

REQUEST FOR BOARD ACTION

BOARD OF COMMISSIONERS OF HENDERSON COUNTY ACTING AS

CANE CREEK WATER AND SEWER DISTRICT BOARD OF DIRECTORS

MEETING DATE: September 3, 2019

SUBJECT: Draft Capital Improvement Plan (CIP)
FY2019 Master Plan Update

PRESENTER: Marcus A. Jones, P.E.

ATTACHMENTS: Yes

1. WGLA Engineering (WGLA) Cover Memo
2. WGLA CIP Project Summaries (Scopes)
3. WGLA Project Maps
4. WGLA Project Estimates

SUMMARY OF REQUEST:

As directed by the Board with the approval of the WGLA Engineering agreement to update the District Master Plan during the January 7, 2019 meeting as the firm, staff presents the attached Draft CIP for Board's consideration regarding the projects, their scopes and / or the priority.

With the pending merger of the District to MSD of Buncombe County, this CIP update is important. It will be included incorporated into MSD's CIP and in turn included in MSD's report to the Environmental Management Commission as required by the governing statute.

BOARD ACTION REQUESTED:

Approve the draft 2019 Capital Improvement Plan as presented

Suggested Motion:

Acting as the Board of Directors of the Cane Creek Water and Sewer District, I move that the Board approve the draft 2019 Capital Improvement Plan as presented

MEMORANDUM

TO: Mr. Marcus Jones, P.E.; County Engineer
Henderson County

FROM: Will Buie, P.E. *WRB*
WGLA Engineering, PLLC

RE: Cane Creek Basinwide Study Update
Priority Projects
WGLA #19101

DATE: August 26, 2019

As discussed, our efforts on the Cane Creek master plan update have focused on updating the mapping and identifying/updating the list of priority projects for the District. The priority projects are identified as projects that are regional in nature would require involvement from the District. This may simply be involvement during the planning and design stages, or it could involve full implementation of the project by the District.

During the original basinwide study completed in 2009, nine priority projects were identified. Of those nine projects, three have been completed and one is under construction. The Fletcher Warehouse project was completed through a partnership with NCDOT and private landowners. The Mills River Extension was completed through a partnership between developers and private land owners. The Millpond Creek project was completed by the District to eliminate the wastewater discharges from two schools and to eliminate several pump stations. The Mud Creek project is being completed in partnership with private land owners and will eliminate a wastewater discharge. Taking advantage of these partnerships and implementing these projects would not have been possible without identifying these projects during the study process.

The identification and prioritization of these future projects will allow the District and Henderson County to again take advantage of potential partnerships to implement the projects. The priority projects are separated into short term, intermediate and long term projects. Input to this prioritization process by County Staff and the County Commissioners will help to focus efforts for funding or identifying partnerships.

Attached this this memorandum is a summary of each of the current projects identified, an initial ranking of projects, preliminary projects costs and maps for all of the proposed priority projects. We look forward to receiving feedback from you and the Commissioners. If you have any questions or need further information, don't hesitate to contact our office.

Cane Creek Water and Sewer District FY 19 Drainage Basin Study

Priority Projects

Priority projects are identified as projects that are regional in nature and require involvement from the Cane Creek Water and Sewer District for planning and design at a minimum and may involve full implementation of the project by the District. The priority projects are identified as Short Term (should be implemented over the next 5 years), Intermediate (should be implemented over 5 – 10 years depending on demand, growth and development and Long Term (would be implemented beyond the 10-year planning window). Below is a description of each project identified:

Short Term Projects:

Bolyston Creek Pump Station and Phase 1 Interceptor

This project involves the construction of a new regional pump station near the intersection of School House Road and Ladson Road along Bolyston Creek. This station and Phase 1 of the interceptor would allow for the abandonment of the existing District pump station at the Tri-Hishtil facility along with multiple private pump stations along NC 191.

ITT Pump Station Upgrade

The ITT pump station is located in Broadpointe Industrial Park adjacent to the UPM Raflatac facility. The access to the pump station is located in a flood plain area. Additionally, this station likely needs additional wet well capacity and potentially an upgrade of the pumps. The project likely involves the negotiation of a new access route through the Raflatac property and an upgrade of the station.

Intermediate Projects:

Mud Creek Interceptor/Extension Phase 3

This project involves the extension of gravity sewer along Mud Creek to the Mountain Home Industrial Park. The extension would potentially allow for the abandonment of an existing District pump station that connections to the City of Hendersonville system along with the abandonment of several private pump stations.

Howard Gap Interceptor:

The Howard Gap Interceptor is an extension of the current Mud Creek interceptor project and would provide sewer service to the Howard Gap Road/Brookside Camp Road area of the County. The extension could provide sewer service to allow for the abandonment of multiple private wastewater treatment facilities and would provide sewer service to a high density area currently served by septic systems.

Long Term Projects:

Boylston Creek Interceptor Phase 2

This interceptor would be an extension of the work completed with the Boylston Creek Pump Station and Phase 1 Interceptor. The extension could provide sewer service to the NC 280 corridor in the western portion of the County and Mills River.

French Broad River Interceptor

The French Broad River Interceptor is also an extension from the Boylston Creek Pump Station. It would provide sewer service along the western side of the French Broad River along Banner Farm Road and into the Horse Shoe Community.

Shaws Creek Pump Station and Interceptor

The Shaws Creek Pump Station and Interceptor would connect to the French Broad River Interceptor via force main and would allow for the abandonment of a private wastewater treatment facility while also providing sewer service along the US 64 West corridor.

