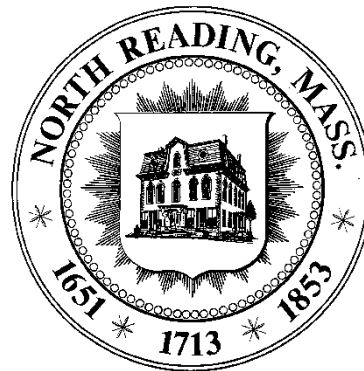


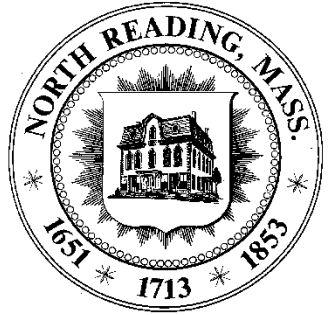
Town of North Reading

Wastewater System Planning/Design

Information Session
October 11, 2022

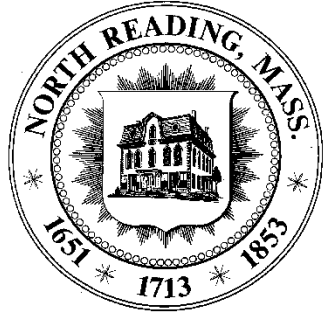


Background



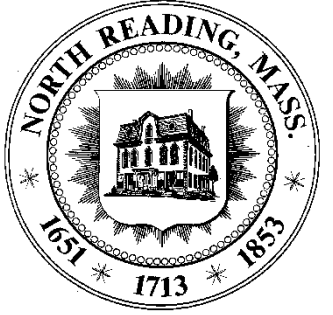
- Currently, any residential or commercial development in North Reading requires construction of an on-site disposal (septic) system. Other than a single parcel at the far end of Concord Street connected to the MWRA through the Town of Reading, there is no wastewater / public sewer utility available in North Reading.
- The concept of public sewer in North Reading has been reviewed over the course of multiple decades, with the Town at various points for various reasons electing not to proceed.

Why do we need a public sewer?



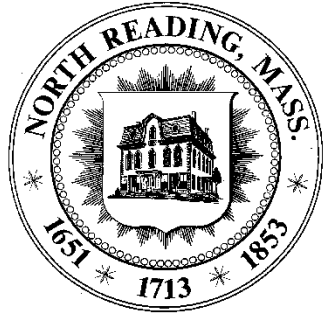
- The Select Board believes that making available a wastewater collection utility (public sewer) in commercial areas will promote economic development by making more land area usable for development and by allowing for more dense development in our commercial/industrial areas
- Increased economic development will provide more local services and more local job opportunities for the region.
- A wastewater collection system will also make possible more multi-family housing construction along Main Street, creating population density to support new businesses.
- The Community Planning Commission has been working over the past five years to identify development possibilities for Main Street.

Why do we need a public sewer?



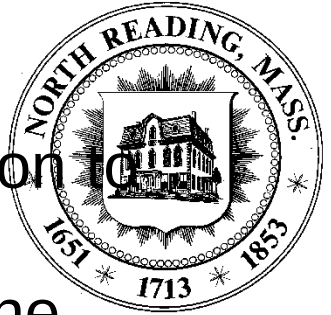
- A wastewater collection system will help promote public health and environmental protection by:
 - Improving surface and ground water quality (i.e., lakes, rivers, aquifer, wetlands)
 - Providing sustainable long-term solution for wastewater management
 - Establishing sewer service for existing commercial/industrial base
 - Establishing sewer service for future commercial/industrial and residential base

Project History



- The most recent review began in 2014 as part of a larger combined water/wastewater planning effort.
- The Town intended to proceed with the MWRA for water and limited wastewater, however due to the significantly higher cost to obtain water from the MWRA compared to expanding our partnership with the Town of Andover, and due to limited capacity at the MWRA compared to Greater Lawrence Sanitary District (GLSD, which serves Andover), the Town elected in 2018 to enter into a 99 year agreement with Andover for water and to pursue a connection with GLSD.

