



**City of Biddeford**  
**Wastewater Management Commission**

June 26, 2024 at 4:45 PM  
Biddeford Wastewater Treatment Facility  
63 Water Street, Biddeford

1. Roll Call
2. Approval of Minutes - NONE
3. New Business
  - 3.a Presentation of Draft CSO Master Plan Submitted to the ME DEP. See Attachment
  - 3.b Sewer System Capacity Issues. See Attachment
  - 3.c Presentation of Revised Sewer Impact Fees. See Attachment
4. Old/Unfinished Business
5. Adjourn

Project Number: 20496A  
 Project: Biddeford Sewer/Storm Drain Separation Projects  
 ENR CCI 20CITY AVG: 13175

Date: 10/18/23  
 By: ABL/SLG

SEPARATION PROJECTS, 10-YEAR PLAN

PRIORITY	Project Title	LF of New Storm Drain	Construction Cost	Engineering Cost	Estimated Total Cost	Tributary Outfall	CSO Area	Project Timeline	Dependent Projects
0	Cutts, Bradbury, Mason Separation	990	\$ 1,522,947	\$ 456,884	\$ 1,980,000	Bradbury	CSO-006	Year 1-5	-
1	Alfred Street Separation - CWSRF Project 1 (Phase 1 and 2)	1,980	\$ 3,219,248	\$ 965,774	\$ 4,185,000	Main Street	CSO-009	Year 1-5	-
2	Alfred Street Separation - CWSRF Project 2 (Phase 3)	1,440	\$ 2,310,193	\$ 693,058	\$ 3,003,000	Main Street	CSO-009	Year 1-5	1
3	Main Capacity Upgrades & Summer Street Separation	1,500	\$ 2,456,668	\$ 737,000	\$ 3,194,000	Main Street	CSO-009	Year 1-5	1
4	Washington, Jefferson, Adams, Franklin Separation	2,520	\$ 3,659,373	\$ 1,097,812	\$ 4,757,000	Main Street	CSO-009	Year 1-5	3
5	Elm Street Capacity Upgrades	2,370	\$ 3,869,539	\$ 1,160,862	\$ 5,030,000	Elm Street	CSO-007	Year 1-5	-
6	South, Kossuth, Hooper, Maple Separation	2,140	\$ 3,064,040	\$ 919,212	\$ 3,983,000	Elm Street & Former Maple Street CSO	CSO-007	Year 6-10	5
7	Harrison to Free Street Upgrades	1,420	\$ 2,655,608	\$ 796,682	\$ 3,452,000	Alison Ave	CSO-009	Year 6-10	
8	Lambert, Clark, Tachereau Separation	2,870	\$ 4,681,469	\$ 1,404,441	\$ 6,086,000	Alison Ave	CSO-009	Year 6-10	7
9	Westland, Dental, Forest, Rathier Separation	1,140	\$ 1,267,744	\$ 380,323	\$ 1,648,000	Alison Ave (Westland), Western Ave (Dental), Springfield Railroad (Forest/Rathier)	CSO-005r (Dental, Forest, Rathier), CSO-009 (Westland)	Year 6-10	-
10	Rumery Capacity Upgrades & George Separation	1,270	\$ 1,945,781	\$ 583,734	\$ 2,530,000	Rumery	CSO-013	Year 6-10	-
		Total LF= 18700	<b>\$29,130,000</b>	<b>\$ 8,739,000</b>	<b>\$ 37,870,000</b>				

PROJECTS BEYOND CONSENT AGREEMENT


Hillside/CF Oaks - Previously in 10-year	1,000	\$ 1,332,765	\$ 399,830	\$ 1,733,000	Alison Ave	CSO-009	Year 11-15	-
Rumery, Bristol & Freeman Separation	1,210	\$ 2,688,656	\$ 806,597	\$ 3,495,000	Rumery	CSO-013	Year 11-15	10
Highland Separation	1,010	\$ 623,998	\$ 187,199	\$ 811,000	N Main Street	CSO-006	Year 11-15	-
Porter Street & Myrtle Street	2,040	\$ 3,004,785	\$ 901,436	\$ 3,906,000	Alison Ave	CSO-009	Year 11-15	7,8
Westfield Ext., Congress Street Separation	820	\$ 873,460	\$ 262,038	\$ 1,135,000	Alison Ave	CSO-009	Year 11-15	7
Southgate Separation	851	\$ 299,523	\$ 1,048,329	\$ 1,348,000	Alison Ave	CSO-009	Year 11-15	-
Diamond Storage Upgrade	2,245	\$ 3,248,140	\$ 974,442	\$ 4,223,000	N/A	CSO-006/007	Year 1-5	-
			<b>\$12,100,000</b>	<b>\$ 4,600,000</b>	<b>\$ 16,700,000</b>			

1. Projects and their estimates shown in the tables are conceptual in nature and are not based on formal surveying or test pitting efforts. Size, scope, and nature could vary during the formal design process.