McDowell Creek Interceptor

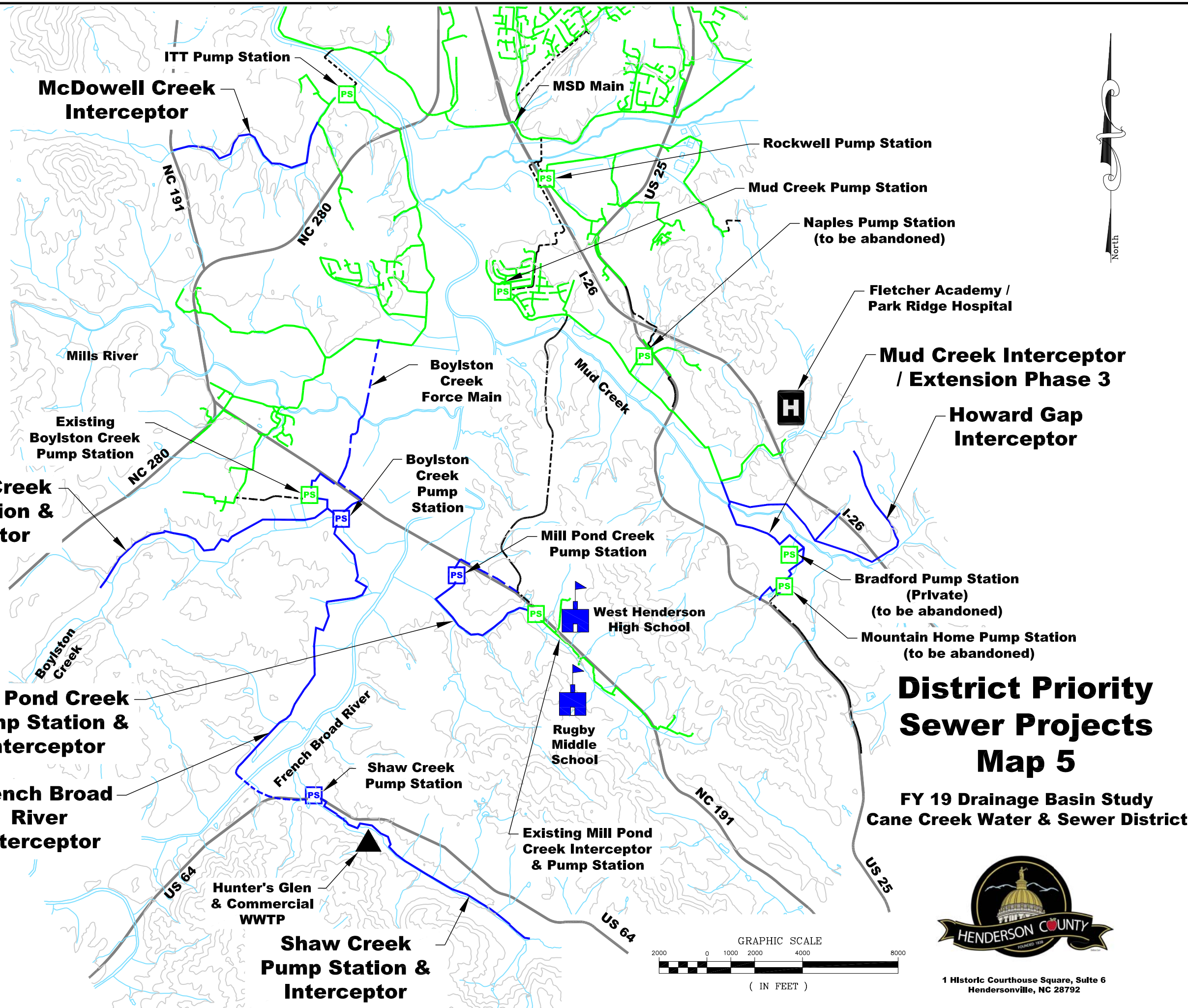
This project involves the extension of sewer along McDowell Creek to NC 191 providing sewer service to areas north of NC 280 in the Mills River Area.

Mill Pond Creek Pump Station Relocation and Interceptor

The project would involve the relocation of the existing Mill Pond Creek Pump Station further west along Mill Pond Creek to provide sewer service to a larger area.

Legend

- Existing Gravity Main
- Existing Force Main
- PS Existing CCWSD Pump Station
- Proposed Priority Gravity Main
- Proposed Priority Force Main
- PS Proposed Priority Pump Station
- School
- Hospital
- Hunter's Glen & Commercial WWTWP

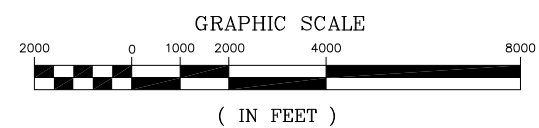


District Priority Sewer Projects Map 5

FY 19 Drainage Basin Study
Cane Creek Water & Sewer District

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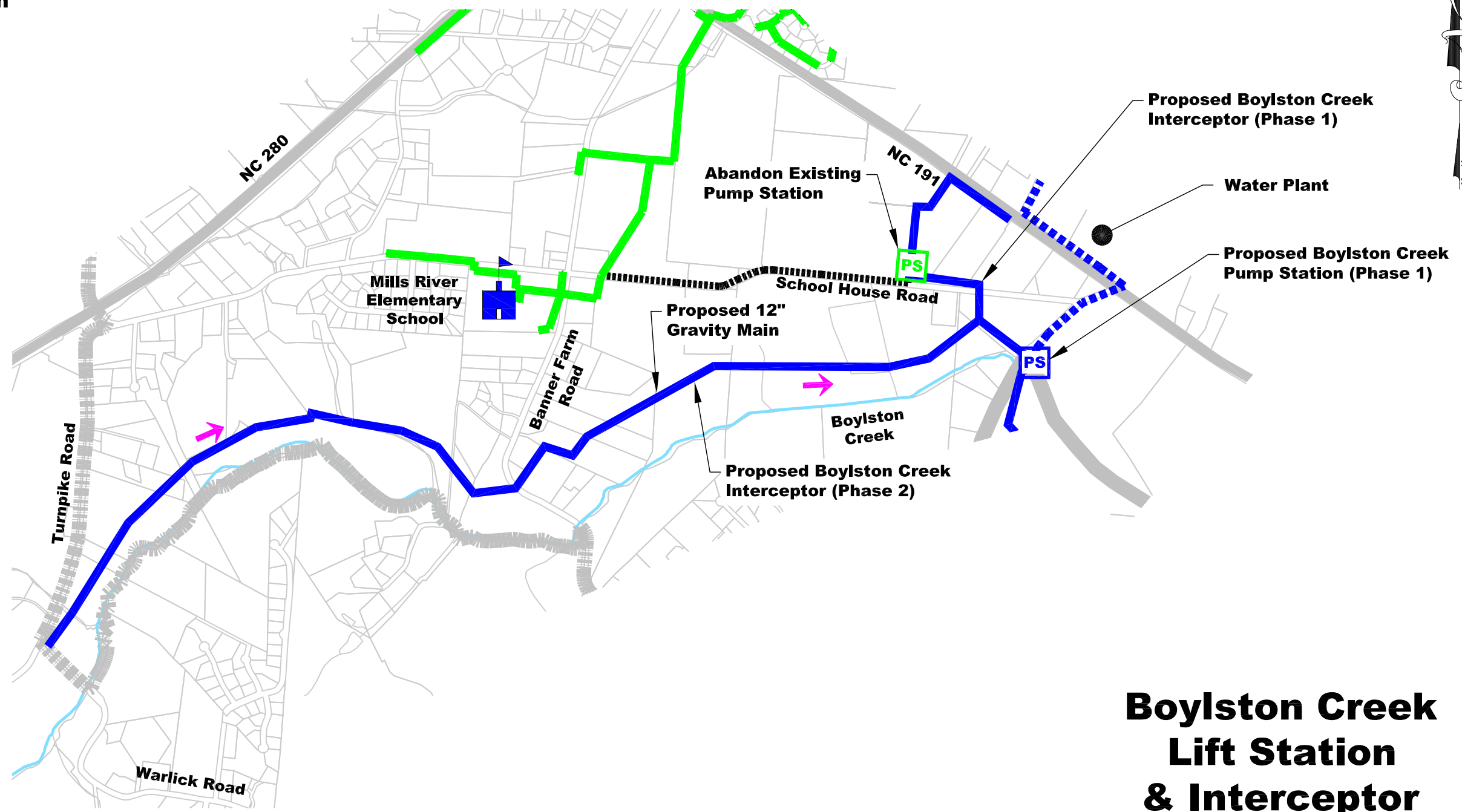
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Legend

- Existing Gravity Main
- - - - Existing Force Main
- PS Existing CCWSD Pump Station
- Proposed Priority Gravity Main
- - - - Proposed Priority Force Main
- PS Proposed Priority Pump Station
- ➔ Direction of Flow
- 🏫 School