Project History



- Since 2018, the Select Board has been utilizing a \$200,000 appropriation to further explore the feasibility of a wastewater connection to GLSD.
- Previous planning effort included residential neighborhoods, however the Select Board has limited the proposed first phase to the heavily commercial/industrial areas of town to minimize the impact on residential property owners. The anticipated daily wastewater volume of the proposed area is 320,000 gallons, compared to 1,600,000 gallons of water used by all water users in North Reading daily. The Town is seeking 500,000 gallons to accommodate growth within the proposed area and/or the nearby Martin's Pond area.
- Several routes were evaluated, and although progress was slowed due to the Town's resources being focused on responding to the COVID-19 pandemic, the Town entered into discussions with MassDOT regarding a potential route along Routes 28, 125, and 114 in Andover and North Andover.
- The result: There is a route for North Reading to establish a wastewater connection to GLSD.

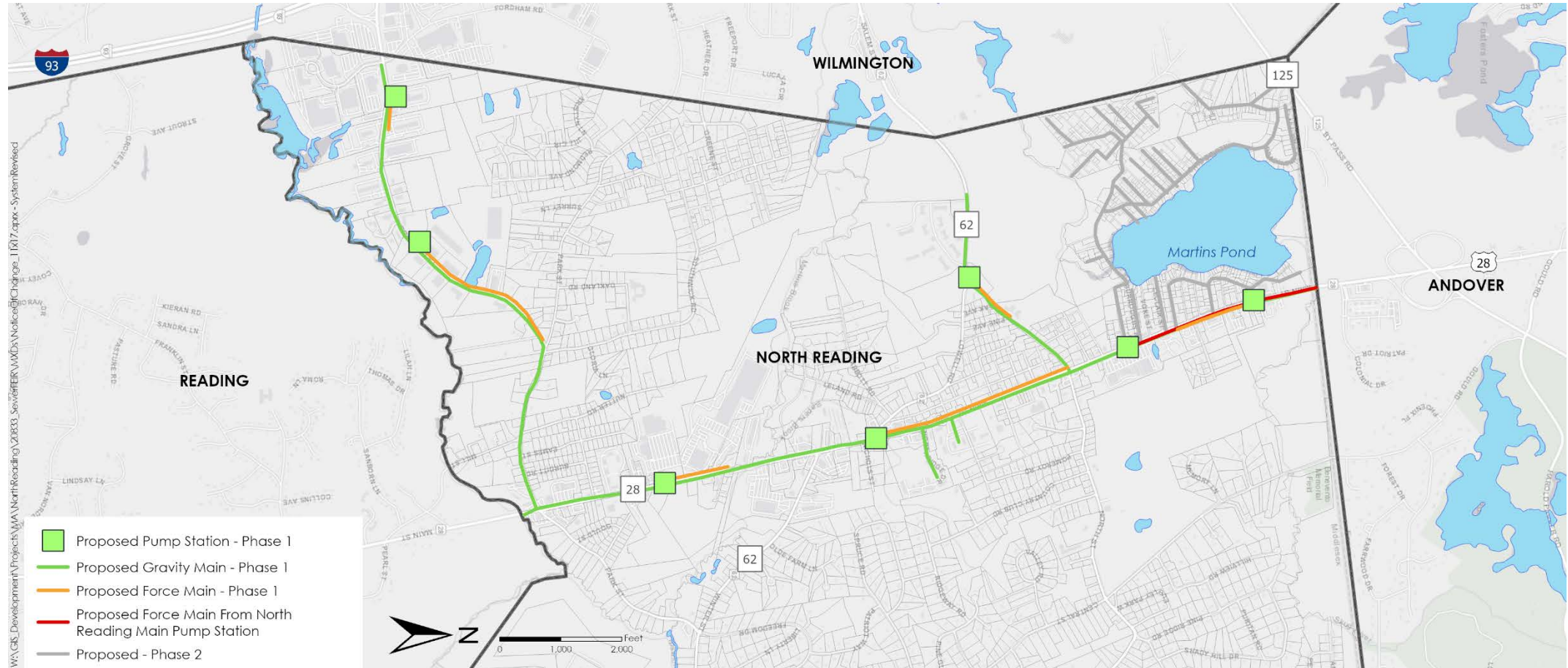
Project History (continued)

- October, 2021 Town Meeting approved an appropriation of \$2,893,000 to advance the design/permitting and developing a full funding plan for a wastewater collection system to service Main Street, North Street west through Lowell Road, and Park Street west through Concord Street. This work represents **phase I** of a wastewater project in North Reading.
- **Phase II** would encompass Martin's Pond, specifically the area bounded by Main Street, both sides of Burroughs Road, the Wilmington town line, and the Andover town line. While flow required to service this area is accounted for in the planning assumptions, neither construction plans nor growth projections were part of this past year's work.
- The Town contracted with Wright Pierce to provide Preliminary Design for the Proposed Municipal Wastewater System and for Final Design of a portion of the System located within the MassDOT Project Area of Route 125 & Route 114 Intersection where MassDot is designing now for drainage improvements and roadway resurfacing.