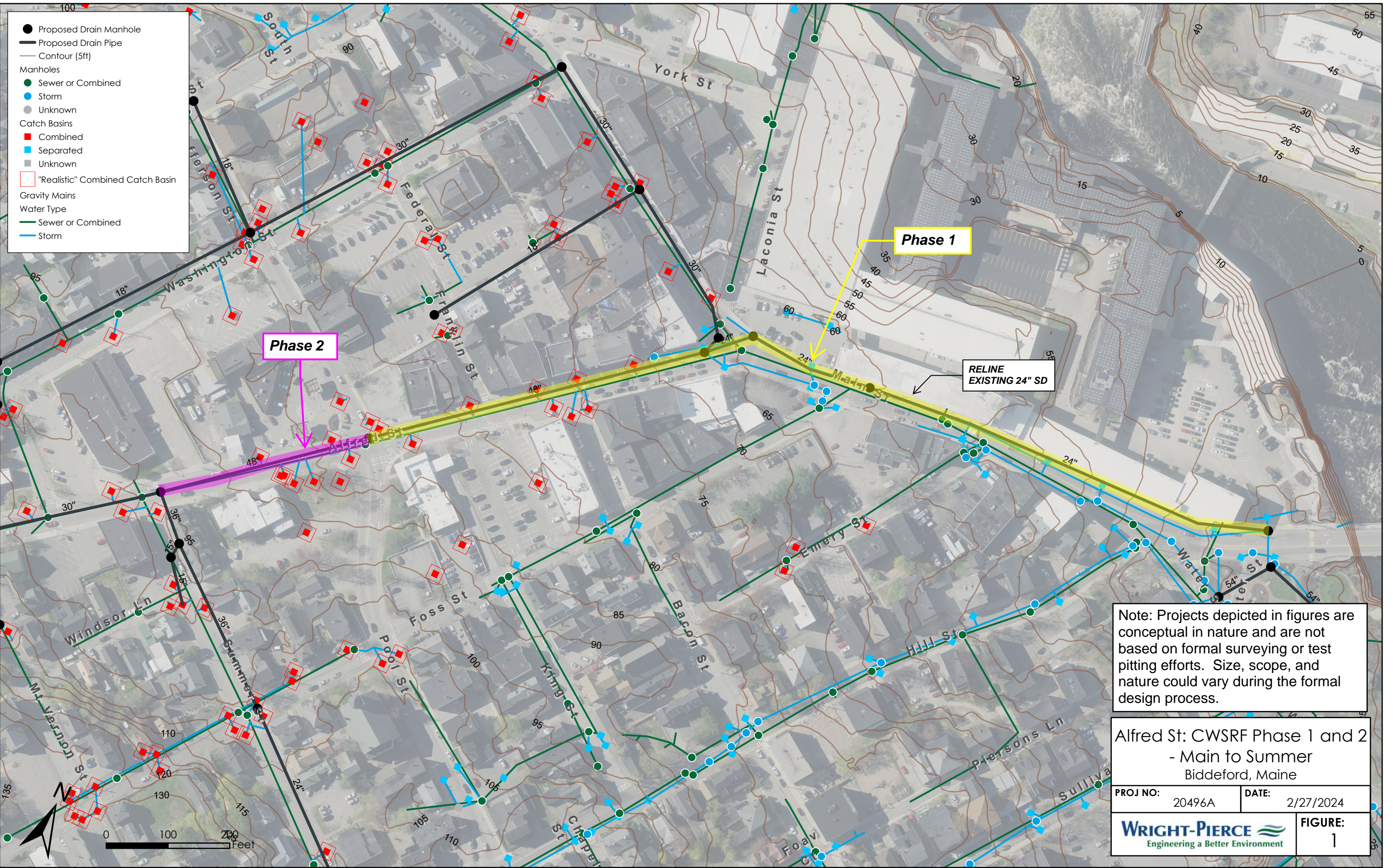
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Note: Projects depicted in figures are conceptual in nature and are not based on formal surveying or test pitting efforts. Size, scope, and nature could vary during the formal design process.

<b>Cutts, Bradbury, Mason Separation</b> Biddeford, Maine	
PROJ NO:	20496A
DATE:	2/27/2024
 <b>WRIGHT-PIERCE</b> Engineering a Better Environment	<b>FIGURE:</b> 0

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Alfred St: CWSRF Phase 1 and 2  
- Main to Summer  
Biddeford, Maine

PROJ NO:	20496A	DATE:	2/27/2024
			FIGURE: 1

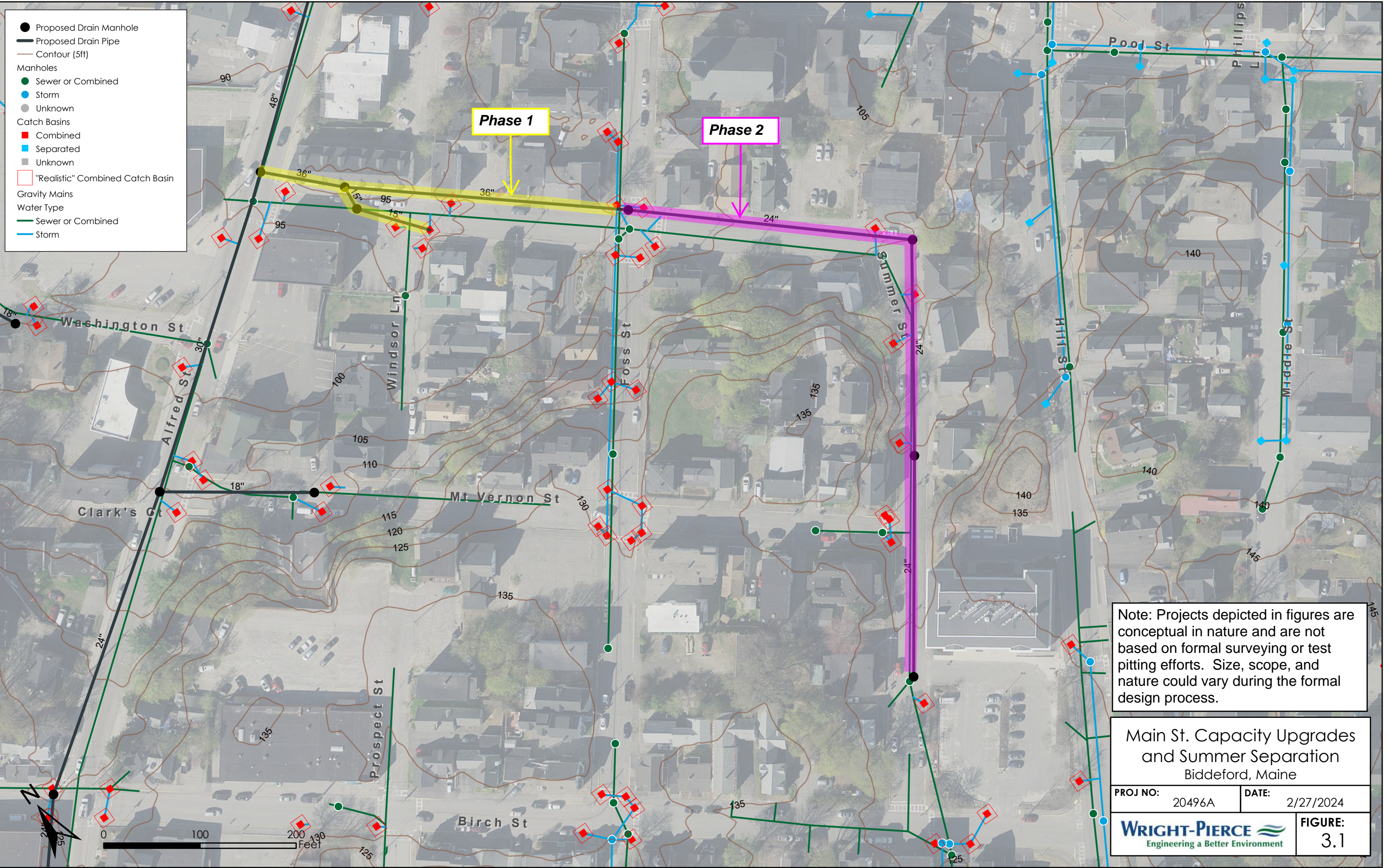
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Alfred St: CWSRF Phase 3 -  
Summer to Porter  
Biddeford, Maine