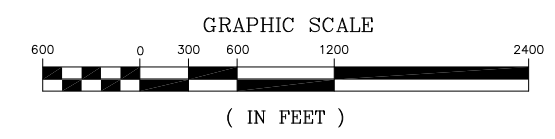


Boylston Creek Lift Station & Interceptor

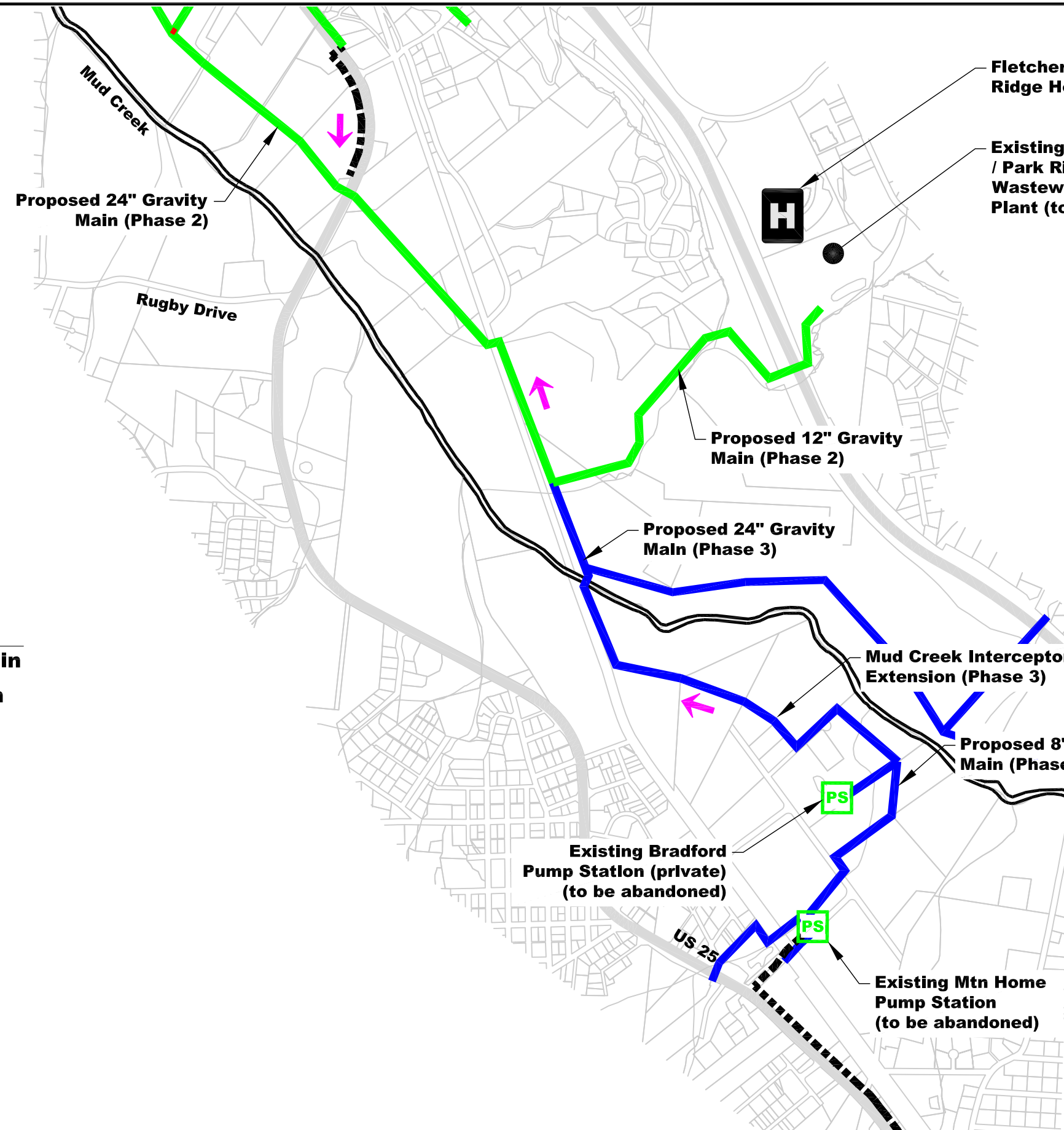
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Legend

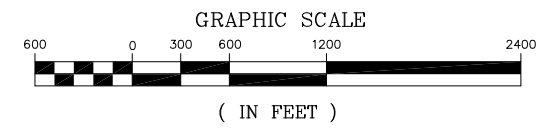
- Existing Gravity Main
- Existing Force Main
- PS Existing CCWSD Pump Station
- Proposed Priority Gravity Main
- H Hospital
- ➔ Direction of Flow

Mud Creek Interceptor/ Extension Phase 3

**FY 19 Drainage Basin Study
Cane Creek Water & Sewer District**

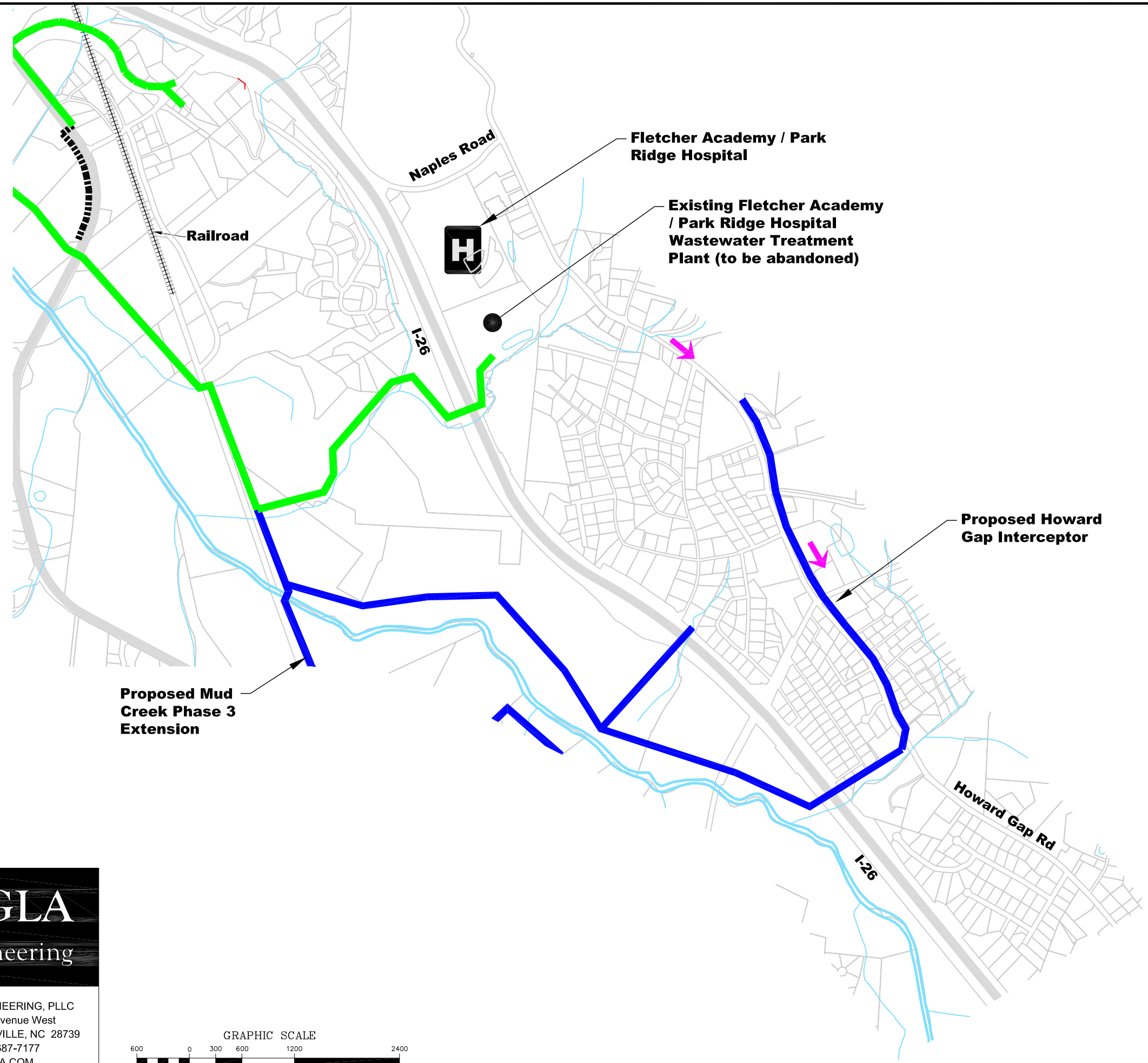
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Legend

