 53,280
8	Furnishing and Placing Topsoil	500	SY	$ 5.00	$ 2,500
				Paving Estimate Subtotal:	**$ 235,830**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 4,800
10	Traffic Control	5%	$ 11,800
11	Erosion Control	3%	$ 7,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 35,400
13	Landscaping	2%	$ 4,800
14	Illumination	3%	$ 7,100
	Other Components Estimate Subtotal:		**$ 71,000**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 306,830
Mobilization	5%	$ 15,400
Contingency	10%	$ 32,300
Construction Cost Estimate Total:		**$ 354,600**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 354,600
Engineering/Survey/Testing		13.0%	$ 46,100
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 400,700**

3

Town of Prosper

Planning Level Cost Estimate Worksheet

Gee Road

First St to FM 1385

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	6
Length (lf):	5,122		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	48		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	52	STA	$ 3,000.00	$ 156,000
2	Unclassified Street Excavation	18,300	CY	$ 30.00	$ 549,000
3	8" Lime Stabilized Subgrade	28,500	SY	$ 8.50	$ 242,250
4	Lime for Stabilization (48 lb/SY)	680	TON	$ 350.00	$ 238,000
5	9" CRCP	27,400	SY	$ 105.00	$ 2,877,000
6	Curb	20,490	LF	$ 30.00	$ 614,700
7	Concrete Sidewalk and Ramps	61,470	SF	$ 12.00	$ 737,640
8	Furnishing and Placing Topsoil	20,500	SY	$ 5.00	$ 102,500
				Paving Estimate Subtotal:	**$ 5,517,090**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 110,400
10	Traffic Control	5%	$ 275,900
11	Erosion Control	3%	$ 165,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 827,600
13	Landscaping	2%	$ 110,400
14	Illumination	3%	$ 165,600
		Other Components Estimate Subtotal:	**$ 1,655,500**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	2 Minor Bridges	$ 9,958,000	$ 9,958,000
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ 9,958,000**

I, II, & III Construction Subtotal:		$ 17,130,590
Mobilization	5%	$ 856,600
Contingency	10%	$ 1,798,800
Construction Cost Estimate Total:		**$ 19,786,000**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 19,786,000
Engineering/Survey/Testing		13.0%	$ 2,572,200
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 22,358,200**

4

Town of Prosper

Planning Level Cost Estimate Worksheet

Teel Parkway

US 380 to First St

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	6
Length (lf):	3,854		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	39	STA	$ 3,000.00	$ 117,000
2	Unclassified Street Excavation	6,900	CY	$ 30.00	$ 207,000
3	8" Lime Stabilized Subgrade	11,200	SY	$ 8.50	$ 95,200
4	Lime for Stabilization (48 lb/SY)	270	TON	$ 350.00	$ 94,500
5	9" CRCP	10,300	SY	$ 105.00	$ 1,081,500
6	Curb	7,710	LF	$ 30.00	$ 231,300
7	Concrete Sidewalk and Ramps	46,250	SF	$ 12.00	$ 555,000
8	Furnishing and Placing Topsoil	5,100	SY	$ 5.00	$ 25,500
				Paving Estimate Subtotal:	**$ 2,407,000**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 48,200
10	Traffic Control	5%	$ 120,400
11	Erosion Control	3%	$ 72,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 361,100
13	Landscaping	2%	$ 48,200
14	Illumination	3%	$ 72,300
	Other Components Estimate Subtotal:		**$ 722,500**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 3,129,500
Mobilization	5%	$ 156,500
Contingency	10%	$ 328,600
Construction Cost Estimate Total:		**$ 3,614,600**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 3,614,600
Engineering/Survey/Testing		13.0%	$ 469,900
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 4,084,500**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Teel Parkway

First St to 381 ft N of Roundtree Dt

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	4
Length (lf):	2,957		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Adding 2 lanes as Interim Major Thoroughfare. Assumes no ROW adds.		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	30	STA	$ 3,000.00	$ 90,000
2	Unclassified Street Excavation	5,300	CY	$ 30.00	$ 159,000
3	8" Lime Stabilized Subgrade	8,600	SY	$ 8.50	$ 73,100
4	Lime for Stabilization (48 lb/SY)	210	TON	$ 350.00	$ 73,500
5	9" CRCP	7,900	SY	$ 105.00	$ 829,500
6	Curb	5,920	LF	$ 30.00	$ 177,600
7	Concrete Sidewalk and Ramps	35,490	SF	$ 12.00	$ 425,880
8	Furnishing and Placing Topsoil	19,700	SY	$ 5.00	$ 98,500
				Paving Estimate Subtotal:	**$ 1,927,080**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 38,600
10	Traffic Control	5%	$ 96,400
11	Erosion Control	3%	$ 57,900
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 289,100
13	Landscaping	2%	$ 38,600
14	Illumination	3%	$ 57,900
	Other Components Estimate Subtotal:		**$ 578,500**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	Minor Bridge	$ 2,872,000	$ 2,872,000
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ 2,872,000**

I, II, & III Construction Subtotal:		$ 5,377,580
Mobilization	5%	$ 268,900
Contingency	10%	$ 564,700
Construction Cost Estimate Total:		**$ 6,211,200**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 6,211,200
Engineering/Survey/Testing		13.0%	$ 807,500
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 7,018,700**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Teel Parkway

88 ft N of N Windsong Pkwy to Prosper Trl

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	4
Length (lf):	1,584		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Adding 2 lanes as Interim Major Thoroughfare		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	16	STA	$ 3,000.00	$ 48,000
2	Unclassified Street Excavation	2,900	CY	$ 30.00	$ 87,000
3	8" Lime Stabilized Subgrade	4,600	SY	$ 8.50	$ 39,100
4	Lime for Stabilization (48 lb/SY)	110	TON	$ 350.00	$ 38,500
5	9" CRCP	4,300	SY	$ 105.00	$ 451,500
6	Curb	1,590	LF	$ 30.00	$ 47,700
7	Concrete Sidewalk and Ramps	19,010	SF	$ 12.00	$ 228,120
8	Furnishing and Placing Topsoil	9,500	SY	$ 5.00	$ 47,500
				Paving Estimate Subtotal:	**$ 987,420**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 19,800
10	Traffic Control	5%	$ 49,400
11	Erosion Control	3%	$ 29,700
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 148,200
13	Landscaping	2%	$ 19,800
14	Illumination	3%	$ 29,700
	Other Components Estimate Subtotal:		**$ 296,600**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 1,284,020
Mobilization	5%	$ 64,300
Contingency	10%	$ 134,900
Construction Cost Estimate Total:		**$ 1,483,300**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,483,300
Engineering/Survey/Testing		13.0%	$ 192,800
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 1,676,100**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Teel Parkway

Prosper Trl to Parvin Rd

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	4
Length (lf):	6,494		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Adding 2 lanes as Interim Major Thoroughfare		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	65	STA	$ 3,000.00	$ 195,000
2	Unclassified Street Excavation	11,600	CY	$ 30.00	$ 348,000
3	8" Lime Stabilized Subgrade	18,800	SY	$ 8.50	$ 159,800
4	Lime for Stabilization (48 lb/SY)	450	TON	$ 350.00	$ 157,500
5	9" CRCP	17,400	SY	$ 105.00	$ 1,827,000
6	Curb	25,980	LF	$ 30.00	$ 779,400
7	Concrete Sidewalk and Ramps	77,930	SF	$ 12.00	$ 935,160
8	Furnishing and Placing Topsoil	43,300	SY	$ 5.00	$ 216,500
				Paving Estimate Subtotal:	**$ 4,618,360**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 92,400
10	Traffic Control	5%	$ 231,000
11	Erosion Control	3%	$ 138,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 692,800
13	Landscaping	2%	$ 92,400
14	Illumination	3%	$ 138,600
	Other Components Estimate Subtotal:		**$ 1,385,800**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 6,004,160
Mobilization	5%	$ 300,300
Contingency	10%	$ 630,500
Construction Cost Estimate Total:		**$ 6,935,000**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 6,935,000
Engineering/Survey/Testing		13.0%	$ 901,600
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 7,836,600**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Legacy Dr

Scarlet Dr to First St

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	4
Length (lf):	6,494		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Adding 2 lanes as Interim Major Thoroughfare		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	65	STA	$ 3,000.00	$ 195,000
2	Unclassified Street Excavation	11,600	CY	$ 30.00	$ 348,000
3	8" Lime Stabilized Subgrade	18,800	SY	$ 8.50	$ 159,800
4	Lime for Stabilization (48 lb/SY)	450	TON	$ 350.00	$ 157,500
5	9" CRCP	17,400	SY	$ 105.00	$ 1,827,000
6	Curb	6,500	LF	$ 30.00	$ 195,000
7	Concrete Sidewalk and Ramps	38,970	SF	$ 12.00	$ 467,640
8	Furnishing and Placing Topsoil	43,300	SY	$ 5.00	$ 216,500
				Paving Estimate Subtotal:	**$ 3,566,440**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 71,400
10	Traffic Control	5%	$ 178,400
11	Erosion Control	3%	$ 107,000
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 535,000
13	Landscaping	2%	$ 71,400
14	Illumination	3%	$ 107,000
	Other Components Estimate Subtotal:		**$ 1,070,200**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	Minor Bridge	$ 4,788,000	$ 4,788,000
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ 4,788,000**

I, II, & III Construction Subtotal:		$ 9,424,640
Mobilization	5%	$ 471,300
Contingency	10%	$ 989,600
Construction Cost Estimate Total:		**$ 10,885,600**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 10,885,600
Engineering/Survey/Testing		13.0%	$ 1,415,100
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 12,300,700**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Legacy Dr

US 380 to First St

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	6
Length (lf):	5,280		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	53	STA	$ 3,000.00	$ 159,000
2	Unclassified Street Excavation	9,400	CY	$ 30.00	$ 282,000
3	8" Lime Stabilized Subgrade	15,300	SY	$ 8.50	$ 130,050
4	Lime for Stabilization (48 lb/SY)	370	TON	$ 350.00	$ 129,500
5	9" CRCP	14,100	SY	$ 105.00	$ 1,480,500
6	Curb	5,280	LF	$ 30.00	$ 158,400
7	Concrete Sidewalk and Ramps	0	SF	$ 12.00	$ -
8	Furnishing and Placing Topsoil	0	SY	$ 5.00	$ -
				Paving Estimate Subtotal:	**$ 2,339,450**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 46,800
10	Traffic Control	5%	$ 117,000
11	Erosion Control	3%	$ 70,200
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	0%	$ -
13	Landscaping	0%	$ -
14	Illumination	0%	$ -
	Other Components Estimate Subtotal:		**$ 234,000**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 2,573,450
Mobilization	5%	$ 128,700
Contingency	10%	$ 270,300
Construction Cost Estimate Total:		**$ 2,972,500**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,972,500
Engineering/Survey/Testing		13.0%	$ 386,400
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 3,358,900**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Legacy Dr

Prosper Trl to Parvin Rd

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	4
Length (lf):	3,010		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Adding 2 lanes as Interim Major Thoroughfare		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	31	STA	$ 3,000.00	$ 93,000
2	Unclassified Street Excavation	5,400	CY	$ 30.00	$ 162,000
3	8" Lime Stabilized Subgrade	8,700	SY	$ 8.50	$ 73,950
4	Lime for Stabilization (48 lb/SY)	210	TON	$ 350.00	$ 73,500
5	9" CRCP	8,100	SY	$ 105.00	$ 850,500
6	Curb	12,040	LF	$ 30.00	$ 361,200
7	Concrete Sidewalk and Ramps	36,120	SF	$ 12.00	$ 433,440
8	Furnishing and Placing Topsoil	20,100	SY	$ 5.00	$ 100,500
				Paving Estimate Subtotal:	**$ 2,148,090**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 43,000
10	Traffic Control	5%	$ 107,500
11	Erosion Control	3%	$ 64,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 322,300
13	Landscaping	2%	$ 43,000
14	Illumination	3%	$ 64,500
		Other Components Estimate Subtotal:	**$ 644,800**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 2,792,890
Mobilization	5%	$ 139,700
Contingency	10%	$ 293,300
Construction Cost Estimate Total:		**$ 3,225,900**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 3,225,900
Engineering/Survey/Testing		13.0%	$ 419,400
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 3,645,300**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Legacy Dr