PROJ NO:	20496A	DATE:	2/27/2024
			FIGURE: 2




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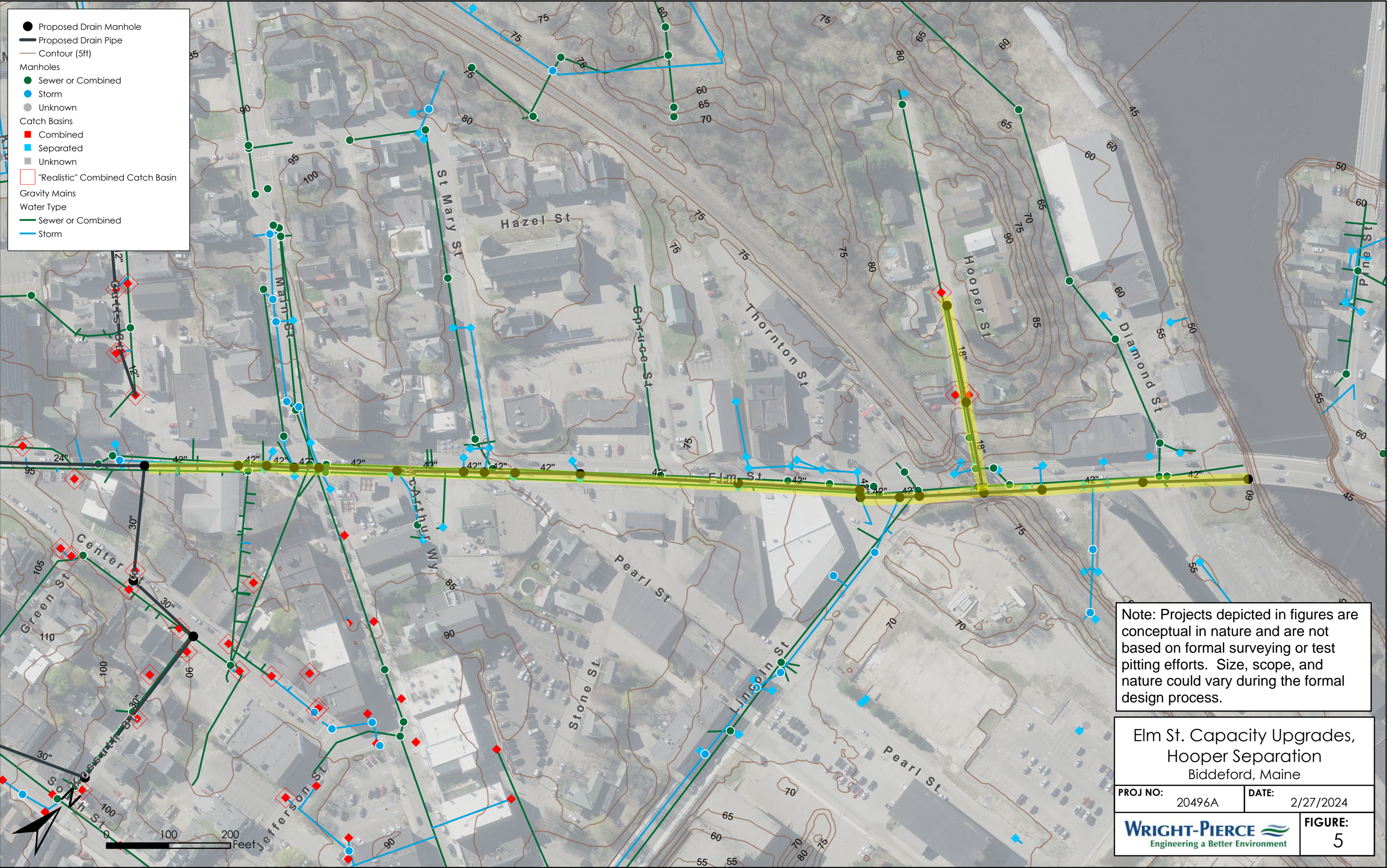
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Wash., Jeff., Adams, Frank. Separation Biddeford, Maine	
PROJ NO: 20496A	DATE: 2/27/2024
 <b>WRIGHT-PIERCE</b> Engineering a Better Environment	<b>FIGURE:</b> 4