Project History (continued)

- The Town is designing a system for wastewater flow of 503,000 gallons per day (gpd) to accommodate both the phase I and phase II needs in these areas as well as future new growth needs.
- The Town is also contracted with Kleinfelder to perform a Municipal Wastewater Financial Assessment Study on the options for financing the estimated project cost of the Municipal Wastewater System, including growth projections. A detailed presentation of this information will follow.

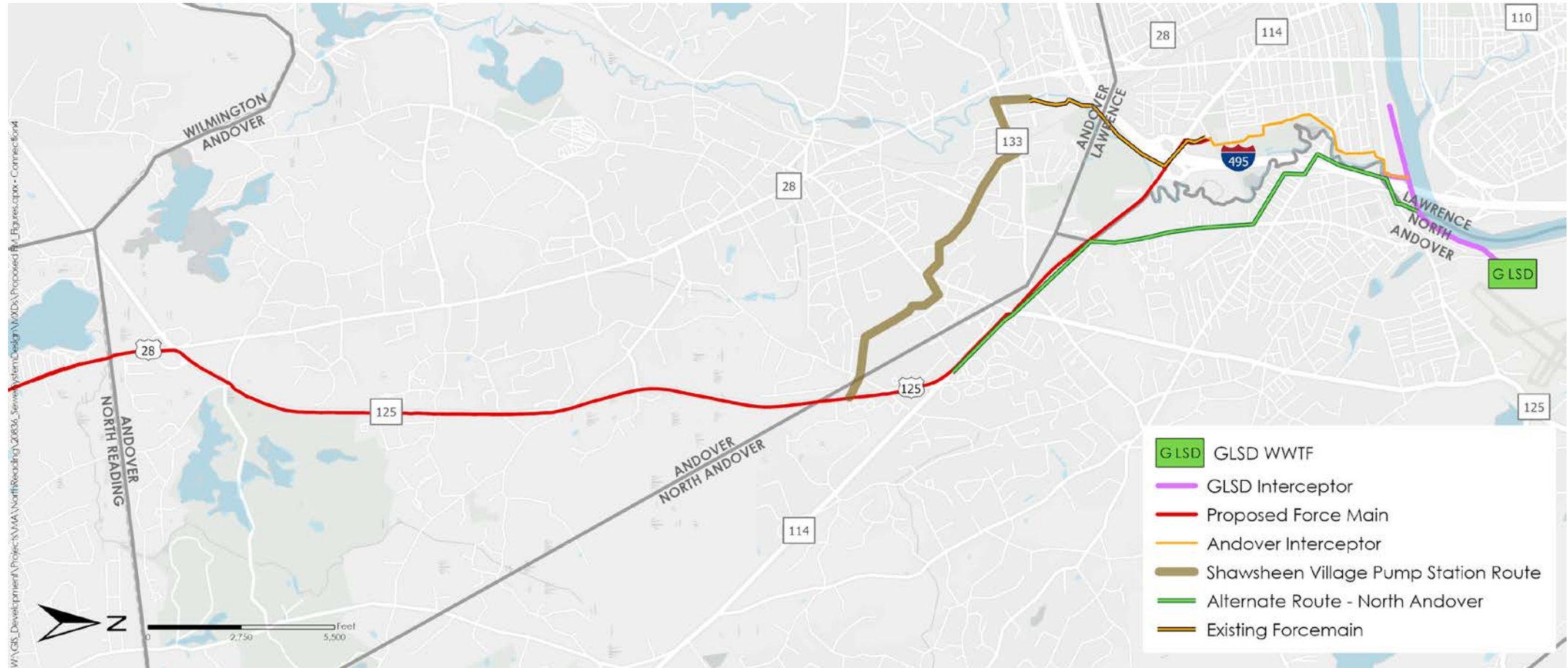
In-Town Wastewater Collection System



How will wastewater be disposed of?