Parvin Rd to Frontier Pkwy

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	4
Length (lf):	2,482		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Adding 2 lanes as Interim Major Thoroughfare		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	25	STA	$ 3,000.00	$ 75,000
2	Unclassified Street Excavation	4,500	CY	$ 30.00	$ 135,000
3	8" Lime Stabilized Subgrade	7,200	SY	$ 8.50	$ 61,200
4	Lime for Stabilization (48 lb/SY)	170	TON	$ 350.00	$ 59,500
5	9" CRCP	6,700	SY	$ 105.00	$ 703,500
6	Curb	9,930	LF	$ 30.00	$ 297,900
7	Concrete Sidewalk and Ramps	29,790	SF	$ 12.00	$ 357,480
8	Furnishing and Placing Topsoil	16,500	SY	$ 5.00	$ 82,500
				Paving Estimate Subtotal:	**$ 1,772,080**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 35,500
10	Traffic Control	5%	$ 88,700
11	Erosion Control	3%	$ 53,200
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 265,900
13	Landscaping	2%	$ 35,500
14	Illumination	3%	$ 53,200
	Other Components Estimate Subtotal:		**$ 532,000**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 2,304,080
Mobilization	5%	$ 115,300
Contingency	10%	$ 242,000
Construction Cost Estimate Total:		**$ 2,661,400**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,661,400
Engineering/Survey/Testing		13.0%	$ 346,000
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 3,007,400**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Legacy Dr

First St to Prosper Trl

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	4
Length (lf):	5,755		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Adding 2 lanes as Interim Major Thoroughfare		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	58	STA	$ 3,000.00	$ 174,000
2	Unclassified Street Excavation	10,300	CY	$ 30.00	$ 309,000
3	8" Lime Stabilized Subgrade	16,700	SY	$ 8.50	$ 141,950
4	Lime for Stabilization (48 lb/SY)	400	TON	$ 350.00	$ 140,000
5	9" CRCP	15,400	SY	$ 105.00	$ 1,617,000
6	Curb	23,020	LF	$ 30.00	$ 690,600
7	Concrete Sidewalk and Ramps	69,060	SF	$ 12.00	$ 828,720
8	Furnishing and Placing Topsoil	38,400	SY	$ 5.00	$ 192,000
				Paving Estimate Subtotal:	**$ 4,093,270**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 81,900
10	Traffic Control	5%	$ 204,700
11	Erosion Control	3%	$ 122,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 614,000
13	Landscaping	2%	$ 81,900
14	Illumination	3%	$ 122,800
	Other Components Estimate Subtotal:		**$ 1,228,100**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 5,321,370
Mobilization	5%	$ 266,100
Contingency	10%	$ 558,800
Construction Cost Estimate Total:		**$ 6,146,300**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 6,146,300
Engineering/Survey/Testing		13.0%	$ 799,000
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 6,945,300**

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Town of Prosper

Planning Level Cost Estimate Worksheet

New Road A

US 380 to First St

Roadway Information:			
Functional Classification:	Local Collector	No. of Lanes:	2
Length (lf):	5,333		
Right-of-Way Width (ft.):	60		
Median Type:	None		
Pavement Width (BOC to BOC):	24		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	54	STA	$ 3,000.00	$ 162,000
2	Unclassified Street Excavation	9,500	CY	$ 30.00	$ 285,000
3	8" Lime Stabilized Subgrade	15,500	SY	$ 8.50	$ 131,750
4	Lime for Stabilization (48 lb/SY)	370	TON	$ 350.00	$ 129,500
5	9" CRCP	14,300	SY	$ 105.00	$ 1,501,500
6	Curb	10,670	LF	$ 30.00	$ 320,100
7	Concrete Sidewalk and Ramps	53,330	SF	$ 12.00	$ 639,960
8	Furnishing and Placing Topsoil	8,300	SY	$ 5.00	$ 41,500
				Paving Estimate Subtotal:	**$ 3,211,310**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 64,300
10	Traffic Control	5%	$ 160,600
11	Erosion Control	3%	$ 96,400
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 481,700
13	Landscaping	2%	$ 64,300
14	Illumination	3%	$ 96,400
	Other Components Estimate Subtotal:		**$ 963,700**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 4,175,010
Mobilization	5%	$ 208,800
Contingency	10%	$ 438,400
Construction Cost Estimate Total:		**$ 4,822,300**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 4,822,300
Engineering/Survey/Testing		13.0%	$ 626,900
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 5,449,200**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Parvin Rd

FM 1385 to 0.61 mi W of Legacy Drive

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	4
Length (lf):	14,995		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Adding 2 lanes as Interim Major Thoroughfare		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	150	STA	$ 3,000.00	$ 450,000
2	Unclassified Street Excavation	26,700	CY	$ 30.00	$ 801,000
3	8" Lime Stabilized Subgrade	43,400	SY	$ 8.50	$ 368,900
4	Lime for Stabilization (48 lb/SY)	1,040	TON	$ 350.00	$ 364,000
5	9" CRCP	40,000	SY	$ 105.00	$ 4,200,000
6	Curb	59,980	LF	$ 30.00	$ 1,799,400
7	Concrete Sidewalk and Ramps	179,940	SF	$ 12.00	$ 2,159,280
8	Furnishing and Placing Topsoil	100,000	SY	$ 5.00	$ 500,000
				Paving Estimate Subtotal:	**$ 10,642,580**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 212,900
10	Traffic Control	5%	$ 532,200
11	Erosion Control	3%	$ 319,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 1,596,400
13	Landscaping	2%	$ 212,900
14	Illumination	3%	$ 319,300
	Other Components Estimate Subtotal:		**$ 3,193,000**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 13,835,580
Mobilization	5%	$ 691,800
Contingency	10%	$ 1,452,800
Construction Cost Estimate Total:		**$ 15,980,200**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 15,980,200
Engineering/Survey/Testing		13.0%	$ 2,077,400
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 18,057,600**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Frontier Pkwy

Legacy Dr to DNT

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	4
Length (lf):	5,702		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Adding 2 lanes as Interim Major Thoroughfare		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	58	STA	$ 3,000.00	$ 174,000
2	Unclassified Street Excavation	10,200	CY	$ 30.00	$ 306,000
3	8" Lime Stabilized Subgrade	16,500	SY	$ 8.50	$ 140,250
4	Lime for Stabilization (48 lb/SY)	400	TON	$ 350.00	$ 140,000
5	9" CRCP	15,300	SY	$ 105.00	$ 1,606,500
6	Curb	11,410	LF	$ 30.00	$ 342,300
7	Concrete Sidewalk and Ramps	68,430	SF	$ 12.00	$ 821,160
8	Furnishing and Placing Topsoil	38,000	SY	$ 5.00	$ 190,000
				Paving Estimate Subtotal:	**$ 3,720,210**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 74,500
10	Traffic Control	5%	$ 186,100
11	Erosion Control	3%	$ 111,700
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 558,100
13	Landscaping	2%	$ 74,500
14	Illumination	3%	$ 111,700
	Other Components Estimate Subtotal:		**$ 1,116,600**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	Minor Bridge	$ 1,915,200	$ 1,915,200
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ 1,915,200**

I, II, & III Construction Subtotal:		$ 6,752,010
Mobilization	5%	$ 337,700
Contingency	10%	$ 709,000
Construction Cost Estimate Total:		**$ 7,798,800**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 7,798,800
Engineering/Survey/Testing		13.0%	$ 1,013,800
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 8,812,600**

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Town of Prosper
Planning Level Cost Estimate Worksheet

Frontier Pkwy
DNT to BNSF RR

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	6
Length (lf):	5,702		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	58	STA	$ 3,000.00	$ 174,000
2	Unclassified Street Excavation	10,200	CY	$ 30.00	$ 306,000
3	8" Lime Stabilized Subgrade	16,500	SY	$ 8.50	$ 140,250
4	Lime for Stabilization (48 lb/SY)	400	TON	$ 350.00	$ 140,000
5	9" CRCP	15,300	SY	$ 105.00	$ 1,606,500
6	Curb	11,410	LF	$ 30.00	$ 342,300
7	Concrete Sidewalk and Ramps	0	SF	$ 12.00	$ -
8	Furnishing and Placing Topsoil	0	SY	$ 5.00	$ -
				Paving Estimate Subtotal:	**$ 2,709,050**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 54,200
10	Traffic Control	5%	$ 135,500
11	Erosion Control	3%	$ 81,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	0%	$ -
13	Landscaping	0%	$ -
14	Illumination	0%	$ -
	Other Components Estimate Subtotal:		**$ 271,000**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 2,980,050
Mobilization	5%	$ 149,100
Contingency	10%	$ 313,000
Construction Cost Estimate Total:		**$ 3,442,200**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 3,442,200
Engineering/Survey/Testing		13.0%	$ 447,500
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 3,889,700**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Mahard Pkwy

Prairie Dr to 500 N of Prairie Dr

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	4
Length (lf):	528		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Adding 2 lanes as Interim Major Thoroughfare		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	6	STA	$ 3,000.00	$ 18,000
2	Unclassified Street Excavation	1,000	CY	$ 30.00	$ 30,000
3	8" Lime Stabilized Subgrade	1,600	SY	$ 8.50	$ 13,600
4	Lime for Stabilization (48 lb/SY)	40	TON	$ 350.00	$ 14,000
5	9" CRCP	1,500	SY	$ 105.00	$ 157,500
6	Curb	2,120	LF	$ 30.00	$ 63,600
7	Concrete Sidewalk and Ramps	6,340	SF	$ 12.00	$ 76,080
8	Furnishing and Placing Topsoil	3,500	SY	$ 5.00	$ 17,500
				Paving Estimate Subtotal:	**$ 390,280**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 7,900
10	Traffic Control	5%	$ 19,600
11	Erosion Control	3%	$ 11,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 58,600
13	Landscaping	2%	$ 7,900
14	Illumination	3%	$ 11,800
		Other Components Estimate Subtotal:	**$ 117,600**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 507,880
Mobilization	5%	$ 25,400
Contingency	10%	$ 53,400
Construction Cost Estimate Total:		**$ 586,700**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 586,700
Engineering/Survey/Testing		13.0%	$ 76,300
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 663,000**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Mahard Pkwy

500 N of Prairie Dr to Lovers Lane

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	4
Length (lf):	686		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	48		
Description:	Construct new roadway as Interim Major Thoroughfare		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	7	STA	$ 3,000.00	$ 21,000
2	Unclassified Street Excavation	2,500	CY	$ 30.00	$ 75,000
3	8" Lime Stabilized Subgrade	3,900	SY	$ 8.50	$ 33,150
4	Lime for Stabilization (48 lb/SY)	90	TON	$ 350.00	$ 31,500
5	9" CRCP	3,700	SY	$ 105.00	$ 388,500
6	Curb	1,380	LF	$ 30.00	$ 41,400
7	Concrete Sidewalk and Ramps	8,240	SF	$ 12.00	$ 98,880
8	Furnishing and Placing Topsoil	4,600	SY	$ 5.00	$ 23,000
				Paving Estimate Subtotal:	**$ 712,430**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 14,300
10	Traffic Control	5%	$ 35,700
11	Erosion Control	3%	$ 21,400
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 106,900
13	Landscaping	2%	$ 14,300
14	Illumination	3%	$ 21,400
		Other Components Estimate Subtotal:	**$ 214,000**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 926,430
Mobilization	5%	$ 46,400
Contingency	10%	$ 97,300
Construction Cost Estimate Total:		**$ 1,070,200**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,070,200
Engineering/Survey/Testing		13.0%	$ 139,100
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 1,209,300**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Prosper Trl

Teel Pkwy to 2550' E of Teel Pkwy

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	4,066		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	41	STA	$ 3,000.00	$ 123,000
2	Unclassified Street Excavation	7,300	CY	$ 30.00	$ 219,000
3	8" Lime Stabilized Subgrade	11,800	SY	$ 8.50	$ 100,300
4	Lime for Stabilization (48 lb/SY)	280	TON	$ 350.00	$ 98,000
5	9" CRCP	10,900	SY	$ 105.00	$ 1,144,500
6	Curb	16,270	LF	$ 30.00	$ 488,100
7	Concrete Sidewalk and Ramps	48,800	SF	$ 12.00	$ 585,600
8	Furnishing and Placing Topsoil	13,600	SY	$ 5.00	$ 68,000
				Paving Estimate Subtotal:	**$ 2,826,500**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 56,600
10	Traffic Control	5%	$ 141,400
11	Erosion Control	3%	$ 84,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 424,000
13	Landscaping	2%	$ 56,600
14	Illumination	3%	$ 84,800
	Other Components Estimate Subtotal:		**$ 848,200**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 3,674,700
Mobilization	5%	$ 183,800
Contingency	10%	$ 385,900
Construction Cost Estimate Total:		**$ 4,244,400**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 4,244,400
Engineering/Survey/Testing		13.0%	$ 551,800
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 4,796,200**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Prosper Trl