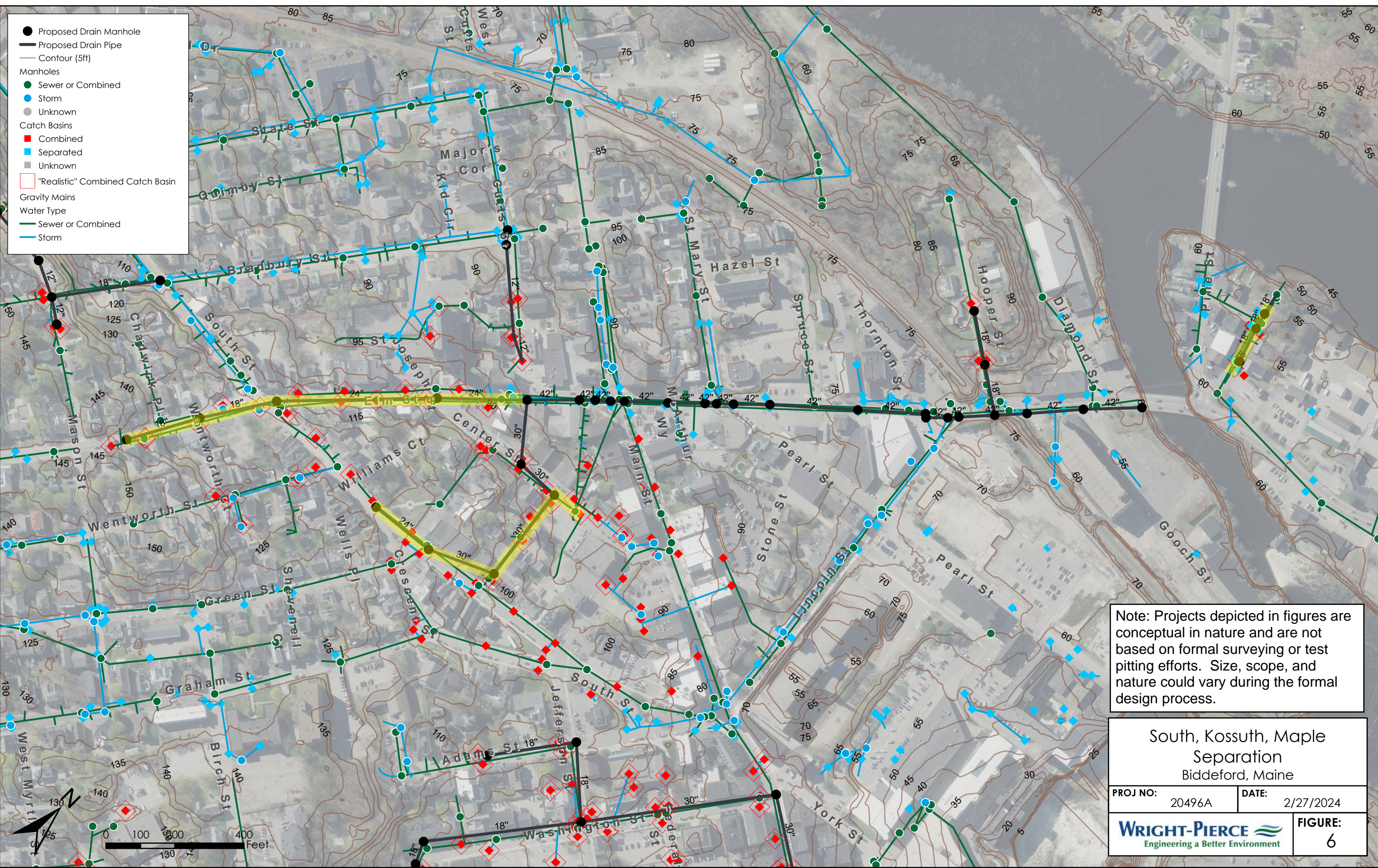
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<b>Elm St. Capacity Upgrades, Hooper Separation</b> Biddeford, Maine	
PROJ NO:	20496A
DATE:	2/27/2024
 Engineering a Better Environment	<b>FIGURE:</b> 5