- Discussions with Andover and North Andover have been ongoing. The intended route to convey wastewater via a force main to the Greater Lawrence Sanitary District (GLSD) wastewater treatment plant located in North Andover is to follow Route 28 to Route 125 to Route 114.
- Andover and North Andover encouraged the Town to look at other options for a route from slightly south of the Route 125 intersection with Route 114 to GLSD.
- Discussions continue with the two communities regarding the best route to connect to GLSD from this area, including potential use of existing gravity sewer line routes that could be upgraded.

Wastewater Conveyance System to GLSD



Summary of Wastewater Flows

- Total Wastewater Design/Permitted Flow Capacity being sought is 503,000 gallons per day (gpd)
 - Reduced by existing Phase I Wastewater Flow Allocation of 186,000 gpd
 - Reduced by Phase II (Martin's Pond) Wastewater Flow Reserve of 32,000 gpd
 - Reduce by Ground Water Infiltration allowance of 29,300 gpd
 - Reduce by 10% Safety Factor for above Allocations & Reserves of 21,800 gpd
- **This results in projected available wastewater flow for future New Growth of 233,900 gpd.** The number could vary, particularly if some users in Phase I or II elect not to connect to the system.

2021 Final Design and Construction Cost Estimate



Item	Area	Final Design Engineering/ Permitting	Construction of Wastewater Infrastructure	Construction Administration & Inspection ²	TOTAL
1	<u>In-Town Wastewater Collection System</u> includes local gravity collection system along Main Street; North Street and Lowell Road; and Park Street and Concord Street	\$1,300,000	\$25,700,000	\$3,855,000	\$30,855,000
2	<u>Wastewater Conveyance System to GLSD¹</u> includes local pump stations and force mains and primary pump station and force main in North Reading continuing along Routes 28, 125 and 114 to the GLSD connection	<u>\$1,687,000</u>	<u>\$57,800,000</u>	<u>\$8,670,000</u>	<u>\$68,157,000</u>
	Sub-Total	\$2,987,000	\$83,500,000	\$12,525,000	\$99,012,000
3	<u>Other Project Costs</u>				
	Land Acquisition (assume 5 lots @ \$1M each)	\$5,000,000			\$5,000,000
	Legal/Administration/Financing Plan	\$1,000,000			\$1,000,000
	GLSD Connection Fee		\$2,000,000		\$2,000,000
	4:1 Infiltration/Inflow Reduction		\$6,000,000		\$6,000,000
	Sub-Total	<u>\$6,000,000</u>	<u>\$8,000,000</u>	<u>\$0</u>	<u>\$14,000,000</u>
	TOTAL	\$8,987,000	\$91,500,000	\$12,525,000	\$113,012,000
	Town Meeting Funding Request	Oct-22	Oct-22	Oct-22	
Notes					
1	includes MassDOT Project - Routes 114/125				
2	assumed to be 15% of construction cost				

Probable Cost Estimate Adjustments for Design & Inflation

Cost Table for PowerPoint			
	2021 Probable Costs (Mil.)	2022 Probable Costs (Mil.)	Change in Probable Costs (Mil.)
Gravity System	\$34.47	\$24.72	(\$9.75)
Force Main System	\$34.93	\$38.67	\$3.74
Pump Stations	\$14.08	\$24.61	\$10.53
Inflation to Midpoint of Construction (15%)	\$0.00	\$10.25	\$10.25
Total Probably Construction Cost	\$83.48	\$98.25	\$14.77
Technical Services	\$15.53	\$15.35	(\$0.18)
Administrative	\$6.00	\$7.50	\$1.50
Connection Fee & I/I Removal Fees	\$8.00	\$8.00	\$0.00
Total Opinion of Probable Project Cost	\$113.01	\$129.10	\$16.09

Do we have the Bonding Capacity to Borrow the Funds needed to construct the Sewer Project?

- The general debt limit of the Town of North Reading consists of a normal debt limit and a double debt limit. The normal debt limit is 5 percent of the valuation of taxable property as last equalized by the State Department of Revenue. The Town can authorize debt up to this amount without State approval. It can authorize debt up to twice this amount (the double debt limit) with the approval of the State Municipal Finance Oversight Board composed of the State Treasurer, the State Auditor, the Attorney General and Director of Accounts.
- There are many categories of general obligation debt which are exempt from and do not count against the General Debt Limit. Among others, these exempt categories include certain school bonds, self-supporting sewer bonds, water bonds, bonds for electric, gas, and community antenna television systems, and telecommunications systems bonds, solid waste disposal facility bonds.
- The Town's current debt limit is \$180,383,440 and, with state approval, the debt limit can be raised to \$360,766,880. The outstanding debt and debt authorized but not yet issued subject to the debt limit is 15,077,369.75, leaving additional borrowing capacity of \$165,306,070 under the normal debt limit and \$345,689,510 under the double debt limit.
- The bottom line is that the Town has ample capacity under the statutory debt limits to authorize future capital projects that are subject to the debt limits. However, this capacity should not be confused with the Town's ability to support the payment of additional debt service within the Town's Proposition 2 ½ levy limit or the need for additional revenues (betterment assessment revenues or debt exclusion revenues).