1,617' E of Teel Pkwy to 3,149' E of Teel Pkwy

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	1,531		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	16	STA	$ 3,000.00	$ 48,000
2	Unclassified Street Excavation	2,800	CY	$ 30.00	$ 84,000
3	8" Lime Stabilized Subgrade	4,500	SY	$ 8.50	$ 38,250
4	Lime for Stabilization (48 lb/SY)	110	TON	$ 350.00	$ 38,500
5	9" CRCP	4,100	SY	$ 105.00	$ 430,500
6	Curb	6,130	LF	$ 30.00	$ 183,900
7	Concrete Sidewalk and Ramps	18,380	SF	$ 12.00	$ 220,560
8	Furnishing and Placing Topsoil	5,100	SY	$ 5.00	$ 25,500
				Paving Estimate Subtotal:	**$ 1,069,210**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 21,400
10	Traffic Control	5%	$ 53,500
11	Erosion Control	3%	$ 32,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 160,400
13	Landscaping	2%	$ 21,400
14	Illumination	3%	$ 32,100
	Other Components Estimate Subtotal:		**$ 320,900**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 1,390,110
Mobilization	5%	$ 69,600
Contingency	10%	$ 146,000
Construction Cost Estimate Total:		**$ 1,605,800**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,605,800
Engineering/Survey/Testing		13.0%	$ 208,800
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 1,814,600**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Prosper Trl

3029' E of Teel Pkwy to Legacy Dr

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	1,584		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	16	STA	$ 3,000.00	$ 48,000
2	Unclassified Street Excavation	2,900	CY	$ 30.00	$ 87,000
3	8" Lime Stabilized Subgrade	4,600	SY	$ 8.50	$ 39,100
4	Lime for Stabilization (48 lb/SY)	110	TON	$ 350.00	$ 38,500
5	9" CRCP	4,300	SY	$ 105.00	$ 451,500
6	Curb	3,170	LF	$ 30.00	$ 95,100
7	Concrete Sidewalk and Ramps	19,010	SF	$ 12.00	$ 228,120
8	Furnishing and Placing Topsoil	5,300	SY	$ 5.00	$ 26,500
				Paving Estimate Subtotal:	**$ 1,013,820**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 20,300
10	Traffic Control	5%	$ 50,700
11	Erosion Control	3%	$ 30,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 152,100
13	Landscaping	2%	$ 20,300
14	Illumination	3%	$ 30,500
	Other Components Estimate Subtotal:		**$ 304,400**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 1,318,220
Mobilization	5%	$ 66,000
Contingency	10%	$ 138,500
Construction Cost Estimate Total:		**$ 1,522,800**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,522,800
Engineering/Survey/Testing		13.0%	$ 198,000
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 1,720,800**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Prosper Trl

Legacy Dr to DNT

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	5,755		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	58	STA	$ 3,000.00	$ 174,000
2	Unclassified Street Excavation	10,300	CY	$ 30.00	$ 309,000
3	8" Lime Stabilized Subgrade	16,700	SY	$ 8.50	$ 141,950
4	Lime for Stabilization (48 lb/SY)	400	TON	$ 350.00	$ 140,000
5	9" CRCP	15,400	SY	$ 105.00	$ 1,617,000
6	Curb	11,510	LF	$ 30.00	$ 345,300
7	Concrete Sidewalk and Ramps	24,000	SF	$ 12.00	$ 288,000
8	Furnishing and Placing Topsoil	6,700	SY	$ 5.00	$ 33,500
				Paving Estimate Subtotal:	**$ 3,048,750**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 61,000
10	Traffic Control	5%	$ 152,500
11	Erosion Control	3%	$ 91,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 457,400
13	Landscaping	2%	$ 61,000
14	Illumination	3%	$ 91,500
		Other Components Estimate Subtotal:	**$ 914,900**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 3,963,650
Mobilization	5%	$ 198,200
Contingency	10%	$ 416,200
Construction Cost Estimate Total:		**$ 4,578,100**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 4,578,100
Engineering/Survey/Testing		13.0%	$ 595,200
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 5,173,300**

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Town of Prosper

Planning Level Cost Estimate Worksheet

First St

Stuber E.S. to DNT

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	7,445		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	75	STA	$ 3,000.00	$ 225,000
2	Unclassified Street Excavation	13,300	CY	$ 30.00	$ 399,000
3	8" Lime Stabilized Subgrade	21,600	SY	$ 8.50	$ 183,600
4	Lime for Stabilization (48 lb/SY)	520	TON	$ 350.00	$ 182,000
5	9" CRCP	19,900	SY	$ 105.00	$ 2,089,500
6	Curb	29,780	LF	$ 30.00	$ 893,400
7	Concrete Sidewalk and Ramps	89,340	SF	$ 12.00	$ 1,072,080
8	Furnishing and Placing Topsoil	24,800	SY	$ 5.00	$ 124,000
				Paving Estimate Subtotal:	**$ 5,168,580**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 103,400
10	Traffic Control	5%	$ 258,500
11	Erosion Control	3%	$ 155,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 775,300
13	Landscaping	2%	$ 103,400
14	Illumination	3%	$ 155,100
	Other Components Estimate Subtotal:		**$ 1,550,800**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 6,719,380
Mobilization	5%	$ 336,000
Contingency	10%	$ 705,600
Construction Cost Estimate Total:		**$ 7,761,000**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 7,761,000
Engineering/Survey/Testing		13.0%	$ 1,008,900
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 8,769,900**

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Town of Prosper

Planning Level Cost Estimate Worksheet

First St

DNT to BNSF RR

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	3,590		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	36	STA	$ 3,000.00	$ 108,000
2	Unclassified Street Excavation	6,400	CY	$ 30.00	$ 192,000
3	8" Lime Stabilized Subgrade	10,400	SY	$ 8.50	$ 88,400
4	Lime for Stabilization (48 lb/SY)	250	TON	$ 350.00	$ 87,500
5	9" CRCP	9,600	SY	$ 105.00	$ 1,008,000
6	Curb	14,360	LF	$ 30.00	$ 430,800
7	Concrete Sidewalk and Ramps	43,080	SF	$ 12.00	$ 516,960
8	Furnishing and Placing Topsoil	12,000	SY	$ 5.00	$ 60,000
				Paving Estimate Subtotal:	**$ 2,491,660**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 49,900
10	Traffic Control	5%	$ 124,600
11	Erosion Control	3%	$ 74,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 373,800
13	Landscaping	2%	$ 49,900
14	Illumination	3%	$ 74,800
	Other Components Estimate Subtotal:		**$ 747,800**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 3,239,460
Mobilization	5%	$ 162,000
Contingency	10%	$ 340,200
Construction Cost Estimate Total:		**$ 3,741,700**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 3,741,700
Engineering/Survey/Testing		13.0%	$ 486,400
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 4,228,100**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Prairie Dr

Teel Pkwy to 290 ft W of Waters Edge Way

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	2,746		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	48		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	28	STA	$ 3,000.00	$ 84,000
2	Unclassified Street Excavation	9,800	CY	$ 30.00	$ 294,000
3	8" Lime Stabilized Subgrade	15,300	SY	$ 8.50	$ 130,050
4	Lime for Stabilization (48 lb/SY)	370	TON	$ 350.00	$ 129,500
5	9" CRCP	14,700	SY	$ 105.00	$ 1,543,500
6	Curb	10,990	LF	$ 30.00	$ 329,700
7	Concrete Sidewalk and Ramps	32,960	SF	$ 12.00	$ 395,520
8	Furnishing and Placing Topsoil	9,200	SY	$ 5.00	$ 46,000
				Paving Estimate Subtotal:	**$ 2,952,270**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 59,100
10	Traffic Control	5%	$ 147,700
11	Erosion Control	3%	$ 88,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 442,900
13	Landscaping	2%	$ 59,100
14	Illumination	3%	$ 88,600
	Other Components Estimate Subtotal:		**$ 886,000**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 3,838,270
Mobilization	5%	$ 192,000
Contingency	10%	$ 403,100
Construction Cost Estimate Total:		**$ 4,433,400**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 4,433,400
Engineering/Survey/Testing		13.0%	$ 576,300
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 5,009,700**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Shawnee Trl

Lovers Lane to Star Trace Pkwy

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	4,646		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	48		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	47	STA	$ 3,000.00	$ 141,000
2	Unclassified Street Excavation	16,600	CY	$ 30.00	$ 498,000
3	8" Lime Stabilized Subgrade	25,900	SY	$ 8.50	$ 220,150
4	Lime for Stabilization (48 lb/SY)	620	TON	$ 350.00	$ 217,000
5	9" CRCP	24,800	SY	$ 105.00	$ 2,604,000
6	Curb	18,590	LF	$ 30.00	$ 557,700
7	Concrete Sidewalk and Ramps	55,760	SF	$ 12.00	$ 669,120
8	Furnishing and Placing Topsoil	15,500	SY	$ 5.00	$ 77,500
				Paving Estimate Subtotal:	**$ 4,984,470**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 99,700
10	Traffic Control	5%	$ 249,300
11	Erosion Control	3%	$ 149,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 747,700
13	Landscaping	2%	$ 99,700
14	Illumination	3%	$ 149,600
	Other Components Estimate Subtotal:		**$ 1,495,600**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 6,480,070
Mobilization	5%	$ 324,100
Contingency	10%	$ 680,500
Construction Cost Estimate Total:		**$ 7,484,700**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 7,484,700
Engineering/Survey/Testing		13.0%	$ 973,000
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 8,457,700**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Shawnee Trl

982 ft N of Caruth Dr to Frontier Pkwy

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	2,429		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	48		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	25	STA	$ 3,000.00	$ 75,000
2	Unclassified Street Excavation	8,700	CY	$ 30.00	$ 261,000
3	8" Lime Stabilized Subgrade	13,500	SY	$ 8.50	$ 114,750
4	Lime for Stabilization (48 lb/SY)	320	TON	$ 350.00	$ 112,000
5	9" CRCP	13,000	SY	$ 105.00	$ 1,365,000
6	Curb	9,720	LF	$ 30.00	$ 291,600
7	Concrete Sidewalk and Ramps	29,150	SF	$ 12.00	$ 349,800
8	Furnishing and Placing Topsoil	8,100	SY	$ 5.00	$ 40,500
				Paving Estimate Subtotal:	**$ 2,609,650**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 52,200
10	Traffic Control	5%	$ 130,500
11	Erosion Control	3%	$ 78,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 391,500
13	Landscaping	2%	$ 52,200
14	Illumination	3%	$ 78,300
	Other Components Estimate Subtotal:		**$ 783,000**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 3,392,650
Mobilization	5%	$ 169,700
Contingency	10%	$ 356,300
Construction Cost Estimate Total:		**$ 3,918,700**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 3,918,700
Engineering/Survey/Testing		13.0%	$ 509,400
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 4,428,100**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Lovers Lane

DNT to BNSF RR

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	3,115		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	48		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	32	STA	$ 3,000.00	$ 96,000
2	Unclassified Street Excavation	11,100	CY	$ 30.00	$ 333,000
3	8" Lime Stabilized Subgrade	17,400	SY	$ 8.50	$ 147,900
4	Lime for Stabilization (48 lb/SY)	420	TON	$ 350.00	$ 147,000
5	9" CRCP	16,700	SY	$ 105.00	$ 1,753,500
6	Curb	12,460	LF	$ 30.00	$ 373,800
7	Concrete Sidewalk and Ramps	37,380	SF	$ 12.00	$ 448,560
8	Furnishing and Placing Topsoil	10,400	SY	$ 5.00	$ 52,000
				Paving Estimate Subtotal:	**$ 3,351,760**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 67,100
10	Traffic Control	5%	$ 167,600
11	Erosion Control	3%	$ 100,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 502,800
13	Landscaping	2%	$ 67,100
14	Illumination	3%	$ 100,600
	Other Components Estimate Subtotal:		**$ 1,005,800**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 4,357,560
Mobilization	5%	$ 217,900
Contingency	10%	$ 457,600
Construction Cost Estimate Total:		**$ 5,033,100**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 5,033,100
Engineering/Survey/Testing		13.0%	$ 654,300
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 5,687,400**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Lovers Lane

Mahard Pkwy to DNT

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	3,802		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	48		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	39	STA	$ 3,000.00	$ 117,000
2	Unclassified Street Excavation	13,600	CY	$ 30.00	$ 408,000
3	8" Lime Stabilized Subgrade	21,200	SY	$ 8.50	$ 180,200
4	Lime for Stabilization (48 lb/SY)	510	TON	$ 350.00	$ 178,500
5	9" CRCP	20,300	SY	$ 105.00	$ 2,131,500
6	Curb	15,210	LF	$ 30.00	$ 456,300
7	Concrete Sidewalk and Ramps	45,630	SF	$ 12.00	$ 547,560
8	Furnishing and Placing Topsoil	12,700	SY	$ 5.00	$ 63,500
				Paving Estimate Subtotal:	**$ 4,082,560**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 81,700
10	Traffic Control	5%	$ 204,200
11	Erosion Control	3%	$ 122,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 612,400
13	Landscaping	2%	$ 81,700
14	Illumination	3%	$ 122,500
	Other Components Estimate Subtotal:		**$ 1,225,000**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 5,307,560
Mobilization	5%	$ 265,400
Contingency	10%	$ 557,300
Construction Cost Estimate Total:		**$ 6,130,300**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 6,130,300
Engineering/Survey/Testing		13.0%	$ 796,900
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 6,927,200**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Coit Rd