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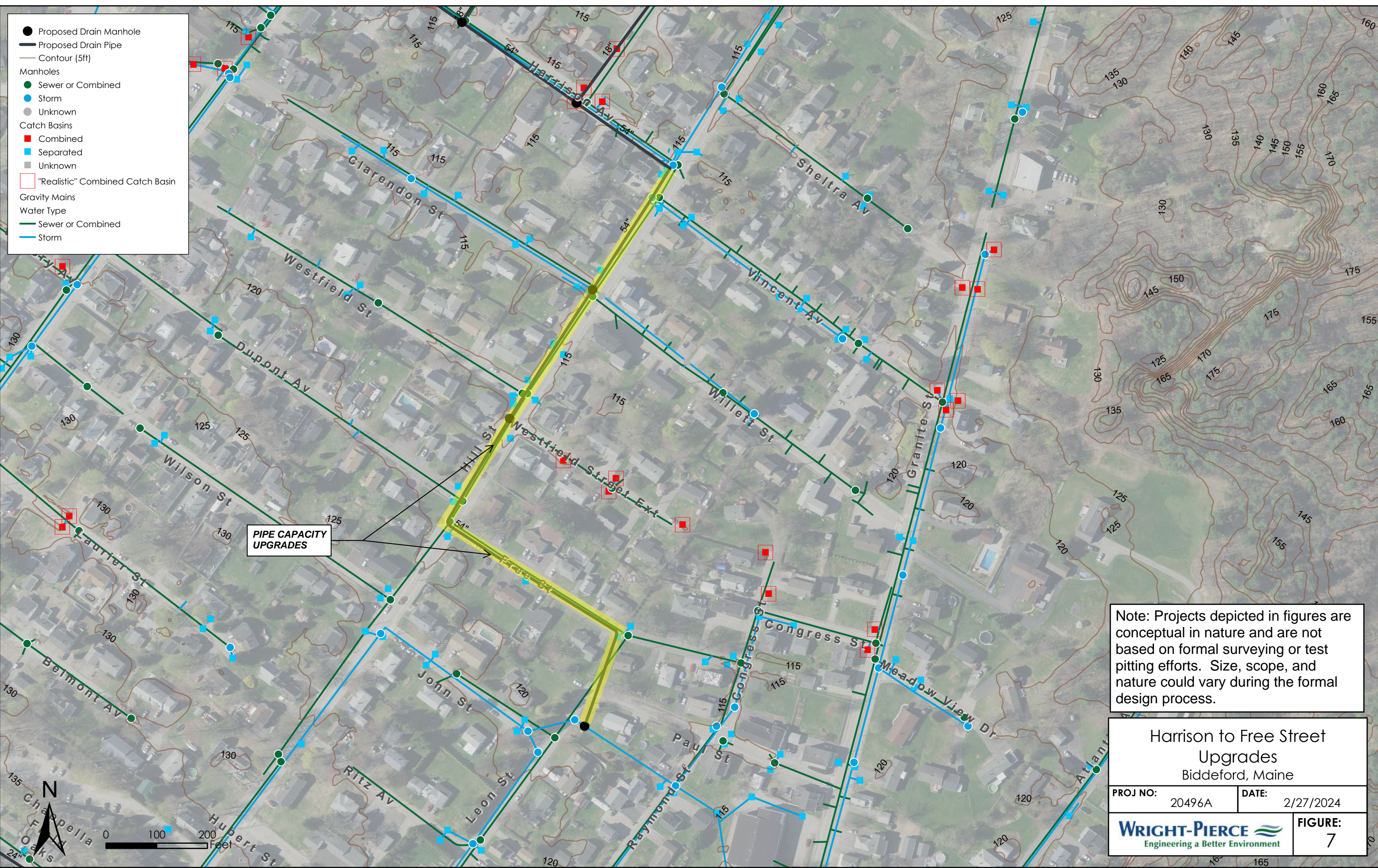


- Proposed Drain Manhole
- Proposed Drain Pipe
- Contour (5ft)
- Manholes
  - Sewer or Combined
  - Storm
  - Unknown
- Catch Basins
  - Combined
  - Separated
  - Unknown
- "Realistic" Combined Catch Basin
- Gravity Mains
  - Sewer or Combined
  - Storm

Note: Projects depicted in figures are conceptual in nature and are not based on formal surveying or test pitting efforts. Size, scope, and nature could vary during the formal design process.

South, Kossuth, Maple Separation Biddeford, Maine	
PROJ NO:	20496A
DATE:	2/27/2024
	
FIGURE:	6

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<b>Harrison to Free Street Upgrades</b> Bideford, Maine	
PROJ NO:	20496A
DATE:	2/27/2024
<b>WRIGHT-PIERCE</b> Engineering a Better Environment	
<b>FIGURE:</b> 7	

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Note: Projects depicted in figures are conceptual in nature and are not based on formal surveying or test pitting efforts. Size, scope, and nature could vary during the formal design process.

Lambert, Clark, Tachereau Separation Bideford, Maine	
PROJ NO: 20496A	DATE: 2/27/2024
	
FIGURE: 8	

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- Proposed Drain Manhole
- Proposed Drain Pipe
- Contour (5ft)
- Manholes
- Sewer or Combined
- Storm
- Unknown
- Catch Basins
- Combined
- Separated
- Unknown
- "Realistic" Combined Catch Basin
- Gravity Mains
- Water Type
- Sewer or Combined
- Storm

Note: Projects depicted in figures are conceptual in nature and are not based on formal surveying or test pitting efforts. Size, scope, and nature could vary during the formal design process.

<p>Westland, Dental, Forest, Rathier Separation Bideford, Maine</p>	
<p>PROJ NO: 20496A</p>	<p>DATE: 2/27/2024</p>
<p><b>WRIGHT-PIERCE</b> Engineering a Better Environment</p>	
<p>FIGURE: 9</p>	

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- Proposed Drain Manhole
- Proposed Drain Pipe
- Contour (5ft)
- Manholes
  - Sewer or Combined
  - Storm
  - Unknown
- Catch Basins
  - Combined
  - Separated
  - Unknown
- "Realistic" Combined Catch Basin
- Gravity Mains
  - Sewer or Combined
  - Storm

PIPE CAPACITY UPGRADES

SEWER SEPARATION

Note: Projects depicted in figures are conceptual in nature and are not based on formal surveying or test pitting efforts. Size, scope, and nature could vary during the formal design process.

Rumery Capacity Upgrades  
and George Separation  
Biddeford, Maine

PROJ NO:	20496A	DATE:	2/27/2024
			FIGURE: 10



# City of Biddeford, Maine

## Public Works Department

371 Hill Street Biddeford, Maine 04005

May 6<sup>th</sup>, 2024

To: **George Gervais, Economic Development Director**  
David Galbraith, City Planner

From: **Jeff Demers, Public Works Director**  
Craig Chekan, City Engineer

Re: **Biddeford Sewer Capacity Deficits – Proposed Development Impacts**

For the past several years, Biddeford's Public Works Department has been working closely with Wright-Pierce (WP), a private engineering consultant, to assess the City's existing sewer infrastructure and potential capacity impacts from incoming development.

Through Wright-Pierce's analysis and sewer model, there are a handful of existing chokepoints within the City's old sewer infrastructure that cannot handle today's growing development market.

The purpose of this memo is to summarize these sewer capacity deficits and limit further development planning in these sewersheds until proper funding and design for capacity upgrades have been fully-vetted.