-  Existing Gravity Main
-  Existing Force Main
-  Existing CCWSD Pump Station
-  Proposed Priority Gravity Main
-  Proposed Priority Force Main
-  Proposed Priority Pump Station
-  Direction of Flow
-  Hospital

Proposed Mud Creek Phase 3 Extension

Fletcher Academy / Park Ridge Hospital

Existing Fletcher Academy / Park Ridge Hospital Wastewater Treatment Plant (to be abandoned)

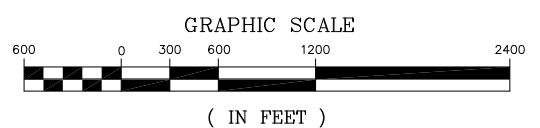
Proposed Howard Gap Interceptor

Howard Gap Interceptor

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Cane Creek Water & Sewer District

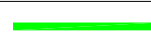





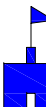

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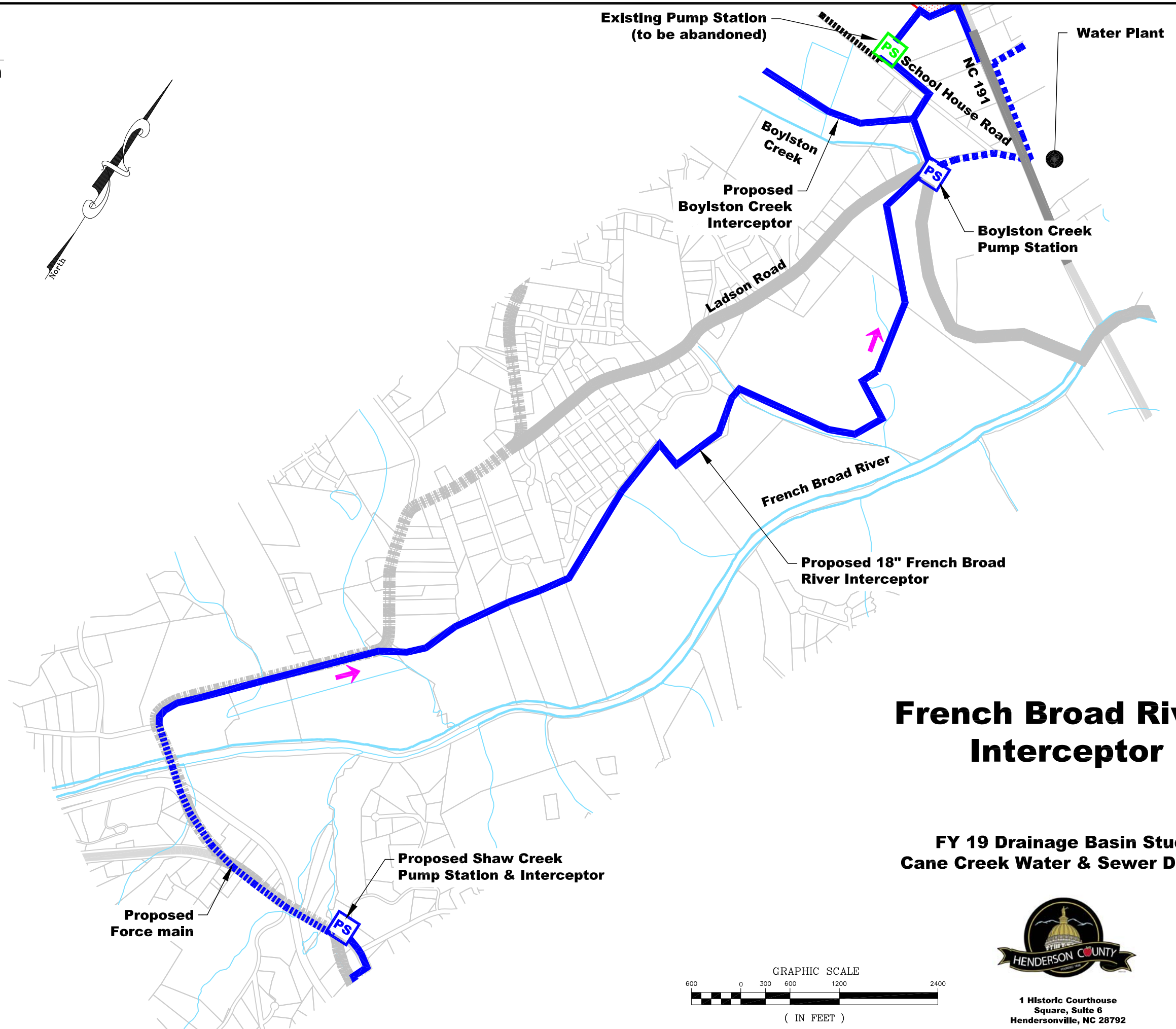
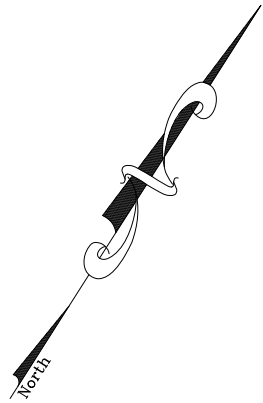
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Legend

-  Existing Gravity Main
-  Existing Force Main
-  Existing CCWSD Pump Station
-  Proposed Priority Gravity Main
-  Proposed Priority Force Main
-  Proposed Priority Pump Station
-  School
-  Direction of Flow