US 380 to First St

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	6
Length (lf):	5,333		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	54	STA	$ 3,000.00	$ 162,000
2	Unclassified Street Excavation	9,500	CY	$ 30.00	$ 285,000
3	8" Lime Stabilized Subgrade	15,500	SY	$ 8.50	$ 131,750
4	Lime for Stabilization (48 lb/SY)	370	TON	$ 350.00	$ 129,500
5	9" CRCP	14,300	SY	$ 105.00	$ 1,501,500
6	Curb	10,670	LF	$ 30.00	$ 320,100
7	Concrete Sidewalk and Ramps	0	SF	$ 12.00	$ -
8	Furnishing and Placing Topsoil	0	SY	$ 5.00	$ -
				Paving Estimate Subtotal:	**$ 2,529,850**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 50,600
10	Traffic Control	5%	$ 126,500
11	Erosion Control	3%	$ 75,900
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	0%	$ -
13	Landscaping	0%	$ -
14	Illumination	0%	$ -
	Other Components Estimate Subtotal:		**$ 253,000**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 2,782,850
Mobilization	5%	$ 139,200
Contingency	10%	$ 292,300
Construction Cost Estimate Total:		**$ 3,214,400**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 3,214,400
Engineering/Survey/Testing		13.0%	$ 417,900
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 3,632,300**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Coit Rd

First St to Frontier Pkwy

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	3
Length (lf):	10,560		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Adding 2 lanes as Interim Major Thoroughfare		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	106	STA	$ 3,000.00	$ 318,000
2	Unclassified Street Excavation	18,800	CY	$ 30.00	$ 564,000
3	8" Lime Stabilized Subgrade	30,600	SY	$ 8.50	$ 260,100
4	Lime for Stabilization (48 lb/SY)	730	TON	$ 350.00	$ 255,500
5	9" CRCP	28,200	SY	$ 105.00	$ 2,961,000
6	Curb	42,240	LF	$ 30.00	$ 1,267,200
7	Concrete Sidewalk and Ramps	126,720	SF	$ 12.00	$ 1,520,640
8	Furnishing and Placing Topsoil	42,200	SY	$ 5.00	$ 211,000
				Paving Estimate Subtotal:	**$ 7,357,440**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 147,200
10	Traffic Control	5%	$ 367,900
11	Erosion Control	3%	$ 220,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 1,103,700
13	Landscaping	2%	$ 147,200
14	Illumination	3%	$ 220,800
	Other Components Estimate Subtotal:		**$ 2,207,600**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 9,565,040
Mobilization	5%	$ 478,300
Contingency	10%	$ 1,004,400
Construction Cost Estimate Total:		**$ 11,047,800**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 11,047,800
Engineering/Survey/Testing		13.0%	$ 1,436,200
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 12,484,000**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Frontier Pkwy

BNSF RR to Preston Rd

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	6
Length (lf):	5,333		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	54	STA	$ 3,000.00	$ 162,000
2	Unclassified Street Excavation	9,500	CY	$ 30.00	$ 285,000
3	8" Lime Stabilized Subgrade	15,500	SY	$ 8.50	$ 131,750
4	Lime for Stabilization (48 lb/SY)	370	TON	$ 350.00	$ 129,500
5	9" CRCP	14,300	SY	$ 105.00	$ 1,501,500
6	Curb	10,670	LF	$ 30.00	$ 320,100
7	Concrete Sidewalk and Ramps	64,000	SF	$ 12.00	$ 768,000
8	Furnishing and Placing Topsoil	21,300	SY	$ 5.00	$ 106,500
				Paving Estimate Subtotal:	**$ 3,404,350**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 68,100
10	Traffic Control	5%	$ 170,300
11	Erosion Control	3%	$ 102,200
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 510,700
13	Landscaping	2%	$ 68,100
14	Illumination	3%	$ 102,200
	Other Components Estimate Subtotal:		**$ 1,021,600**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 4,425,950
Mobilization	5%	$ 221,300
Contingency	10%	$ 464,800
Construction Cost Estimate Total:		**$ 5,112,100**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 5,112,100
Engineering/Survey/Testing		13.0%	$ 664,600
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 5,776,700**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Prosper Trl

864' E of Coit Rd to Custer Rd

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	9,768		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	98	STA	$ 3,000.00	$ 294,000
2	Unclassified Street Excavation	17,400	CY	$ 30.00	$ 522,000
3	8" Lime Stabilized Subgrade	28,300	SY	$ 8.50	$ 240,550
4	Lime for Stabilization (48 lb/SY)	680	TON	$ 350.00	$ 238,000
5	9" CRCP	26,100	SY	$ 105.00	$ 2,740,500
6	Curb	39,080	LF	$ 30.00	$ 1,172,400
7	Concrete Sidewalk and Ramps	117,220	SF	$ 12.00	$ 1,406,640
8	Furnishing and Placing Topsoil	16,300	SY	$ 5.00	$ 81,500
				Paving Estimate Subtotal:	**$ 6,695,590**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 134,000
10	Traffic Control	5%	$ 334,800
11	Erosion Control	3%	$ 200,900
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 1,004,400
13	Landscaping	2%	$ 134,000
14	Illumination	3%	$ 200,900
	Other Components Estimate Subtotal:		**$ 2,009,000**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 8,704,590
Mobilization	5%	$ 435,300
Contingency	10%	$ 914,000
Construction Cost Estimate Total:		**$ 10,053,900**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 10,053,900
Engineering/Survey/Testing		13.0%	$ 1,307,000
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 11,360,900**

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Town of Prosper

Planning Level Cost Estimate Worksheet

First St

BNSF RR to N Coleman St

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	1,954		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	20	STA	$ 3,000.00	$ 60,000
2	Unclassified Street Excavation	3,500	CY	$ 30.00	$ 105,000
3	8" Lime Stabilized Subgrade	5,700	SY	$ 8.50	$ 48,450
4	Lime for Stabilization (48 lb/SY)	140	TON	$ 350.00	$ 49,000
5	9" CRCP	5,300	SY	$ 105.00	$ 556,500
6	Curb	7,820	LF	$ 30.00	$ 234,600
7	Concrete Sidewalk and Ramps	23,450	SF	$ 12.00	$ 281,400
8	Furnishing and Placing Topsoil	3,300	SY	$ 5.00	$ 16,500
				Paving Estimate Subtotal:	**$ 1,351,450**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 27,100
10	Traffic Control	5%	$ 67,600
11	Erosion Control	3%	$ 40,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 202,800
13	Landscaping	2%	$ 27,100
14	Illumination	3%	$ 40,600
		Other Components Estimate Subtotal:	**$ 405,800**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 1,757,250
Mobilization	5%	$ 87,900
Contingency	10%	$ 184,600
Construction Cost Estimate Total:		**$ 2,029,800**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,029,800
Engineering/Survey/Testing		13.0%	$ 263,900
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 2,293,700**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Richland Blvd

Lovers Lane to 287' W of La Cima

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	1,954		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	48		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	20	STA	$ 3,000.00	$ 60,000
2	Unclassified Street Excavation	7,000	CY	$ 30.00	$ 210,000
3	8" Lime Stabilized Subgrade	10,900	SY	$ 8.50	$ 92,650
4	Lime for Stabilization (48 lb/SY)	260	TON	$ 350.00	$ 91,000
5	9" CRCP	10,500	SY	$ 105.00	$ 1,102,500
6	Curb	7,820	LF	$ 30.00	$ 234,600
7	Concrete Sidewalk and Ramps	23,450	SF	$ 12.00	$ 281,400
8	Furnishing and Placing Topsoil	6,500	SY	$ 5.00	$ 32,500
				Paving Estimate Subtotal:	**$ 2,104,650**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 42,100
10	Traffic Control	5%	$ 105,300
11	Erosion Control	3%	$ 63,200
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 315,700
13	Landscaping	2%	$ 42,100
14	Illumination	3%	$ 63,200
	Other Components Estimate Subtotal:		**$ 631,600**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 2,736,250
Mobilization	5%	$ 136,900
Contingency	10%	$ 287,400
Construction Cost Estimate Total:		**$ 3,160,600**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 3,160,600
Engineering/Survey/Testing		13.0%	$ 410,900
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 3,571,500**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Richland Blvd

160' E of La Cima to Prosper Commons

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	2,376		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	48		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	24	STA	$ 3,000.00	$ 72,000
2	Unclassified Street Excavation	8,500	CY	$ 30.00	$ 255,000
3	8" Lime Stabilized Subgrade	13,200	SY	$ 8.50	$ 112,200
4	Lime for Stabilization (48 lb/SY)	320	TON	$ 350.00	$ 112,000
5	9" CRCP	12,700	SY	$ 105.00	$ 1,333,500
6	Curb	9,510	LF	$ 30.00	$ 285,300
7	Concrete Sidewalk and Ramps	28,520	SF	$ 12.00	$ 342,240
8	Furnishing and Placing Topsoil	7,900	SY	$ 5.00	$ 39,500
				Paving Estimate Subtotal:	**$ 2,551,740**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 51,100
10	Traffic Control	5%	$ 127,600
11	Erosion Control	3%	$ 76,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 382,800
13	Landscaping	2%	$ 51,100
14	Illumination	3%	$ 76,600
	Other Components Estimate Subtotal:		**$ 765,800**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 3,317,540
Mobilization	5%	$ 165,900
Contingency	10%	$ 348,400
Construction Cost Estimate Total:		**$ 3,831,900**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 3,831,900
Engineering/Survey/Testing		13.0%	$ 498,100
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 4,330,000**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Coleman St

Lovers Lane to First St

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	2,006		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	21	STA	$ 3,000.00	$ 63,000
2	Unclassified Street Excavation	3,600	CY	$ 30.00	$ 108,000
3	8" Lime Stabilized Subgrade	5,800	SY	$ 8.50	$ 49,300
4	Lime for Stabilization (48 lb/SY)	140	TON	$ 350.00	$ 49,000
5	9" CRCP	5,400	SY	$ 105.00	$ 567,000
6	Curb	8,030	LF	$ 30.00	$ 240,900
7	Concrete Sidewalk and Ramps	12,040	SF	$ 12.00	$ 144,480
8	Furnishing and Placing Topsoil	4,000	SY	$ 5.00	$ 20,000
				Paving Estimate Subtotal:	**$ 1,241,680**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 24,900
10	Traffic Control	5%	$ 62,100
11	Erosion Control	3%	$ 37,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 186,300
13	Landscaping	2%	$ 24,900
14	Illumination	3%	$ 37,300
	Other Components Estimate Subtotal:		**$ 372,800**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 1,614,480
Mobilization	5%	$ 80,800
Contingency	10%	$ 169,600
Construction Cost Estimate Total:		**$ 1,864,900**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,864,900
Engineering/Survey/Testing		13.0%	$ 242,400
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 2,107,300**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Coleman St

Gorgeous Rd to Prosper Trl

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	2,640		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	27	STA	$ 3,000.00	$ 81,000
2	Unclassified Street Excavation	4,700	CY	$ 30.00	$ 141,000
3	8" Lime Stabilized Subgrade	7,700	SY	$ 8.50	$ 65,450
4	Lime for Stabilization (48 lb/SY)	180	TON	$ 350.00	$ 63,000
5	9" CRCP	7,100	SY	$ 105.00	$ 745,500
6	Curb	10,560	LF	$ 30.00	$ 316,800
7	Concrete Sidewalk and Ramps	15,840	SF	$ 12.00	$ 190,080
8	Furnishing and Placing Topsoil	5,300	SY	$ 5.00	$ 26,500
				Paving Estimate Subtotal:	**$ 1,629,330**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 32,600
10	Traffic Control	5%	$ 81,500
11	Erosion Control	3%	$ 48,900
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 244,400
13	Landscaping	2%	$ 32,600
14	Illumination	3%	$ 48,900
	Other Components Estimate Subtotal:		**$ 488,900**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 2,118,230
Mobilization	5%	$ 106,000
Contingency	10%	$ 222,500
Construction Cost Estimate Total:		**$ 2,446,800**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,446,800
Engineering/Survey/Testing		13.0%	$ 318,100
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 2,764,900**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Coleman St