### 1. Home Depot (HDPS) & SMHC Pump Stations

- a. Starting in 2022, when Devine Capital began permitting their housing development project on Andrews Road, Wright-Pierce analyzed the sewer capacity impacts along the western Alfred Street corridor.
- b. After almost a year of back-and-forth analysis, Wright-Pierce confirmed that Devine Capital's Andrews Road project would require multiple sewer capacity upgrades:
  - i. New pumps at HDPS and SMHC
  - ii. ±5,500-LF of new force main (including a section under I-95/wetlands)
- c. Accounting for additional future growth needed in this sewershed, initial cost estimates for WP's HDPS/SMHC upgrades = \$2.5MM to \$3.5MM

### 2. Thatcher Brook Pump Station (TBPS) in Barra Road

- a. In 2023, Wright-Pierce analyzed the sewer impacts if Mike Eon's full Barra Road Development (400-units) drained to TBPS and determined that nearly the entire conveyance system from Barra Road to Horrigan Court Pump Station was undersized and would require upgrades (i.e. too costly)
- b. In 2024, Mike Eon requested Wright-Pierce perform an alternate capacity analysis – assuming only 10,000-gpd from his Barra Road Developments would flow to TBPS (1,000-gpd for his 25 Barra Road dentist office and 9,000-gpd for his Avesta Housing project).
- c. WP confirmed Mr. Eon's 10,000-gpd Barra Road Development will put:
  - i. The Thatcher Brook Pump Station and force main at 100% capacity (utilizing a 5.2-peaking factor, vs. WP's recommended 5.6-peaking factor); thus restricting any further development in this sewershed.
  - ii. Puts the Cathedral Oaks gravity main at ±80% capacity
- d. Note: a significant portion of TBPS's remaining sewer capacity was utilized for the large 60 Barra Road residential development currently being constructed (which Mr. Eon sold to Saxxon Properties, who then sold to Reveler/Port Properties).



## City of Biddeford, Maine

### Public Works Department

371 Hill Street Biddeford, Maine 04005

#### 3. Main Street Pump Station (MSPS)

- a. Based on Wright-Pierce's latest 2024 capacity analysis, Mr. Eon's 10,000-gpd Barra Road Development (i.e. Avesta Housing Project) will require substantial upgrades at the MSPS:
  - i. New pumps, new 8" suction line, and new 8" force main
  - ii. The existing undersized wetwell would also merit replacement
- b. Initial cost estimate for the MSPS upgrades = \$750K to \$1.25MM

#### 4. Railroad Gravity Sewer Main

- a. Since the TBPS cannot handle anything in excess of Mr. Eon's 10,000-gpd Barra Road Development (i.e. Avesta Housing), Wright-Pierce analyzed the non-Avesta portion (400-units minus 10,000-gpd) being routed via the cross-country railroad gravity main between Alfred Street/Pomerleau Street and Colonial Drive
- b. WP confirmed that approximately 3,000-LF of the cross-country railroad gravity main would require upsizing (once accounting for existing flows and Devine Capital's upcoming Andrews Road project)
- c. Permitting construction adjacent to the existing railroad is a big unknown, but an initial cost estimate for upsizing the railroad gravity main ranges between \$1.5MM and \$2.0MM
- d. This cross-country railroad is a major sewer main, serving a huge upstream sewershed – thus causing a major chokepoint for future development areas (Biddeford Crossing, 5 Points Shopping Center, SMHC, Morin Street)

#### 5. Pepperell Mill Textile Pump Station

- a. The City owns a sewer pump station within Pepperell Mill's Building #15 that primarily serves the Pepperell Mill and Lincoln Mill campuses.
- b. Based on recent redevelopments in these mill campuses, Staff estimates this pump station will be operating at  $\pm 90\%$  capacity.
- c. Pump upgrades and/or noise dampening should be accounted for if additional development growth is slated for this sewershed

#### **Note:**

- a) No formal designs or cost estimates have occurred; estimates can vary greatly based on design process (design-bid-build, design-build) and permitting (I-95, railroad).
- b) Attached to this memo is:
  - i. An exhibit documenting the locations of sewer capacity deficits #1-#4 listed above
  - ii. A copy of the City's overall sewer utility map