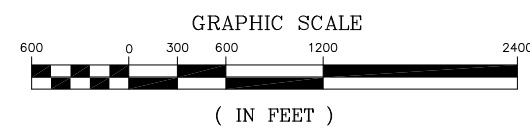


French Broad River Interceptor

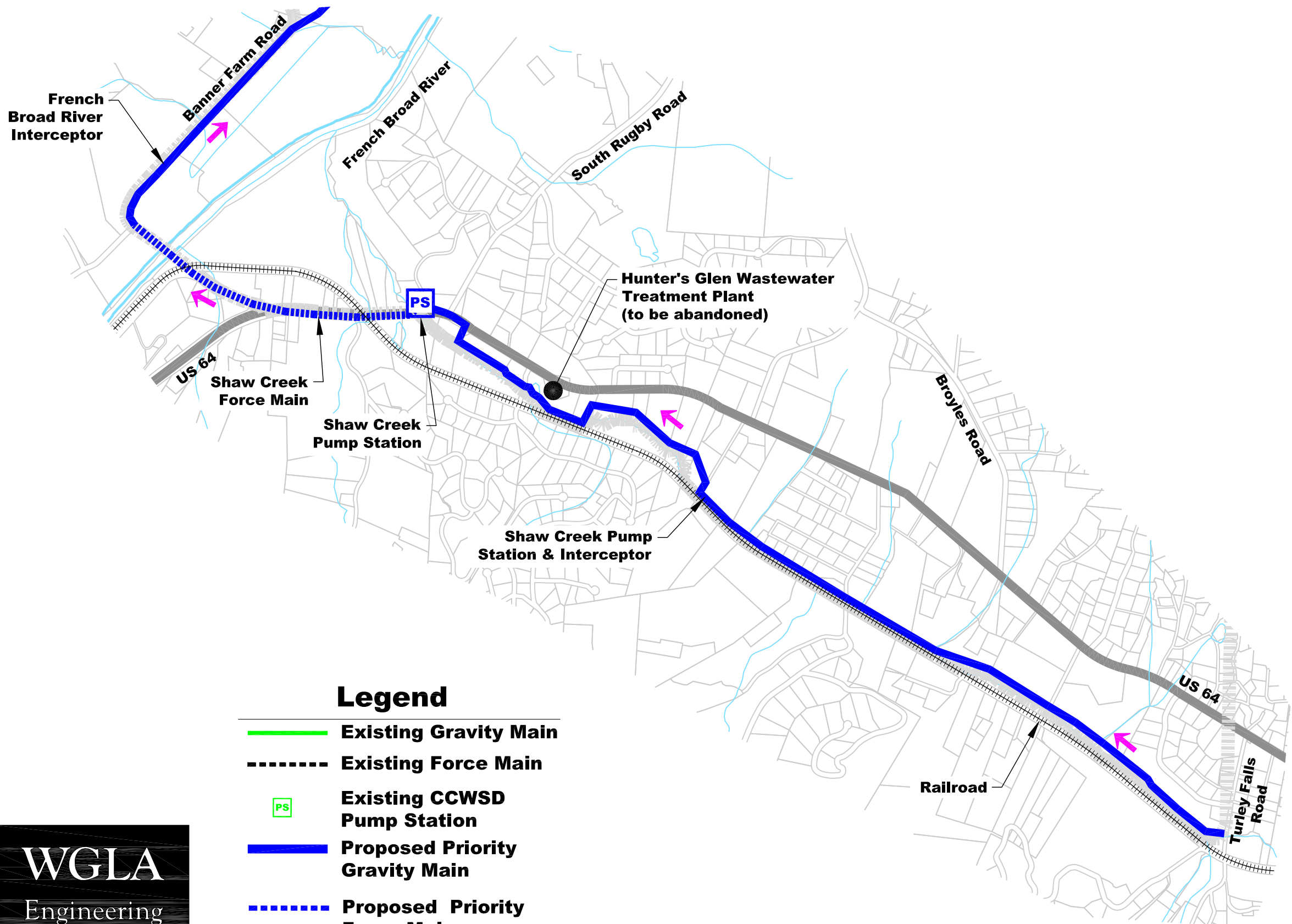
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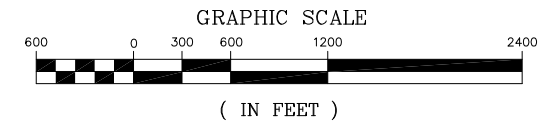
-  Existing Gravity Main
-  Existing Force Main
-  Existing CCWSD Pump Station
-  Proposed Priority Gravity Main
-  Proposed Priority Force Main
-  Proposed Priority Pump Station
-  Direction of Flow

Shaw Creek Pump Station & Interceptor

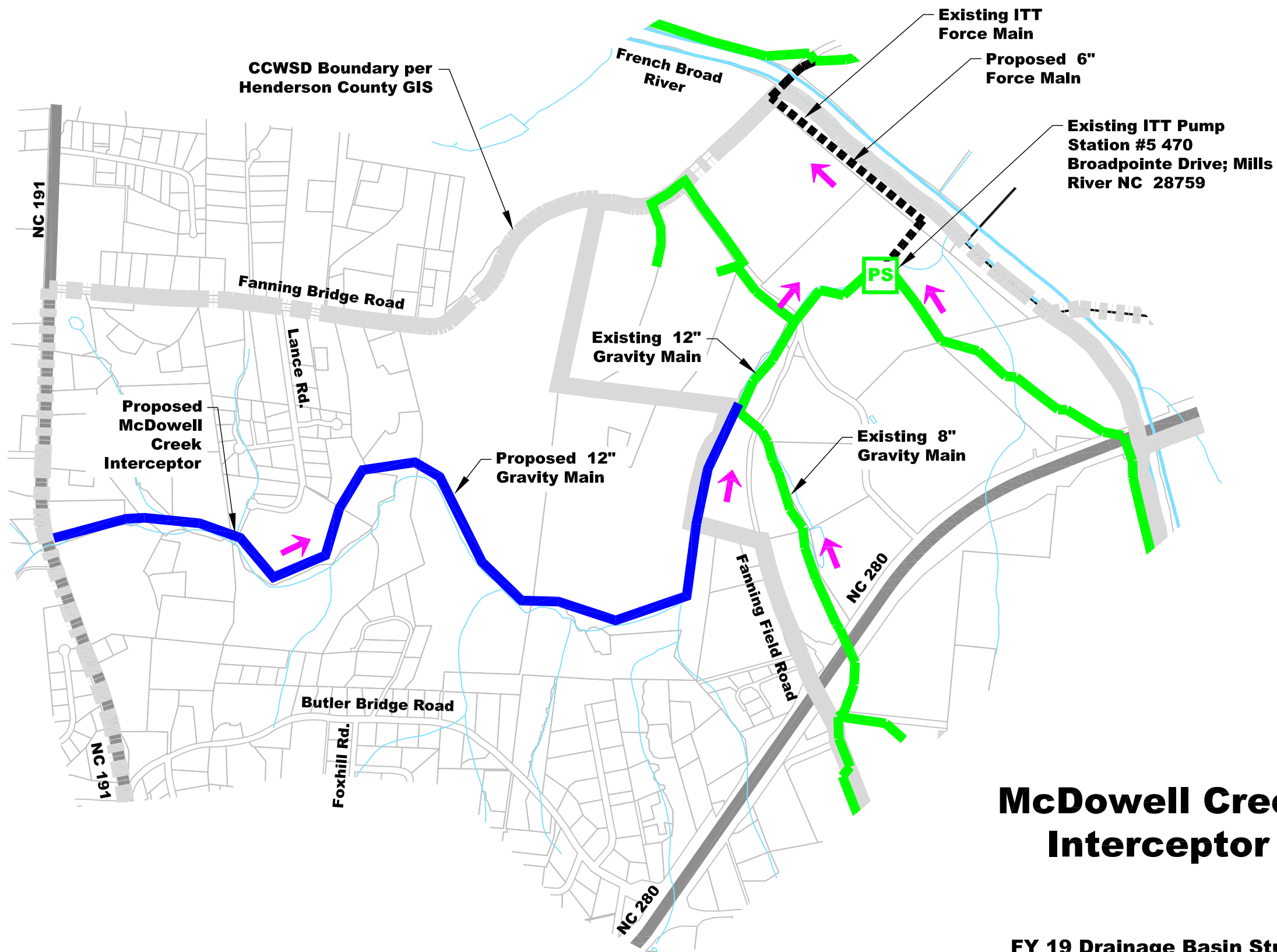
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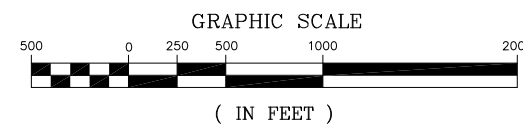
- Existing Gravity Main
- Existing Force Main
- Existing CCWSD Pump Station
- Proposed Priority Gravity Main
- Proposed Priority Force Main
- Proposed Priority Pump Station
- Direction of Flow
- School