Prosper Trl to Talon

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	3,221		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	33	STA	$ 3,000.00	$ 99,000
2	Unclassified Street Excavation	5,800	CY	$ 30.00	$ 174,000
3	8" Lime Stabilized Subgrade	9,400	SY	$ 8.50	$ 79,900
4	Lime for Stabilization (48 lb/SY)	230	TON	$ 350.00	$ 80,500
5	9" CRCP	8,600	SY	$ 105.00	$ 903,000
6	Curb	12,890	LF	$ 30.00	$ 386,700
7	Concrete Sidewalk and Ramps	19,330	SF	$ 12.00	$ 231,960
8	Furnishing and Placing Topsoil	6,400	SY	$ 5.00	$ 32,000
				Paving Estimate Subtotal:	**$ 1,987,060**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 39,800
10	Traffic Control	5%	$ 99,400
11	Erosion Control	3%	$ 59,700
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 298,100
13	Landscaping	2%	$ 39,800
14	Illumination	3%	$ 59,700
	Other Components Estimate Subtotal:		**$ 596,500**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 2,583,560
Mobilization	5%	$ 129,200
Contingency	10%	$ 271,300
Construction Cost Estimate Total:		**$ 2,984,100**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,984,100
Engineering/Survey/Testing		13.0%	$ 387,900
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 3,372,000**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Lovers Lane

BNSF RR to Gateway Dr

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	1,531		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	48		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	16	STA	$ 3,000.00	$ 48,000
2	Unclassified Street Excavation	5,500	CY	$ 30.00	$ 165,000
3	8" Lime Stabilized Subgrade	8,600	SY	$ 8.50	$ 73,100
4	Lime for Stabilization (48 lb/SY)	210	TON	$ 350.00	$ 73,500
5	9" CRCP	8,200	SY	$ 105.00	$ 861,000
6	Curb	6,130	LF	$ 30.00	$ 183,900
7	Concrete Sidewalk and Ramps	18,380	SF	$ 12.00	$ 220,560
8	Furnishing and Placing Topsoil	5,100	SY	$ 5.00	$ 25,500
				Paving Estimate Subtotal:	**$ 1,650,560**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 33,100
10	Traffic Control	5%	$ 82,600
11	Erosion Control	3%	$ 49,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 247,600
13	Landscaping	2%	$ 33,100
14	Illumination	3%	$ 49,600
		Other Components Estimate Subtotal:	**$ 495,600**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 2,146,160
Mobilization	5%	$ 107,400
Contingency	10%	$ 225,400
Construction Cost Estimate Total:		**$ 2,479,000**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,479,000
Engineering/Survey/Testing		13.0%	$ 322,300
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 2,801,300**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Victory Way

Coleman St to Frontier Pkwy

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	1,901		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	20	STA	$ 3,000.00	$ 60,000
2	Unclassified Street Excavation	3,400	CY	$ 30.00	$ 102,000
3	8" Lime Stabilized Subgrade	5,500	SY	$ 8.50	$ 46,750
4	Lime for Stabilization (48 lb/SY)	130	TON	$ 350.00	$ 45,500
5	9" CRCP	5,100	SY	$ 105.00	$ 535,500
6	Curb	7,610	LF	$ 30.00	$ 228,300
7	Concrete Sidewalk and Ramps	11,410	SF	$ 12.00	$ 136,920
8	Furnishing and Placing Topsoil	3,800	SY	$ 5.00	$ 19,000
				Paving Estimate Subtotal:	**$ 1,173,970**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 23,500
10	Traffic Control	5%	$ 58,700
11	Erosion Control	3%	$ 35,300
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 176,100
13	Landscaping	2%	$ 23,500
14	Illumination	3%	$ 35,300
	Other Components Estimate Subtotal:		**$ 352,400**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 1,526,370
Mobilization	5%	$ 76,400
Contingency	10%	$ 160,300
Construction Cost Estimate Total:		**$ 1,763,100**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,763,100
Engineering/Survey/Testing		13.0%	$ 229,200
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 1,992,300**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Teel Parkway

First St to Parvin Rd

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	6
Length (lf):	9,346		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	94	STA	$ 3,000.00	$ 282,000
2	Unclassified Street Excavation	16,700	CY	$ 30.00	$ 501,000
3	8" Lime Stabilized Subgrade	27,000	SY	$ 8.50	$ 229,500
4	Lime for Stabilization (48 lb/SY)	650	TON	$ 350.00	$ 227,500
5	9" CRCP	25,000	SY	$ 105.00	$ 2,625,000
6	Curb	18,700	LF	$ 30.00	$ 561,000
7	Concrete Sidewalk and Ramps	0	SF	$ 12.00	$ -
8	Furnishing and Placing Topsoil	0	SY	$ 5.00	$ -
				Paving Estimate Subtotal:	**$ 4,426,000**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 88,600
10	Traffic Control	5%	$ 221,300
11	Erosion Control	3%	$ 132,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	0%	$ -
13	Landscaping	0%	$ -
14	Illumination	0%	$ -
	Other Components Estimate Subtotal:		**$ 442,700**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 4,868,700
Mobilization	5%	$ 243,500
Contingency	10%	$ 511,300
Construction Cost Estimate Total:		**$ 5,623,500**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 5,623,500
Engineering/Survey/Testing		13.0%	$ 731,100
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 6,354,600**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Legacy Dr

Prosper Trl to Parvin Rd

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	6
Length (lf):	3,010		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	31	STA	$ 3,000.00	$ 93,000
2	Unclassified Street Excavation	5,400	CY	$ 30.00	$ 162,000
3	8" Lime Stabilized Subgrade	8,700	SY	$ 8.50	$ 73,950
4	Lime for Stabilization (48 lb/SY)	210	TON	$ 350.00	$ 73,500
5	9" CRCP	8,100	SY	$ 105.00	$ 850,500
6	Curb	6,020	LF	$ 30.00	$ 180,600
7	Concrete Sidewalk and Ramps	0	SF	$ 12.00	$ -
8	Furnishing and Placing Topsoil	0	SY	$ 5.00	$ -
				Paving Estimate Subtotal:	**$ 1,433,550**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 28,700
10	Traffic Control	5%	$ 71,700
11	Erosion Control	3%	$ 43,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	0%	$ -
13	Landscaping	0%	$ -
14	Illumination	0%	$ -
	Other Components Estimate Subtotal:		**$ 143,500**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 1,577,050
Mobilization	5%	$ 78,900
Contingency	10%	$ 165,600
Construction Cost Estimate Total:		**$ 1,821,600**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,821,600
Engineering/Survey/Testing		13.0%	$ 236,800
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 2,058,400**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Legacy Dr

Parvin Rd to Frontier Pkwy

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	6
Length (lf):	2,482		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	25	STA	$ 3,000.00	$ 75,000
2	Unclassified Street Excavation	4,500	CY	$ 30.00	$ 135,000
3	8" Lime Stabilized Subgrade	7,200	SY	$ 8.50	$ 61,200
4	Lime for Stabilization (48 lb/SY)	170	TON	$ 350.00	$ 59,500
5	9" CRCP	6,700	SY	$ 105.00	$ 703,500
6	Curb	4,970	LF	$ 30.00	$ 149,100
7	Concrete Sidewalk and Ramps	0	SF	$ 12.00	$ -
8	Furnishing and Placing Topsoil	0	SY	$ 5.00	$ -
				Paving Estimate Subtotal:	**$ 1,183,300**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 23,700
10	Traffic Control	5%	$ 59,200
11	Erosion Control	3%	$ 35,500
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	0%	$ -
13	Landscaping	0%	$ -
14	Illumination	0%	$ -
	Other Components Estimate Subtotal:		**$ 118,400**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 1,301,700
Mobilization	5%	$ 65,100
Contingency	10%	$ 136,700
Construction Cost Estimate Total:		**$ 1,503,500**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,503,500
Engineering/Survey/Testing		13.0%	$ 195,500
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 1,699,000**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Legacy Dr

First St to Prosper Trl

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	6
Length (lf):	5,755		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	58	STA	$ 3,000.00	$ 174,000
2	Unclassified Street Excavation	10,300	CY	$ 30.00	$ 309,000
3	8" Lime Stabilized Subgrade	16,700	SY	$ 8.50	$ 141,950
4	Lime for Stabilization (48 lb/SY)	400	TON	$ 350.00	$ 140,000
5	9" CRCP	15,400	SY	$ 105.00	$ 1,617,000
6	Curb	11,510	LF	$ 30.00	$ 345,300
7	Concrete Sidewalk and Ramps	0	SF	$ 12.00	$ -
8	Furnishing and Placing Topsoil	0	SY	$ 5.00	$ -
				Paving Estimate Subtotal:	**$ 2,727,250**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 54,600
10	Traffic Control	5%	$ 136,400
11	Erosion Control	3%	$ 81,900
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	0%	$ -
13	Landscaping	0%	$ -
14	Illumination	0%	$ -
	Other Components Estimate Subtotal:		**$ 272,900**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 3,000,150
Mobilization	5%	$ 150,100
Contingency	10%	$ 315,100
Construction Cost Estimate Total:		**$ 3,465,400**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 3,465,400
Engineering/Survey/Testing		13.0%	$ 450,500
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 3,915,900**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Parvin Rd

FM 1385 to 0.61 mi W of Legacy Drive

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	6
Length (lf):	14,995		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	150	STA	$ 3,000.00	$ 450,000
2	Unclassified Street Excavation	26,700	CY	$ 30.00	$ 801,000
3	8" Lime Stabilized Subgrade	43,400	SY	$ 8.50	$ 368,900
4	Lime for Stabilization (48 lb/SY)	1,040	TON	$ 350.00	$ 364,000
5	9" CRCP	40,000	SY	$ 105.00	$ 4,200,000
6	Curb	29,990	LF	$ 30.00	$ 899,700
7	Concrete Sidewalk and Ramps	0	SF	$ 12.00	$ -
8	Furnishing and Placing Topsoil	0	SY	$ 5.00	$ -
				Paving Estimate Subtotal:	**$ 7,083,600**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 141,700
10	Traffic Control	5%	$ 354,200
11	Erosion Control	3%	$ 212,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	0%	$ -
13	Landscaping	0%	$ -
14	Illumination	0%	$ -
	Other Components Estimate Subtotal:		**$ 708,500**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:	**$**	**-**

I, II, & III Construction Subtotal:	$	7,792,100
Mobilization 5%	$	389,700
Contingency 10%	$	818,200
Construction Cost Estimate Total:	**$**	**9,000,000**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 9,000,000
Engineering/Survey/Testing		13.0%	$ 1,170,000
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 10,170,000**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Frontier Pkwy

Legacy Dr to DNT

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	6
Length (lf):	5,702		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	58	STA	$ 3,000.00	$ 174,000
2	Unclassified Street Excavation	10,200	CY	$ 30.00	$ 306,000
3	8" Lime Stabilized Subgrade	16,500	SY	$ 8.50	$ 140,250
4	Lime for Stabilization (48 lb/SY)	400	TON	$ 350.00	$ 140,000
5	9" CRCP	15,300	SY	$ 105.00	$ 1,606,500
6	Curb	22,810	LF	$ 30.00	$ 684,300
7	Concrete Sidewalk and Ramps	0	SF	$ 12.00	$ -
8	Furnishing and Placing Topsoil	0	SY	$ 5.00	$ -
				Paving Estimate Subtotal:	**$ 3,051,050**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 61,100
10	Traffic Control	5%	$ 152,600
11	Erosion Control	3%	$ 91,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	0%	$ -
13	Landscaping	0%	$ -
14	Illumination	0%	$ -
	Other Components Estimate Subtotal:		**$ 305,300**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 3,356,350
Mobilization	5%	$ 167,900
Contingency	10%	$ 352,500
Construction Cost Estimate Total:		**$ 3,876,800**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 3,876,800
Engineering/Survey/Testing		13.0%	$ 504,000
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 4,380,800**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Shawnee Trl

Star Trace Pkwy to 982 ft N of Caruth Dr

Roadway Information:			
Functional Classification:	Minor Thoroughfare	No. of Lanes:	4
Length (lf):	5,755		
Right-of-Way Width (ft.):	90		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	58	STA	$ 3,000.00	$ 174,000
2	Unclassified Street Excavation	10,300	CY	$ 30.00	$ 309,000
3	8" Lime Stabilized Subgrade	16,700	SY	$ 8.50	$ 141,950
4	Lime for Stabilization (48 lb/SY)	400	TON	$ 350.00	$ 140,000
5	9" CRCP	15,400	SY	$ 105.00	$ 1,617,000
6	Curb	11,510	LF	$ 30.00	$ 345,300
7	Concrete Sidewalk and Ramps	34,530	SF	$ 12.00	$ 414,360
8	Furnishing and Placing Topsoil	9,600	SY	$ 5.00	$ 48,000
				Paving Estimate Subtotal:	**$ 3,189,610**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 63,800
10	Traffic Control	5%	$ 159,500
11	Erosion Control	3%	$ 95,700
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 478,500
13	Landscaping	2%	$ 63,800
14	Illumination	3%	$ 95,700
	Other Components Estimate Subtotal:		**$ 957,000**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 4,146,610
Mobilization	5%	$ 207,400
Contingency	10%	$ 435,500
Construction Cost Estimate Total:		**$ 4,789,600**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 4,789,600
Engineering/Survey/Testing		13.0%	$ 622,600
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 5,412,200**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Coit Rd