Municipal Wastewater System Financial Assessment Study

**An Assessment on Financing Options for the
Municipal Wastewater System.**



PART I - Municipal Wastewater System Cost & Financing Analysis

- GIS Mapping of the Proposed Municipal Wastewater Service Area.
- Perform a 3 Year Avg. Water Use Analysis to assign Sewer Units.
- Confirm the adequacy of 503,000 gal/day annual sewer discharge.
- Provide a Summary of Betterment Assessment Methods.
- Develop a Wastewater System Project Financing Model, including the use of Sewer Betterments, Debt Exclusion, Grants and other Special Revenues.
- Assist with draft Sewer Betterment Assessment By-Law for Town Meeting Adoption.
- Presentation of Part I cost/financing information to the Select Board June 2022.

PART II - Property Valuation & New Growth Analysis

- Perform a Potential Build-Out Analysis
- Conduct Public Outreach and solicit survey data from property owners/businesses
- Develop a matrix of potential property development
- Recommend Zoning Regulation changes, if any that may be needed, to optimize desired development
- Evaluate Potential Real Estate Market Value Increases and New Growth Tax Dollars
- Calculate a Return on Investment over a 30 Year Debt Service Payment Period.
- Provide Public Outreach Meeting Assistance during outreach meetings with property owners, businesses and with the General Public.
- Presentation of Part II information to the Select Board in summer of 2022



Town of North Reading Municipal Wastewater System Financial Assessment Study

Community Workshops

Tuesday, October 11th

Wednesday, November 2nd

Tuesday, November 15th

Businesses Workshop

Tuesday, October 25th

Resident Workshop

Tuesday, October 18th



Agenda

1

Background

2

Betterment Determination

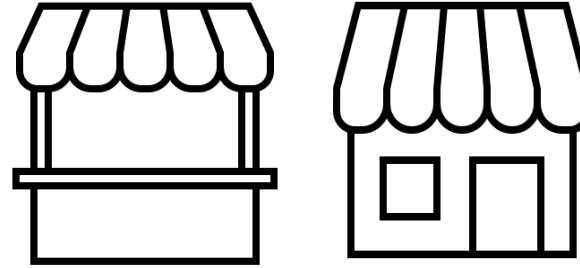
3

Return on Investment

Why Do We Need Public Sewer?

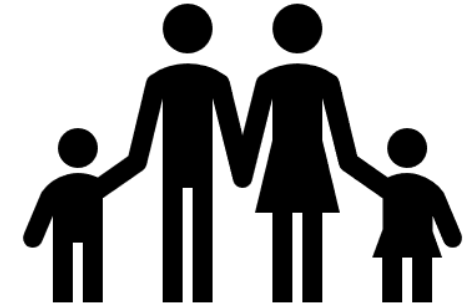
- **Promote Economic Growth**

- Increased services
- Increased job opportunities
- Increased property values



- **Limited Multi-Family Housing on Main St.**

- Guided growth in population density to support business



- **Promote Public Health & Environmental Protection**

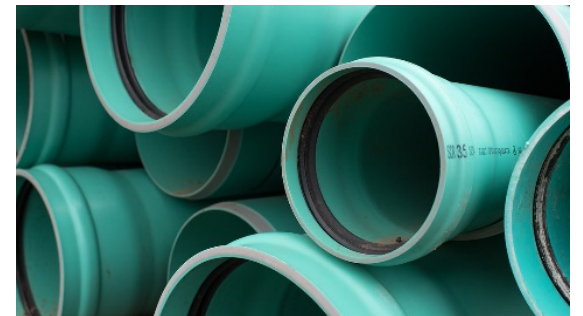
- Improve surface and groundwater quality



What is a Betterment and What Does it Pay For?

A **Betterment** is a special property tax that is permitted where a special benefit or advantage is received from the construction of a public improvement. For sewers, these costs cover:

- **General Benefit Facilities**, such as pumping stations, trunk sewers and force mains, and
- **Special Benefit Facilities**, such as mains serving adjacent properties.