McDowell Creek Interceptor

**FY 19 Drainage Basin Study
Cane Creek Water & Sewer District**

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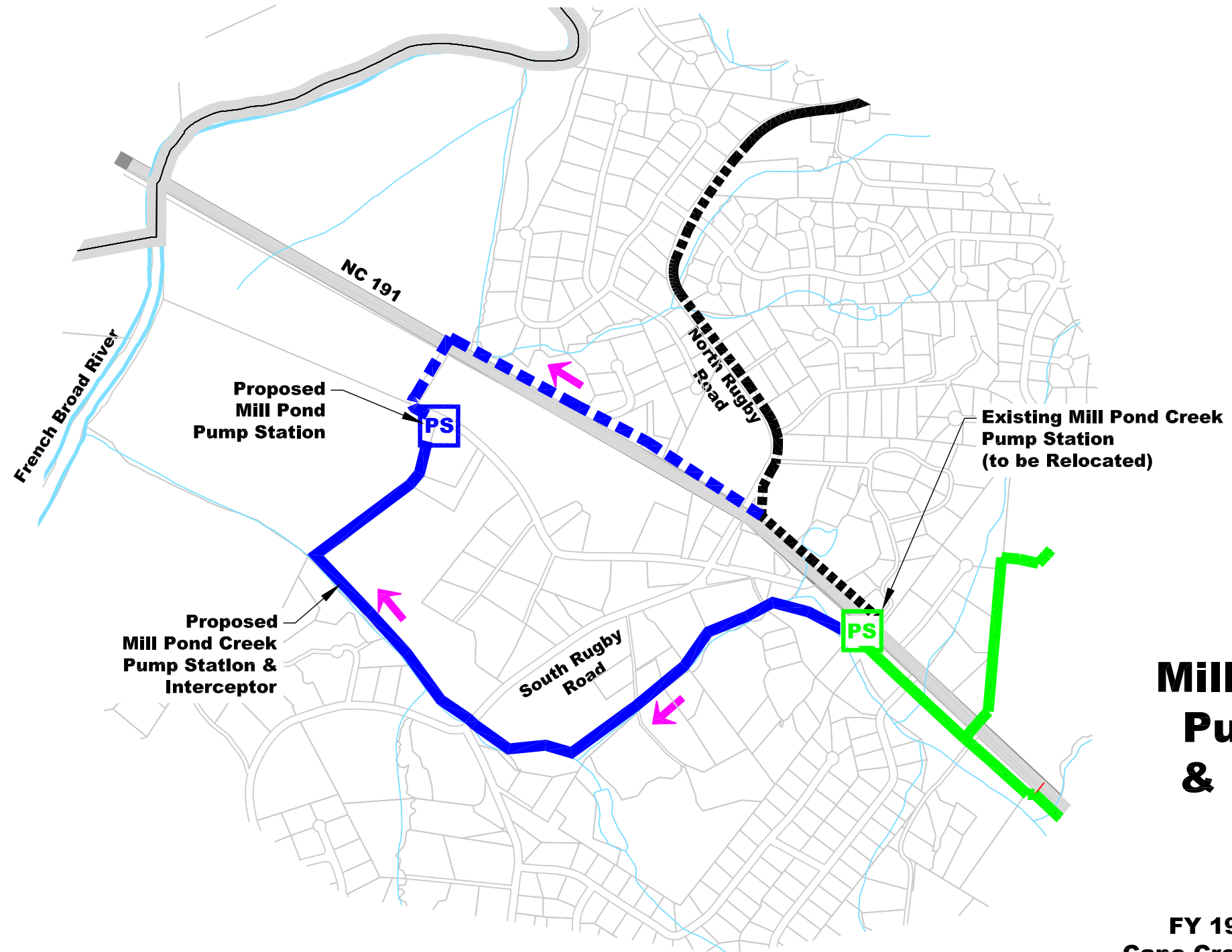
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- PS Existing CCWSD Pump Station
- Proposed Priority Gravity Main
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- PS Proposed Priority Pump Station
- ➔ Direction of Flow

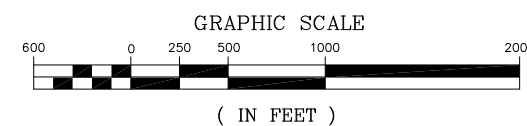


Mill Pond Creek Pump Station & Interceptor

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PRELIMINARY COST ESTIMATE - CANE CREEK WATER AND SEWER DISTRICT
Basinwide Plan FY 2019/2020 Update

Date: 8/20/2019 Project # 19101

Priority Projects

Short Term Projects

Recommended Project Budget

Boylston Creek Pump Station & Phase 1 Interceptor	\$3,012,900.00
ITT Pump Station Upgrade	\$987,500.00

Intermediate Projects

Mud Creek Interceptor/Extension Phase 3	\$4,288,500.00
Howard Gap Interceptor	\$5,818,800.00

Long Term Projects

Boylston Creek Phase 2 Interceptor	\$4,580,500.00
French Broad River Interceptor	\$6,389,750.00
Shaws Creek Pump Station and Interceptor	\$4,801,000.00
McDowell Creek Interceptor	\$3,375,500.00
Millpond Creek Pump Station Relocation and Interceptor	\$3,485,500.00



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PRELIMINARY COST ESTIMATE - CANE CREEK WATER AND SEWER DISTRICT
 Basinwide Plan FY 2019/2020 Update

Date: 8/20/2019 Project # 19101

Priority Projects - Boylston Creek Pump Station & Interceptor (Phase 1)