First St to Frontier Pkwy

Roadway Information:			
Functional Classification:	Major Thoroughfare	No. of Lanes:	6
Length (lf):	10,560		
Right-of-Way Width (ft.):	120		
Median Type:	Raised		
Pavement Width (BOC to BOC):	24		
Description:	Widen roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	106	STA	$ 3,000.00	$ 318,000
2	Unclassified Street Excavation	18,800	CY	$ 30.00	$ 564,000
3	8" Lime Stabilized Subgrade	30,600	SY	$ 8.50	$ 260,100
4	Lime for Stabilization (48 lb/SY)	730	TON	$ 350.00	$ 255,500
5	9" CRCP	28,200	SY	$ 105.00	$ 2,961,000
6	Curb	21,120	LF	$ 30.00	$ 633,600
7	Concrete Sidewalk and Ramps	0	SF	$ 12.00	$ -
8	Furnishing and Placing Topsoil	0	SY	$ 5.00	$ -
				Paving Estimate Subtotal:	**$ 4,992,200**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 99,900
10	Traffic Control	5%	$ 249,700
11	Erosion Control	3%	$ 149,800
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	0%	$ -
13	Landscaping	0%	$ -
14	Illumination	0%	$ -
	Other Components Estimate Subtotal:		**$ 499,400**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 5,491,600
Mobilization	5%	$ 274,600
Contingency	10%	$ 576,700
Construction Cost Estimate Total:		**$ 6,342,900**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 6,342,900
Engineering/Survey/Testing		13.0%	$ 824,600
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 7,167,500**

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Town of Prosper

Planning Level Cost Estimate Worksheet

New Road B

Prosper Trl to Frontier Pkwy

Roadway Information:			
Functional Classification:	Local Collector	No. of Lanes:	2
Length (lf):	5,333		
Right-of-Way Width (ft.):	60		
Median Type:	None		
Pavement Width (BOC to BOC):	24		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	54	STA	$ 3,000.00	$ 162,000
2	Unclassified Street Excavation	9,500	CY	$ 30.00	$ 285,000
3	8" Lime Stabilized Subgrade	15,500	SY	$ 8.50	$ 131,750
4	Lime for Stabilization (48 lb/SY)	370	TON	$ 350.00	$ 129,500
5	9" CRCP	14,300	SY	$ 105.00	$ 1,501,500
6	Curb	10,670	LF	$ 30.00	$ 320,100
7	Concrete Sidewalk and Ramps	53,330	SF	$ 12.00	$ 639,960
8	Furnishing and Placing Topsoil	8,300	SY	$ 5.00	$ 41,500
				Paving Estimate Subtotal:	**$ 3,211,310**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 64,300
10	Traffic Control	5%	$ 160,600
11	Erosion Control	3%	$ 96,400
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 481,700
13	Landscaping	2%	$ 64,300
14	Illumination	3%	$ 96,400
	Other Components Estimate Subtotal:		**$ 963,700**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 4,175,010
Mobilization	5%	$ 208,800
Contingency	10%	$ 438,400
Construction Cost Estimate Total:		**$ 4,822,300**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 4,822,300
Engineering/Survey/Testing		13.0%	$ 626,900
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 5,449,200**

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Town of Prosper

Planning Level Cost Estimate Worksheet

New Road C

New Road B to Greenwood Memorial Dr

Roadway Information:			
Functional Classification:	Commercial Couplet	No. of Lanes:	3
Length (lf):	1,637		
Right-of-Way Width (ft.):	65		
Median Type:	TWLTL		
Pavement Width (BOC to BOC):	53		
Description:	Construct new roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	17	STA	$ 3,000.00	$ 51,000
2	Unclassified Street Excavation	6,500	CY	$ 30.00	$ 195,000
3	8" Lime Stabilized Subgrade	10,100	SY	$ 8.50	$ 85,850
4	Lime for Stabilization (48 lb/SY)	240	TON	$ 350.00	$ 84,000
5	9" CRCP	9,700	SY	$ 105.00	$ 1,018,500
6	Curb	3,280	LF	$ 30.00	$ 98,400
7	Concrete Sidewalk and Ramps	19,650	SF	$ 12.00	$ 235,800
8	Furnishing and Placing Topsoil	0	SY	$ 5.00	$ -
				Paving Estimate Subtotal:	**$ 1,768,550**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 35,400
10	Traffic Control	5%	$ 88,500
11	Erosion Control	3%	$ 53,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 265,300
13	Landscaping	2%	$ 35,400
14	Illumination	3%	$ 53,100
	Other Components Estimate Subtotal:		**$ 530,800**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 2,299,350
Mobilization	5%	$ 115,000
Contingency	10%	$ 241,500
Construction Cost Estimate Total:		**$ 2,655,900**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,655,900
Engineering/Survey/Testing		13.0%	$ 345,300
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 3,001,200**

Town of Prosper

Planning Level Cost Estimate Worksheet

First St

N Coleman St to Craig St

Roadway Information:			
Functional Classification:	Commercial Couplet	No. of Lanes:	3
Length (lf):	2,429		
Right-of-Way Width (ft.):	65		
Median Type:	TWLTL		
Pavement Width (BOC to BOC):	29		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	25	STA	$ 3,000.00	$ 75,000
2	Unclassified Street Excavation	5,300	CY	$ 30.00	$ 159,000
3	8" Lime Stabilized Subgrade	8,400	SY	$ 8.50	$ 71,400
4	Lime for Stabilization (48 lb/SY)	200	TON	$ 350.00	$ 70,000
5	9" CRCP	7,900	SY	$ 105.00	$ 829,500
6	Curb	4,860	LF	$ 30.00	$ 145,800
7	Concrete Sidewalk and Ramps	29,150	SF	$ 12.00	$ 349,800
8	Furnishing and Placing Topsoil	0	SY	$ 5.00	$ -
				Paving Estimate Subtotal:	**$ 1,700,500**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 34,100
10	Traffic Control	5%	$ 85,100
11	Erosion Control	3%	$ 51,100
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 255,100
13	Landscaping	2%	$ 34,100
14	Illumination	3%	$ 51,100
		Other Components Estimate Subtotal:	**$ 510,600**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 2,211,100
Mobilization	5%	$ 110,600
Contingency	10%	$ 232,200
Construction Cost Estimate Total:		**$ 2,553,900**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,553,900
Engineering/Survey/Testing		13.0%	$ 332,000
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 2,885,900**

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Town of Prosper

Planning Level Cost Estimate Worksheet

McKinley St

Gorgeous Rd to Coleman St

Roadway Information:			
Functional Classification:	Commercial Couplet	No. of Lanes:	2
Length (lf):	950		
Right-of-Way Width (ft.):	65		
Median Type:	TWLTL		
Pavement Width (BOC to BOC):	40		
Description:	Construct new roadway as Interim thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	10	STA	$ 3,000.00	$ 30,000
2	Unclassified Street Excavation	2,900	CY	$ 30.00	$ 87,000
3	8" Lime Stabilized Subgrade	4,500	SY	$ 8.50	$ 38,250
4	Lime for Stabilization (48 lb/SY)	110	TON	$ 350.00	$ 38,500
5	9" CRCP	4,300	SY	$ 105.00	$ 451,500
6	Curb	1,900	LF	$ 30.00	$ 57,000
7	Concrete Sidewalk and Ramps	11,400	SF	$ 12.00	$ 136,800
8	Furnishing and Placing Topsoil	1,400	SY	$ 5.00	$ 7,000
				Paving Estimate Subtotal:	**$ 846,050**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 17,000
10	Traffic Control	5%	$ 42,400
11	Erosion Control	3%	$ 25,400
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 127,000
13	Landscaping	2%	$ 17,000
14	Illumination	3%	$ 25,400
	Other Components Estimate Subtotal:		**$ 254,200**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
	Special Components Estimate Subtotal:			**$ -**

I, II, & III Construction Subtotal:		$ 1,100,250
Mobilization	5%	$ 55,100
Contingency	10%	$ 115,600
Construction Cost Estimate Total:		**$ 1,271,000**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,271,000
Engineering/Survey/Testing		13.0%	$ 165,200
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 1,436,200**

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Town of Prosper

Planning Level Cost Estimate Worksheet

Craig Rd

Preston Rd to West Broadway St

Roadway Information:			
Functional Classification:	Commercial Couplet	No. of Lanes:	3
Length (lf):	2,218		
Right-of-Way Width (ft.):	65		
Median Type:	TWLTL		
Pavement Width (BOC to BOC):	29		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	23	STA	$ 3,000.00	$ 69,000
2	Unclassified Street Excavation	4,800	CY	$ 30.00	$ 144,000
3	8" Lime Stabilized Subgrade	7,700	SY	$ 8.50	$ 65,450
4	Lime for Stabilization (48 lb/SY)	180	TON	$ 350.00	$ 63,000
5	9" CRCP	7,200	SY	$ 105.00	$ 756,000
6	Curb	4,440	LF	$ 30.00	$ 133,200
7	Concrete Sidewalk and Ramps	26,620	SF	$ 12.00	$ 319,440
8	Furnishing and Placing Topsoil	0	SY	$ 5.00	$ -
				Paving Estimate Subtotal:	**$ 1,550,090**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 31,100
10	Traffic Control	5%	$ 77,600
11	Erosion Control	3%	$ 46,600
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 232,600
13	Landscaping	2%	$ 31,100
14	Illumination	3%	$ 46,600
	Other Components Estimate Subtotal:		**$ 465,600**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 2,015,690
Mobilization	5%	$ 100,800
Contingency	10%	$ 211,700
Construction Cost Estimate Total:		**$ 2,328,200**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 2,328,200
Engineering/Survey/Testing		13.0%	$ 302,700
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 2,630,900**

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Town of Prosper

Planning Level Cost Estimate Worksheet

West Broadway St

Craig Rd to Preston Rd

Roadway Information:			
Functional Classification:	Commercial Couplet	No. of Lanes:	3
Length (lf):	1,109		
Right-of-Way Width (ft.):	65		
Median Type:	TWLTL		
Pavement Width (BOC to BOC):	29		
Description:	Widen existing roadway to thoroughfare standard		

Roadway Construction Cost Estimate:

I. Paving Construction Cost Estimate

Item No.	Item Description	Quantity	Unit	Unit Cost	Item Cost
1	Right of Way Preparation	12	STA	$ 3,000.00	$ 36,000
2	Unclassified Street Excavation	2,400	CY	$ 30.00	$ 72,000
3	8" Lime Stabilized Subgrade	3,900	SY	$ 8.50	$ 33,150
4	Lime for Stabilization (48 lb/SY)	90	TON	$ 350.00	$ 31,500
5	9" CRCP	3,600	SY	$ 105.00	$ 378,000
6	Curb	2,220	LF	$ 30.00	$ 66,600
7	Concrete Sidewalk and Ramps	13,310	SF	$ 12.00	$ 159,720
8	Furnishing and Placing Topsoil	0	SY	$ 5.00	$ -
				Paving Estimate Subtotal:	**$ 776,970**

II. Non-Paving Construction Components

Item No.	Item Description	Pct. Of Paving	Item Cost
9	Pavement Markings & Signage	2%	$ 15,600
10	Traffic Control	5%	$ 38,900
11	Erosion Control	3%	$ 23,400
12	Drainage Improvements (RCP, Inlets, MH, Outfalls)	15%	$ 116,600
13	Landscaping	2%	$ 15,600
14	Illumination	3%	$ 23,400
	Other Components Estimate Subtotal:		**$ 233,500**

III. Special Construction Components

Item No.	Item Description	Notes	Allowance	Item Cost
15	Drainage Structures	None	$ -	$ -
16	Bridge Structures	None	$ -	$ -
17	Traffic Signals	None	$ -	$ -
18	Other	None	$ -	$ -
		Special Components Estimate Subtotal:		**$ -**

I, II, & III Construction Subtotal:		$ 1,010,470
Mobilization	5%	$ 50,600
Contingency	10%	$ 106,200
Construction Cost Estimate Total:		**$ 1,167,300**