# CITY OF BIDDEFORD - WESTERN SEWER CAPACITY DEFICITS

## SECTION #1: HOME DEPOT & SMHC PUMP STATIONS

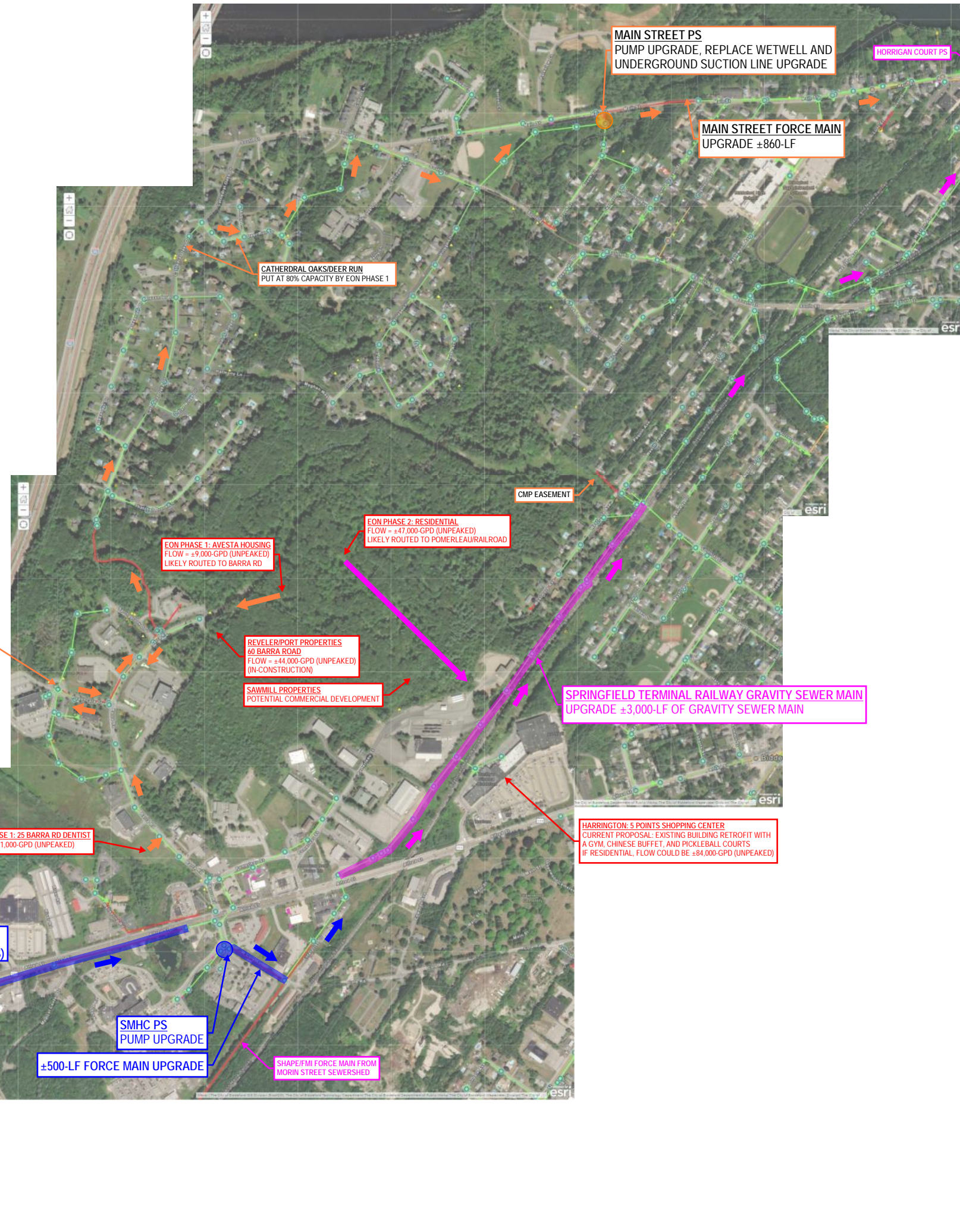
SCOPE: REPLACE TWO PUMP STATIONS & ±5,400-LF OF FORCE MAIN (INCLUDING UNDER TURNPIKE/WETLANDS)  
 DESIGN-BUILD CONSTRUCTION COST ESTIMATE: \$3.50MM

## SECTION #2: RAILROAD GRAVITY MAIN

SCOPE: UPSIZE ±3,000-LF OF GRAVITY MAIN ADJACENT TO RAILROAD  
 DESIGN-BUILD CONSTRUCTION COST ESTIMATE: \$2.00MM

## SECTION #3: MAIN STREET PUMP STATION

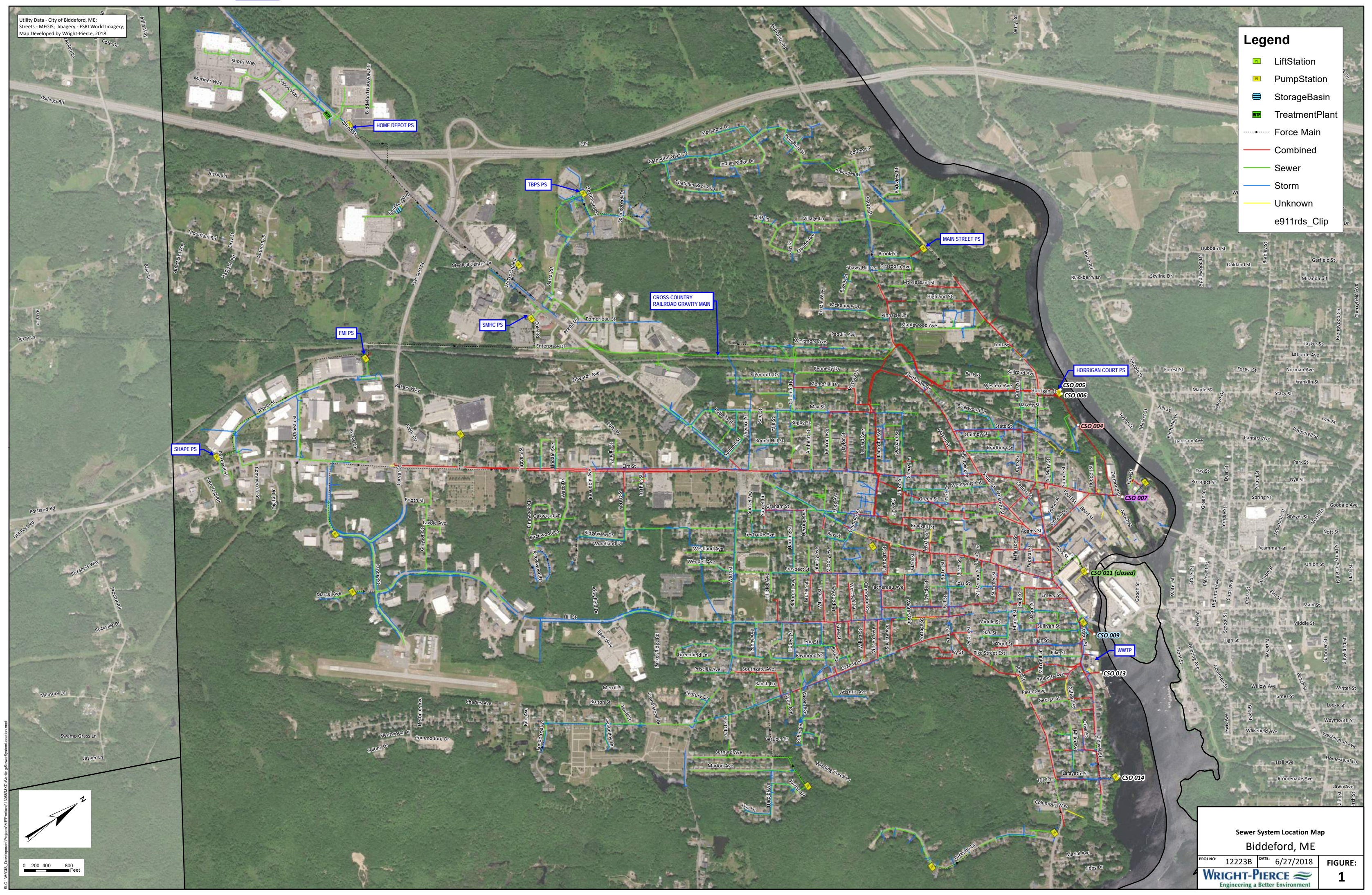
SCOPE: REPLACE PUMP STATION, UNDERGROUND SUCTION LINE, WET-WELL, & ±860-LF FORCE MAIN  
 DESIGN-BUILD CONSTRUCTION COST ESTIMATE: \$1.25MM