ITEM	QUAN	UNIT	UNIT PRICE	PRICE
# ITEM				
1 Mobilization	1	LS	\$50,000.00	\$50,000.00
2 Boylston Creek Pump Station	1	LS	\$550,000.00	\$550,000.00
3 12" Gravity Sewer	3,100	LF	\$250.00	\$775,000.00
4 6" Force Main	9,200	LF	\$90.00	\$828,000.00
5 Clearing	3	AC	\$10,000.00	\$30,000.00
6 Erosion Control Measures	1	LS	\$125,000.00	\$125,000.00
7 Final Stabilization	1	LS	\$50,000.00	\$50,000.00
			SUBTOTAL	\$2,408,000.00
			Contingency (10%)	\$240,800.00
			TOTAL RECOMMENDED CONSTRUCTION BUDGET	\$2,648,800.00
			Surveying (Design Surveys, Easement Plats & As-Built Drawings)	\$35,000.00
			Geotechnical Investigation	\$15,000.00
			Engineering, Design & Permitting	\$165,000.00
			Inspections and Construction Administration Assistance	\$85,000.00
			Permit Fees	\$2,500.00
			Mitigation Fees	\$18,600.00
			Easement Acquisition	\$18,000.00
			Legal	\$25,000.00
			TOTAL ESTIMATED SITE COSTS FOR PROJECT	\$3,012,900.00

Notes:
 Easement acquisition is based on 50% of average tax value for land.
 Mitigation fees are based on \$6/LF.
 Engineering, Design & Permitting includes stream and wetland delineation, environmental, etc.



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PRELIMINARY COST ESTIMATE - CANE CREEK WATER AND SEWER DISTRICT
 Basinwide Plan FY 2019/2020 Update

Date: 8/20/2019 Project # 19101

Priority Projects - ITT Pump Station Upgrade

ITEM	QUAN	UNIT	UNIT PRICE	PRICE
# ITEM				
1 New Access Drive	1	LS	\$250,000.00	\$250,000.00
2 New Wet Well	1	LS	\$175,000.00	\$175,000.00
3 Upgrade to Pumps and Backup Pump	1	LS	\$250,000.00	\$250,000.00
4 Site Work	1	LS	\$100,000.00	\$100,000.00
			SUBTOTAL	\$775,000.00
			Contingency (10%)	\$77,500.00
			TOTAL RECOMMENDED CONSTRUCTION BUDGET	\$852,500.00
			Surveying (Design Surveys, Easement Plats & As-Built Drawings)	\$10,000.00
			Geotechnical Investigation	\$7,500.00
			Engineering, Design & Permitting	\$45,000.00
			Inspections and Construction Administration Assistance	\$25,000.00
			Permit Fees	\$10,000.00
			Easement Acquisition	\$12,500.00
			Legal	\$25,000.00
			TOTAL ESTIMATED SITE COSTS FOR PROJECT	\$987,500.00

Notes:
 Easement acquisition is based on 50% of average tax value for land.
 Mitigation fees are based on \$6/LF.
 Engineering, Design & Permitting includes stream and wetland delineation, environmental, etc.



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PRELIMINARY COST ESTIMATE - CANE CREEK WATER AND SEWER DISTRICT
 Basinwide Plan FY 2019/2020 Update

Date: 8/20/2019 Project # 19101

Priority Projects - Mud Creek Interceptor/Extension (Phase 3)

ITEM	QUAN	UNIT	UNIT PRICE	PRICE
# ITEM				
1 Mobilization	1	LS	\$100,000.00	\$100,000.00
2 18" Gravity Sewer	3,000	LF	\$200.00	\$600,000.00
3 24" Gravity Sewer	6,200	LF	\$375.00	\$2,325,000.00
3 Abandon Ex. Pump Stations	3	EA	\$25,000.00	\$75,000.00
4 Clearing	7	AC	\$10,000.00	\$70,000.00
5 Erosion Control Measures	1	LS	\$250,000.00	\$250,000.00
6 Final Stabilization	1	LS	\$75,000.00	\$75,000.00
			SUBTOTAL	\$3,495,000.00
			Contingency (10%)	\$349,500.00
			TOTAL RECOMMENDED CONSTRUCTION BUDGET	\$3,844,500.00
			Surveying (Design Surveys, Easement Plats & As-Built Drawings)	\$40,000.00
			Geotechnical Investigation	\$20,000.00
			Engineering, Design & Permitting	\$175,000.00
			Inspections and Construction Administration Assistance	\$110,000.00
			Permit Fees	\$4,000.00
			Mitigation Fees	\$18,000.00
			Easement Acquisition	\$42,000.00
			Legal	\$35,000.00
			TOTAL ESTIMATED SITE COSTS FOR PROJECT	\$4,288,500.00

Notes:
 Easement acquisition is based on 50% of average tax value for land.
 Mitigation fees are based on \$6/LF.
 Engineering, Design & Permitting includes stream and wetland delineation, environmental, etc.



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PRELIMINARY COST ESTIMATE - CANE CREEK WATER AND SEWER DISTRICT
 Basinwide Plan FY 2019/2020 Update1

Date: 8/20/2019 Project # 19101

Priority Projects - Howard Gap Interceptor

ITEM	QUAN	UNIT	UNIT PRICE	PRICE
# ITEM				
1 Mobilization	1	LS	\$100,000.00	\$100,000.00
2 12" Gravity Sewer	6,500	LF	\$250.00	\$1,625,000.00
3 18" Gravity Sewer	7,800	LF	\$325.00	\$2,535,000.00
4 Clearing	12	AC	\$10,000.00	\$120,000.00
5 Erosion Control Measures	1	LS	\$250,000.00	\$250,000.00
6 Final Stabilization	1	LS	\$75,000.00	\$75,000.00
			SUBTOTAL	\$4,705,000.00
			Contingency (10%)	\$470,500.00
			TOTAL RECOMMENDED CONSTRUCTION BUDGET	\$5,175,500.00
			Surveying (Design Surveys, Easement Plats & As-Built Drawings)	\$55,000.00
			Geotechnical Investigation	\$25,000.00
			Engineering, Design & Permitting	\$215,000.00
			Inspections and Construction Administration Assistance	\$135,000.00
			Permit Fees	\$5,500.00
			Mitigation Fees	\$85,800.00
			Easement Acquisition	\$72,000.00
			Legal	\$50,000.00
			TOTAL ESTIMATED SITE COSTS FOR PROJECT	\$5,818,800.00

Notes:

Easement acquisition is based on 50% of average tax value for land.

Mitigation fees are based on \$6/LF.

Engineering, Design & Permitting includes stream and wetland delineation, environmental, etc.



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PRELIMINARY COST ESTIMATE - CANE CREEK WATER AND SEWER DISTRICT
 Basinwide Plan FY 2019/2020 Update

Date: 8/20/2019 Project # 19101

Priority Projects - Bolyston Creek Interceptor Phase 2

ITEM		QUAN	UNIT	UNIT PRICE	PRICE
#	ITEM				
1	Mobilization	1	LS	\$100,000.00	\$100,000.00
2	12" Gravity Sewer	12,500	LF	\$250.00	\$3,125,000.00
3	Clearing	9	AC	\$10,000.00	\$90,000.00
4	Erosion Control Measures	1	LS	\$250,000.00	\$250,000.00
5	Final Stabilization	1	LS	\$100,000.00	\$100,000.00
				SUBTOTAL	\$3,665,000.00
				Contingency (10%)	\$366,500.00
				TOTAL RECOMMENDED CONSTRUCTION BUDGET	\$4,031,500.00
				Surveying (Design Surveys, Easement Plats & As-Built Drawings)	\$50,000.00
				Geotechnical Investigation	\$25,000.00
				Engineering, Design & Permitting	\$195,000.00
				Inspections and Construction Administration Assistance	\$110,000.00
				Permit Fees	\$5,000.00
				Mitigation Fees	\$75,000.00
				Easement Acquisition	\$54,000.00
				Legal	\$35,000.00
				TOTAL ESTIMATED SITE COSTS FOR PROJECT	\$4,580,500.00

Notes:

Easement acquisition is based on 50% of average tax value for land.