Impact Fee Cost Estimate Summary

Item Description	Notes	Allowance	Item Cost
Construction		-	$ 1,167,300
Engineering/Survey/Testing		13.0%	$ 151,700
Right-of-Way Acquisition	Cost per sq. ft.: $ 1.00	$ -	$ -
	Impact Fee Project Cost Estimate Total:		**$ 1,319,000**

Appendix G
CIP Service Units of Supply

Serv Area	Reference CIP No.	Roadway	From	To	Project Status	Length (mi)	Added Lanes	Thoroughfare Plan Description	Lane Capacity	Pct. in Serv. Area	Peak Hour Volume A	B	Total	VMT Supply Pk Hr Total	VMT Demand Pk Hr Total	Excess VMT Capacity	CIP VMT Deficiency
1	1-Gee-a	Gee Rd	0.187 mi N of US 380	First St	Recoup	0.65	2	Major Thoroughfare	700	100%	460	637	1097	910	713	197	0
1	1-Gee-b	Gee Rd	0.187 mi N of US 380	First St	New	0.65	2	Major Thoroughfare	700	100%	0	0	0	910	0	910	0
1	1-Gee-c	Gee Rd	US 380	0.187 mi N of US 380	New	0.07	2	Major Thoroughfare	700	100%	0	0	0	98	0	98	0
1	1-Gee-d	Gee Rd	First St	FM 1385	New	0.97	4	Major Thoroughfare	700	100%	0	0	0	2716	0	2716	0
1	1-Tel-a	Teel Pkwy	US 380	871ft N of US 380	Recoup	0.17	2	Major Thoroughfare	700	100%	700	397	1097	238	186	52	0
1	1-Tel-c	Teel Pkwy	First St	314 ft S of First St	Recoup	0.05	2	Major Thoroughfare	700	100%	640	397	1037	70	52	18	0
1	1-Tel-b	Teel Pkwy	871ft N of US 380	314 ft S of First St	Recoup	0.51	2	Major Thoroughfare	700	100%	660	397	1057	714	539	175	0
1	1-Tel-d	Teel Pkwy	US 380	First St	New	0.73	2	Major Thoroughfare	700	100%	0	0	0	1022	0	1022	0
1	1-Tel-e	Teel Pkwy	First St	381 ft N of Roundtree Dr	New	0.56	2	Major Thoroughfare	700	100%	0	0	0	784	0	784	0
1	1-Tel-f	Teel Pkwy	88 ft N of N Windsong Pk	381 ft N of Roundtree Dr	Recoup	0.36	2	Major Thoroughfare	700	100%	279	101	380	504	137	367	0
1	1-Tel-g	Teel Pkwy	88 ft N of N Windsong Pk	Prosper Trl	New	0.30	2	Major Thoroughfare	700	100%	0	0	0	420	0	420	0
1	1-Tel-h	Teel Pkwy	First St	Parvin Rd	New	1.77	2	Major Thoroughfare	700	100%	0	0	0	2478	0	2478	0
1	1-Tel-i	Teel Pkwy	Prosper Trl	Parvin Rd	New	1.23	2	Major Thoroughfare	700	100%	0	0	0	1722	0	1722	0
1	1-Lgy-b	Legacy Dr	Scarlet	First St	New	0.41	4	Major Thoroughfare	700	100%	0	0	0	1148	0	1148	0
1	1-Lgy-a	Legacy Dr	US 380	Scarlet Dr	Recoup	0.60	4	Major Thoroughfare	700	100%	250	250	500	1680	300	1380	0
1	1-Lgy-c	Legacy Dr	US 380	First St	New	1.00	2	Major Thoroughfare	700	100%	0	0	0	1400	0	1400	0
1	1-Lgy-f	Legacy Dr	Prosper Trl	Parvin Rd	New	0.57	2	Major Thoroughfare	700	100%	0	0	0	798	0	798	0
1	1-Lgy-g	Legacy Dr	Prosper Trl	Parvin Rd	New	0.57	2	Major Thoroughfare	700	100%	0	0	0	798	0	798	0
1/X	1-Lgy-h	Legacy Dr	Parvin Rd	Frontier Pkwy	New	0.47	2	Major Thoroughfare	700	50%	0	0	0	329	0	329	0
1/X	1-Lgy-i	Legacy Dr	Parvin Rd	Frontier Pkwy	New	0.47	2	Major Thoroughfare	700	50%	0	0	0	329	0	329	0
1	1-Lgy-d	Legacy Dr	First St	Prosper Trl	New	1.09	2	Major Thoroughfare	700	100%	0	0	0	1526	0	1526	0
1	1-Lgy-e	Legacy Dr	First St	Prosper Trl	New	1.09	2	Major Thoroughfare	700	100%	0	0	0	1526	0	1526	0
1	1-Rd-a	New Road A	US 380	First St	New	1.01	2	Commercial Collector	450	100%	0	0	0	909	0	909	0
1	1-Rd-c	New Road C	New Road B	Greenwood Memorial Dr	New	0.31	3	Commercial Collector	500	100%	0	0	0	310	0	310	0
1	1-Rd-b	New Road B	Prosper Trl	Frontier Pkwy	New	1.01	2	Commercial Collector	450	100%	0	0	0	909	0	909	0
1/X	1-Pvn-a	Parvin Rd	FM 1385	0.61 mi W of Legacy Drive	New	2.84	2	Major Thoroughfare	700	50%	0	0	0	1988	0	1988	0
1/X	1-Pvn-b	Parvin Rd	FM 1385	0.61 mi W of Legacy Drive	New	2.84	2	Major Thoroughfare	700	50%	0	0	0	1988	0	1988	0
1/X	1-FP-a	Frontier Pkwy	Legacy Dr	DNT	New	1.08	2	Major Thoroughfare	700	50%	0	0	0	756	0	756	0
1/X	1-FP-b	Frontier Pkwy	Legacy Dr	DNT	New	1.08	2	Major Thoroughfare	700	50%	0	0	0	756	0	756	0
1/X	1-FP-c	Frontier Pkwy	DNT	BNSF RR	Recoup	1.08	2	Major Thoroughfare	700	50%	384	0	384	756	415	341	0
1/X	1-FP-d	Frontier Pkwy	DNT	BNSF RR	New	1.08	2	Major Thoroughfare	700	50%	0	0	0	756	0	756	0
1	1-MP-a	Mahard Pkwy	US 380	Prairie Dr	Recoup	0.36	4	Major Thoroughfare	650	100%	384	391	775	936	279	657	0
1	1-MP-b	Mahard Pkwy	Prairie Dr	500 N of Prairie Dr	Recoup	0.10	2	Major Thoroughfare	650	100%	384	391	775	130	78	53	0
1	1-MP-c	Mahard Pkwy	Prairie Dr	500 N of Prairie Dr	New	0.10	2	Major Thoroughfare	650	100%	0	0	0	130	0	130	0
1	1-MP-d	Mahard Pkwy	500 N of Prairie Dr	Lovers Lane	New	0.13	4	Major Thoroughfare	650	100%	0	0	0	338	0	338	0
1	1-Saf-a	Safety Way	DNT	Mike Howard	Recoup	0.48	2	Commercial Collector	450	100%	200	250	450	432	216	216	0
1	1-PT-a	Prosper Trl	Teel Pkwy	2550' E of Teel Pkwy	New	0.77	2	Minor Thoroughfare	650	100%	0	0	0	1001	0	1001	0
1	1-PT-b	Prosper Trl	1617' E of Teel Pkwy	3149' E of Teel Pkwy	New	0.29	2	Minor Thoroughfare	650	100%	0	0	0	377	0	377	0
1	1-PT-c	Prosper Trl	3149' E of Teel Pkwy	Legacy Dr	New	0.30	2	Minor Thoroughfare	650	100%	0	0	0	390	0	390	0
1	1-PT-d	Prosper Trl	Legacy Dr	DNT	New	1.09	2	Minor Thoroughfare	650	100%	0	0	0	1417	0	1417	0
1	1-PT-e	Prosper Trl	DNT	BNSF RR	Recoup	0.88	2	Minor Thoroughfare	650	100%	344	358	702	1144	618	526	0
1	1-1st-a	First St	Gee Rd	Teel Pkwy	Recoup	1.19	2	Minor Thoroughfare	650	100%	163	582	745	1547	887	660	0
1	1-1st-b	First St	Teel Pkwy	Stuber E.S.	Recoup	1.01	2	Minor Thoroughfare	650	100%	157	157	313	1313	317	996	0
1	1-1st-c	First St	Stuber E.S.	DNT	New	1.41	2	Minor Thoroughfare	650	100%	0	0	0	1833	0	1833	0
1	1-1st-d	First St	DNT	BNSF RR	New	0.68	2	Minor Thoroughfare	650	100%	0	0	0	884	0	884	0
1	1-PD-a	Prairie Dr	Teel Pkwy	290 ft W of Waters Edge V	New	0.52	4	Minor Thoroughfare	650	100%	0	0	0	1352	0	1352	0
1	1-PD-b	Prairie Dr	290 ft W of Waters Edge V	Shawnee Trl	Recoup	1.64	4	Minor Thoroughfare	650	100%	425	425	850	4264	1394	2870	0
1	1-ST-c	Shawnee Trl	Star Trace Pkwy	982 ft N of Caruth Dr	Recoup	1.09	2	Minor Thoroughfare	650	100%	20	20	40	1417	44	1373	0
1	1-ST-b	Shawnee Trl	Lovers Lane	Star Trace Pkwy	New	0.88	4	Minor Thoroughfare	650	100%	0	0	0	2288	0	2288	0
1	1-ST-d	Shawnee Trl	Star Trace Pkwy	982 ft N of Caruth Dr	New	1.09	2	Minor Thoroughfare	650	100%	0	0	0	1417	0	1417	0
1	1-ST-e	Shawnee Trl	982 ft N of Caruth Dr	Frontier Pkwy	New	0.46	4	Minor Thoroughfare	650	100%	0	0	0	1196	0	1196	0
1	1-LL-b	Lovers Lane	DNT	BNSF RR	New	0.59	4	Minor Thoroughfare	650	100%	0	0	0	1534	0	1534	0
1	1-LL-a	Lovers Lane	Mahard Pkwy	DNT	New	0.72	4	Minor Thoroughfare	650	100%	0	0	0	1872	0	1872	0
1	1-Mik-a	Mike Howard	First St	1,200 ft S of Prosper Trl	Recoup	0.76	2	Commercial Collector	450	100%	100	150	250	684	190	494	0
Sub-total SA 1						43.16							**10,453**	**59,144**	**6,363**	**52,781**	**0**