Utility Data - City of Biddeford, ME;  
 Streets - MEGIS; Imagery - ESRI World Imagery;  
 Map Developed by Wright-Pierce, 2018

**Legend**

- LiftStation
- PumpStation
- StorageBasin
- TreatmentPlant
- ..... Force Main
- Combined
- Sewer
- Storm
- Unknown
- e911rds\_Clip



**Sewer System Location Map**  
 Biddeford, ME

PROJ NO: 12223B	DATE: 6/27/2018
<b>Engineering a Better Environment</b>	

**FIGURE: 1**

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**Table 100: Estimated Sewer Design Flows**

Revision Date: 6/5/2024

**Residential:**

Number of Bedrooms	Area of Bedroom	Design Flow (gpd/unit)
1	<600 SF	90
	600-800 SF	120
	In-Law Apartment	120
	801-1000 SF	135
	>1000 SF	150
2	N/A	180
3		270
4		360

**Non-Residential:**

Refer to the latest Maine Department of Health & Human Services Chapter 241 for non-residential flow rates. Final design flows to be determined by the City Engineer.

**Notes:**

- Final floor plans are required for all sewer permit applications, verifying number/sizes of proposed uses.
- For units exceeding 4 bedrooms, a design flow of 90 gpd shall be used for each additional bedroom.
- For multi-use properties, the total design flow shall be the sum of each individual use design flow.
- The residential design flows listed above are referenced from Maine Department of Health & Human Services Chapter 241.
- Definition of bedroom and in-law apartment determined via local code enforcement/ordinance, plumbing code, and the referenced Chapter 241.
- The above-stated flows are final; no reference flow data to be considered.

**Table 200: Sewer Permit Fees**

Revision Date: 6/5/2024

Sewer Fee Type	Existing Fee	Proposed Fee
Application Fee <sup>1</sup>	\$200	\$200
Sewer Main Connection Fee <sup>2</sup>	\$500/each	\$800/each
Single-Lot Shared Lateral Fee <sup>3</sup>	\$100/each connection	\$100/each connection
Tying into an Existing Sewer Lateral Stub <sup>4</sup>	\$100/each connection	\$100/each connection
Impact Fee <sup>5</sup>	\$3.72 to \$16.95/GPD	\$20/GPD
Inspection Fee <sup>6</sup>	\$35-\$100	\$200

**Notes:**

- All sewer permits require an application fee.
- 'Sewer Main Connection Fee' applies for new connections to the public sewer main.
- 3A. 'Single-Lot Shared Lateral Fee' is applied to each individual unit connecting to a sewer lateral serving a single-lot (multi-family apartments, ADU, hotel rooms, etc.)
- 3B. Shared sewer laterals are not permitted for separate lots.
- 3C. Only in rare circumstances will a shared sewer lateral be allowed for multiple privately owned lots, pending Public Works Director approval and a formal easement is provided signed by all parties - negating the City of any responsibility.
- 'Tying into an Existing Sewer Lateral Stub' is for undeveloped lots connecting to previously installed sewer lateral stubs.
- 5A. 'Impact Fee' is based on proposed design flows (Table 100) and is a one-time fee that covers: future infrastructure upgrades, combined sewer separation, and Inflow & Infiltration (I&I) removal.
- 5B. If an existing building is being retrofitted for the same-use and has previously paid a sewer permit within the last 15 years, existing flows can be credited towards the proposed 'Impact Fee'.
- 5C. No existing flows can be credited towards the proposed 'Impact Fee' for any new building (i.e. demolition/rebuild) or change-in-use.
- All sewer permits requiring exterior sewer modifications require an inspection by the Engineering Department prior to backfilling.
- Sewer permit fees shall be collected and held separately from the operation budget, and strictly used for future sewer improvements.

Community	Avg Residential Fee (200 GPD)	
	\$/Gallon	
Saco	\$ 34.31	\$ 6,862.00
Kittery	\$ 30.00	\$ 6,000.00
<b>Biddeford - Proposed</b>	<b>\$ 26.00</b>	<b>\$ 5,200.00</b>
Scarborough	\$ 19.97	\$ 3,994.00
Ogunquit	\$ 18.50	\$ 3,700.00
Warren	\$ 17.96	\$ 3,592.00
Kennebunkport	\$ 17.50	\$ 3,500.00
Wells	\$ 16.63	\$ 3,326.00
Portland	\$ 16.32	\$ 3,264.00
York	\$ 15.72	\$ 3,144.00
Sanford	\$ 12.50	\$ 2,500.00
Old Orchard	\$ 12.50	\$ 2,500.00
Rockland	\$ 12.00	\$ 2,400.00
Brunswick	\$ 11.59	\$ 2,318.00
Yarmouth	\$ 11.25	\$ 2,250.00
Skowhegan	\$ 8.00	\$ 1,600.00
<b>Biddeford</b>	<b>\$ 7.72</b>	<b>\$ 1,544.00</b>
Augusta	\$ 5.38	\$ 1,076.00
Westbrook	\$ 1.25	\$ 250.00
Bangor	\$ 1.06	\$ 212.00