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Engineering, Design & Permitting includes stream and wetland delineation, environmental, etc.



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PRELIMINARY COST ESTIMATE - CANE CREEK WATER AND SEWER DISTRICT
 Basinwide Plan FY 2019/2020 Update

Date: 8/20/2019 Project # 19101

Priority Projects - French Broad River Interceptor

ITEM		QUAN	UNIT	UNIT PRICE	PRICE
#	ITEM				
1	Mobilization	1	LS	\$100,000.00	\$100,000.00
2	18" Gravity Sewer	14,500	LF	\$325.00	\$4,712,500.00
3	Clearing	12	AC	\$10,000.00	\$120,000.00
4	Erosion Control Measures	1	LS	\$250,000.00	\$250,000.00
5	Final Stabilization	1	LS	\$100,000.00	\$100,000.00
				SUBTOTAL	\$5,282,500.00
				Contingency (10%)	\$528,250.00
				TOTAL RECOMMENDED CONSTRUCTION BUDGET	\$5,810,750.00
				Surveying (Design Surveys, Easement Plats & As-Built Drawings)	\$50,000.00
				Geotechnical Investigation	\$25,000.00
				Engineering, Design & Permitting	\$195,000.00
				Inspections and Construction Administration Assistance	\$110,000.00
				Permit Fees	\$5,000.00
				Mitigation Fees	\$87,000.00
				Easement Acquisition	\$72,000.00
				Legal	\$35,000.00
				TOTAL ESTIMATED SITE COSTS FOR PROJECT	\$6,389,750.00

Notes:

Easement acquisition is based on 50% of average tax value for land.

Mitigation fees are based on \$6/LF.

Engineering, Design & Permitting includes stream and wetland delineation, environmental, etc.



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PRELIMINARY COST ESTIMATE - CANE CREEK WATER AND SEWER DISTRICT
 Basinwide Plan FY 2019/2020 Update

Date: 8/20/2019 Project # 19101

Priority Projects - Shaws Creek Pump Station and Interceptor

ITEM	QUAN	UNIT	UNIT PRICE	PRICE
# ITEM				
1 Mobilization	1	LS	\$100,000.00	\$100,000.00
2 Shaws Creek Pump Station	1	LS	\$400,000.00	\$400,000.00
3 12" Gravity Sewer	11,500	LF	\$250.00	\$2,875,000.00
4 6" Force Main	3,500	LF	\$90.00	\$315,000.00
5 Clearing	9	AC	\$10,000.00	\$90,000.00
6 Erosion Control Measures	1	LS	\$125,000.00	\$125,000.00
7 Final Stabilization	1	LS	\$50,000.00	\$50,000.00
			SUBTOTAL	\$3,955,000.00
			Contingency (10%)	\$395,500.00
			TOTAL RECOMMENDED CONSTRUCTION BUDGET	\$4,350,500.00
			Surveying (Design Surveys, Easement Plats & As-Built Drawings)	\$35,000.00
			Geotechnical Investigation	\$15,000.00
			Engineering, Design & Permitting	\$165,000.00
			Inspections and Construction Administration Assistance	\$85,000.00
			Permit Fees	\$2,500.00
			Mitigation Fees	\$69,000.00
			Easement Acquisition	\$54,000.00
			Legal	\$25,000.00
			TOTAL ESTIMATED SITE COSTS FOR PROJECT	\$4,801,000.00

Notes:
 Easement acquisition is based on 50% of average tax value for land.
 Mitigation fees are based on \$6/LF.
 Engineering, Design & Permitting includes stream and wetland delineation, environmental, etc.



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PRELIMINARY COST ESTIMATE - CANE CREEK WATER AND SEWER DISTRICT
 Basinwide Plan FY 2019/2020 Update

Date: 8/20/2019 Project # 19101

Priority Projects - McDowell Creek Interceptor

ITEM		QUAN	UNIT	UNIT PRICE	PRICE
#	ITEM				
1	Mobilization	1	LS	\$100,000.00	\$100,000.00
2	12" Gravity Sewer	9,000	LF	\$250.00	\$2,250,000.00
3	Clearing	7	AC	\$10,000.00	\$70,000.00
4	Erosion Control Measures	1	LS	\$175,000.00	\$175,000.00
5	Final Stabilization	1	LS	\$100,000.00	\$100,000.00
				SUBTOTAL	\$2,695,000.00
				Contingency (10%)	\$269,500.00
				TOTAL RECOMMENDED CONSTRUCTION BUDGET	\$2,964,500.00
				Surveying (Design Surveys, Easement Plats & As-Built Drawings)	\$50,000.00
				Geotechnical Investigation	\$15,000.00
				Engineering, Design & Permitting	\$135,000.00
				Inspections and Construction Administration Assistance	\$75,000.00
				Permit Fees	\$5,000.00
				Mitigation Fees	\$54,000.00
				Easement Acquisition	\$42,000.00
				Legal	\$35,000.00
				TOTAL ESTIMATED SITE COSTS FOR PROJECT	\$3,375,500.00

Notes:

Easement acquisition is based on 50% of average tax value for land.

Mitigation fees are based on \$6/LF.

Engineering, Design & Permitting includes stream and wetland delineation, environmental, etc.



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PRELIMINARY COST ESTIMATE - CANE CREEK WATER AND SEWER DISTRICT
 Basinwide Plan FY 2019/2020 Update

Date: 8/20/2019 Project # 19101

Priority Projects - Millpond Creek Pump Station and Interceptor

ITEM	QUAN	UNIT	UNIT PRICE	PRICE
# ITEM				
1 Mobilization	1	LS	\$100,000.00	\$100,000.00
2 Millpond Creek Pump Station	1	LS	\$400,000.00	\$400,000.00
3 12" Gravity Sewer	7,000	LF	\$250.00	\$1,750,000.00
4 6" Force Main	3,500	LF	\$90.00	\$315,000.00
5 Clearing	6	AC	\$10,000.00	\$60,000.00
6 Erosion Control Measures	1	LS	\$125,000.00	\$125,000.00
7 Final Stabilization	1	LS	\$50,000.00	\$50,000.00
			SUBTOTAL	\$2,800,000.00
			Contingency (10%)	\$280,000.00
			TOTAL RECOMMENDED CONSTRUCTION BUDGET	\$3,080,000.00
			Surveying (Design Surveys, Easement Plats & As-Built Drawings)	\$35,000.00
			Geotechnical Investigation	\$15,000.00
			Engineering, Design & Permitting	\$165,000.00
			Inspections and Construction Administration Assistance	\$85,000.00
			Permit Fees	\$2,500.00
			Mitigation Fees	\$42,000.00
			Easement Acquisition	\$36,000.00
			Legal	\$25,000.00
			TOTAL ESTIMATED SITE COSTS FOR PROJECT	\$3,485,500.00