Serv Area	Reference CIP No.	Roadway	From	To	Project Status	Length (mi)	Added Lanes	Thoroughfare Plan Description	Lane Capacity	Pct. in Serv. Area	Peak Hour Volume A	B	Total	VMT Supply Pk Hr Total	VMT Demand Pk Hr Total	Excess VMT Capacity	CIP VMT Deficiency
2	2-Ct-a	Coit Rd	US 380	First St	New	1.01	2	Major Thoroughfare	700	100%	0	0	0	1414	0	1414	0
2	2-Ct-b	Coit Rd	First St	Frontier Pkwy	New	2.00	2	Major Thoroughfare	700	100%	0	0	0	2800	0	2800	0
2	2-Ct-c	Coit Rd	First St	Frontier Pkwy	New	2.00	2	Major Thoroughfare	700	100%	0	0	0	2800	0	2800	0
2/X	2-FP-a	Frontier Pkwy	BNSF RR	Preston Rd	Recoup	1.01	2	Major Thoroughfare	700	50%	475	0	475	707	480	227	0
2/X	2-FP-b	Frontier Pkwy	BNSF RR	Preston Rd	New	1.01	2	Major Thoroughfare	700	50%	0	0	0	707	0	707	0
2	2-PT-a	Prosper Trl	BNSF RR	Preston Rd	Recoup	1.11	2	Minor Thoroughfare	650	100%	623	588	1211	1443	1345	98	0
2	2-PT-c	Prosper Trl	560' E of Preston Rd	Coit Rd	Recoup	0.83	2	Minor Thoroughfare	650	100%	550	586	1135	1079	942	137	0
2	2-PT-b	Prosper Trl	560' E of Preston Rd	Preston Rd	Recoup	0.18	2	Minor Thoroughfare	650	100%	550	586	1135	234	204	30	0
2	2-PT-d	Prosper Trl	864' E of Coit Rd	Custer Rd	New	1.76	2	Minor Thoroughfare	650	100%	0	0	0	2288	0	2288	0
2	2-1st-a	First St	BNSF RR	N Coleman St	New	0.37	2	Minor Thoroughfare	650	100%	0	0	0	481	0	481	0
2	2-1st-b	First St	N Coleman St	Craig St	New	0.46	2	Minor Thoroughfare	525	100%	0	0	0	483	0	483	0
2	2-1st-c	First St	Craig St	Coit Rd	Recoup	1.51	2	Minor Thoroughfare	650	100%	146	153	299	1963	452	1511	0
2	2-1st-d	First St	Coit Rd	Custer Rd	Recoup	2.06	2	Minor Thoroughfare	650	100%	181	117	298	2678	614	2064	0
2	2-RB-a	Richland Blvd	Coleman	Lovers Lane	Recoup	0.56	4	Minor Thoroughfare	650	100%	250	250	500	1456	280	1176	0
2	2-RB-b	Richland Blvd	Lovers Lane	287' W of La Cima	New	0.37	4	Minor Thoroughfare	650	100%	0	0	0	962	0	962	0
2	2-RB-c	Richland Blvd	287' W of La Cima	160' E of La Cima	Recoup	0.41	4	Minor Thoroughfare	650	100%	25	25	50	1066	21	1046	0
2	2-RB-d	Richland Blvd	160' E of La Cima	Prosper Commons	New	0.45	4	Minor Thoroughfare	650	100%	0	0	0	1170	0	1170	0
2	2-Col-a	Coleman St	Richland Blvd	Lovers Lane	Recoup	0.27	2	Minor Thoroughfare	650	100%	258	326	584	351	158	193	0
2	2-Col-b	Coleman St	Lovers Lane	First St	New	0.38	2	Minor Thoroughfare	650	100%	0	0	0	494	0	494	0
2	2-Col-c	Coleman St	Gorgeous Rd	Prosper Trl	New	0.50	2	Minor Thoroughfare	650	100%	0	0	0	650	0	650	0
2	2-Col-d	Coleman St	Prosper Trl	Talon	New	0.61	2	Minor Thoroughfare	650	100%	0	0	0	793	0	793	0
2	2-Col-e	Coleman St	Talon	Victory Way	Recoup	0.46	2	Minor Thoroughfare	650	100%	287	402	689	598	317	281	0
2	2-Col-f	Coleman St	Victory Way	Preston Rd	Recoup	0.51	4	Minor Thoroughfare	650	100%	287	402	689	1326	351	975	0
2	2-LL-b	Lovers Lane	Gateway Dr	US 380	Recoup	1.12	4	Minor Thoroughfare	650	100%	287	402	689	2912	772	2140	0
2	2-LL-a	Lovers Lane	BNSF RR	Gateway Dr	New	0.29	4	Minor Thoroughfare	650	100%	0	0	0	754	0	754	0
2	2-Vty-a	Victory Way	Coleman St	Frontier Pkwy	Recoup	0.36	2	Minor Thoroughfare	650	100%	450	450	900	468	324	144	0
2	2-Vty-b	Victory Way	Coleman St	Frontier Pkwy	New	0.36	2	Minor Thoroughfare	650	100%	0	0	0	468	0	468	0
2	2-Mck-a	McKinley St	Gorgeous Rd	W 5th St	Recoup	0.22	2	Old Town District	500	100%	195	195	390	110	86	24	0
2	2-Mck-b	McKinley St	Gorgeous Rd	Coleman St	New	0.18	2	Old Town District	500	100%	0	0	0	90	0	90	0
2	2-Crg-a	Craig Rd	Preston Rd	West Broadway St	New	0.42	2	Commercial Couplet	500	100%	0	0	0	210	0	210	0
2	2-WB-a	West Broadway St	Craig	Preston Rd	New	0.21	2	Old Town District	500	100%	0	0	0	105	0	105	0
Sub-total SA 2						22.99							**9,046**	**33,060**	**6,345**	**26,715**	**0**

Appendix H
Existing Roadway Facilities Inventory

Serv Area	Shared Svc Area	Roadway	From	To	Length (mi)	No. of Lanes	Type	Lane Capacity	Pct. in Serv. Area	Peak Hour Volume A	Peak Hour Volume B	Peak Hour Volume Total	VMT Supply A Dir Pk Dir	VMT Supply B Dir Pk Dir	VMT Supply Pk Hr Total	VMT Demand Pk Hr Total	Total VMT Excess Capacity	Total VMT Deficiency
1	x	*US 380*	*FM 1385*	*Gee Road*	1.01	5	*SRA*	925	50%		1619	1619	0	1869	1869	1635	234	0
1	x	*US 380*	*Gee Road*	*Legacy Drive*	2.04	5	*SRA*	925	50%		1619	1619	0	3774	3774	3301	472	0
1	x	*US 380*	*Legacy Drive*	*Dallas Parkway*	1.45	5	*SRA*	925	50%		1619	1619	0	2683	2683	2347	336	0
1	x	*US 380*	*Dallas Parkway*	*Railroad*	0.45	6	*SRA*	925	50%		1619	1619	0	1249	1249	728	520	0
1		*FM 1385*	*US 380*	*Parvin Road*	2.29	2	*2UC*	450	50%	918		918	1028	0	1028	2098	0	1069
1		*Parvin Road*	*FM 1385*	*E of Teel Pkwy*	2.65	2	*2UC*	450	50%	43		43	1193	0	1193	114	1079	0
1		*Frontier Parkway*	*Legacy Drive*	*Dallas Parkway*	1.08	2	*2UC*	450	50%	287		287	487	0	487	310	177	0
1		*Frontier Parkway*	*Dallas Parkway*	*Railroad*	1.09	4	*4DA*	650	50%	384		384	1416	0	1416	418	998	0
1		*Legacy Drive*	*Frontier Parkway*	*Fishtrap Road*	2.14	2	*2UC*	450	100%	85	58	143	965	965	1930	307	1623	0
1		*Fishtrap Road*	*FM 1385*	*Legacy Drive*	3.41	2	*2UC*	450	100%	163	182	345	1534	1534	3068	1176	1892	0
1		*First Street*	*Legacy Drive*	*Dallas Parkway*	1.17	2	*2UC*	450	100%	660	815	1475	527	527	1053	1726	0	673
1		*First Street*	*Dallas Parkway*	*Railroad*	0.64	2	*2UC*	450	100%	2694	2694	5389	288	288	576	3450	0	2874
1		*Prosper Trail*	*Teel Pkwy*	*Dallas Parkway*	2.41	2	*2UR*	150	100%	273	273	547	362	362	723	1318	0	595
1		*Prosper Trail*	*Dallas Parkway*	*Railroad*	0.76	4	*4DA*	650	100%	1718	1791	3509	990	990	1980	2671	0	692
1		*Gee Road*	*US 380*	*Fishtrap Road*	0.77	2	*2UC*	450	100%	460	637	1097	344	344	689	839	0	151
1		*Teel Pkwy*	*US 380*	*Prosper Trail*	1.98	2	*2UC*	450	100%	709	397	1106	891	891	1781	2189	105	513
1		*Dallas Parkway*	*Frontier Parkway*	*Prosper Trail*	0.98	2	*2UA*	700	100%		275	275	0	686	686	270	416	0
1		*Dallas Parkway*	*Prosper Trail*	*First Street*	1.01	2	*2UA*	700	100%		636	636	0	707	707	642	65	0
1		*Dallas Parkway*	*First Street*	*US 380*	1.02	2	*2UA*	700	100%		632	632	0	714	714	644	70	0
Sub-Total													**10,024**	**17,580**	**27,604**	**26,183**	**7,986**	**6,566**
2	x	*US 380*	*Railroad*	*Preston Road*	0.57	6	*SRA*	925	50%		1762	1762	0	1587	1587	1008	579	0
2	x	*US 380*	*Preston Road*	*La Cima Boulevard*	1.03	6	*SRA*	925	50%		1762	1762	0	2859	2859	1815	1044	0
2	x	*US 380*	*La Cima Boulevard*	*Coit Road*	0.96	6	*SRA*	925	50%		1762	1762	0	2665	2665	1692	973	0
2	x	*US 380*	*Coit Road*	*Custer Road*	2.01	6	*SRA*	925	50%		1762	1762	0	5587	5587	3547	2040	0
2		*First Street*	*Railroad*	*Coleman Street*	0.37	2	*2UC*	450	100%	454	429	883	167	167	333	327	8	1
2		*First Street*	*Coleman Street*	*Craig Road*	0.46	2	*2UC*	450	100%	369	319	687	208	208	415	317	98	0
2		*First Street*	*Craig Road*	*Coit Road*	1.51	4	*4DA*	650	100%	469	468	937	1961	1961	3922	1414	2508	0
2		*First Street*	*Coit Road*	*Custer Road*	2.05	4	*4DA*	650	100%	181	117	298	2666	2666	5333	611	4722	0
2		*Prosper Trail*	*Railroad*	*Coleman Street*	0.13	4	*4DA*	650	100%	369	389	758	170	170	340	99	241	0
2		*Prosper Trail*	*Coleman Street*	*Preston Road*	0.97	4	*4DA*	650	100%	657	610	1267	1261	1261	2521	1228	1293	0
2		*Prosper Trail*	*Preston Road*	*Coit Road*	1.02	4	*4DA*	650	100%	550	586	1135	1330	1330	2659	1161	1498	0
2		*Prosper Trail*	*Coit Road*	*4000' W of Custer Rd*	1.26	2	*2UA*	700	100%	536	430	966	879	879	1758	1213	545	0
2	x	*Prosper Trail*	*4000' W of Custer Rd*	*2650' W of Custer Rd*	0.26	2	*2UA*	700	50%	536		536	179	0	179	137	42	0
2	x	*Prosper Trail*	*2190' W of Custer Rd*	*1915' W of Custer Rd*	0.05	2	*2UA*	700	50%	536		536	36	0	36	28	9	0
2		*Prosper Trail*	*1915' W of Custer Rd*	*Custer Road*	0.36	2	*2UA*	700	100%	536	430	966	254	254	508	350	157	0
2	x	*Frontier Parkway*	*Railroad*	*Preston Road*	0.86	4	*4DA*	650	50%	439		439	1120	0	1120	379	742	0
2	x	*Frontier Parkway*	*Preston Road*	*Coit Road*	0.99	2	*2UA*	700	50%	696		696	692	0	692	688	4	0
2	x	*Frontier Parkway*	*Coit Road*	*6495' E of Coit*	1.23	2	*2UA*	700	50%	464		464	861	0	861	571	290	0
2	x	*Frontier Parkway*	*4170' W of Custer*	*Custer Road*	0.52	2	*2UA*	700	50%	464		464	367	0	367	243	124	0
2		*Preston Road*	*Frontier Parkway*	*Prosper Trail*	1.00	6	*6DA*	700	100%	1871	1905	3776	2098	2098	4196	3772	424	0
2		*Preston Road*	*Prosper Trail*	*First Street*	1.06	6	*6DA*	700	100%	2375	2491	4866	2223	2223	4447	5152	0	705
2		*Preston Road*	*First Street*	*US 380*	1.19	6	*6DA*	700	100%	2062	2243	4305	2504	2504	5007	5133	46	171
2		*Coleman Street*	*Preston Road*	*Prosper Trail*	2.56	2	*2UA*	700	100%	287	402	689	1794	1794	3589	1766	1823	0
2		*Coleman Street*	*Prosper Trail*	*First Street*	0.98	2	*2UA*	700	100%	386	393	779	686	686	1372	764	609	0
2		*Coleman Street*	*First Street*	*Richland Blvd*	0.65	2	*2UA*	700	100%	258	326	584	454	454	909	379	530	0
2		*La Cima Boulevard*	*First Street*	*US 380*	1.31	4	*4DA*	650	100%	200	210	410	1709	1709	3417	539	2878	0
2		*Hays Road*	*Preston Road*	*First Street*	0.88	2	*2UC*	450	100%	80	80	160	396	396	793	141	652	0
2		*Coit Road*	*Frontier Parkway*	*Prosper Trail*	1.00	2	*2UA*	700	100%	133	133	266	702	702	1404	267	1137	0
2		*Coit Road*	*Prosper Trail*	*First Street*	1.01	2	*2UA*	700	100%	777	641	1418	706	706	1412	1430	60	78
2		*Coit Road*	*First Street*	*US 380*	1.01	4	*4DA*	650	100%	861	839	1701	1310	1310	2620	1714	906	0
2	x	*Custer Road*	*2710' S of Frontier Pkwy*	*Prosper Trail*	0.49	4	*4DA*	650	50%		404	404	0	641	641	199	442	0
2	x	*Custer Road*	*Prosper Trail*	*First Street*	0.76	4	*4DA*	650	50%		545	545	0	987	987	414	574	0
2	x	*Custer Road*	*First Street*	*US 380*	1.24	4	*4DA*	650	50%		965	965	0	1615	1615	1199	416	0
Sub-Total													**26,733**	**39,419**	**66,152**	**39,696**	**27,411**	**956**

Appendix I
Impact Fee Ordinance