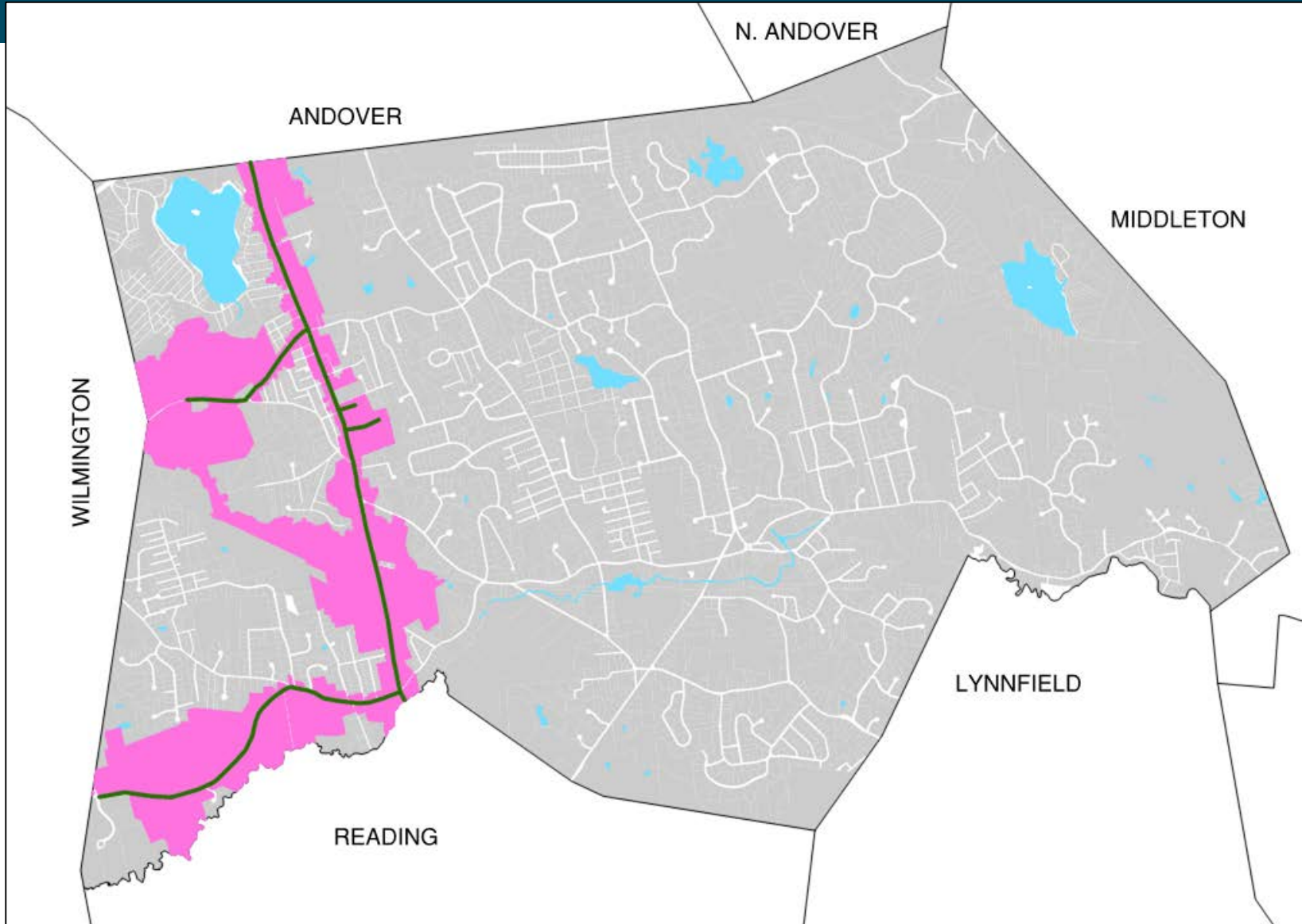
How Does a Betterment Work?

A betterment is a **municipal lien** on a property, determined once all project costs are finalized. The property owner may elect to pay all or a portion of the lien when assessed, stretching the remainder over the bonding period, or portion thereof.



*This lien must be paid at
time of sale if the
property is sold.*

Who is Assessed a Betterment?



All parcels abutting the proposed sewer main may be assessed a betterment to help cover the costs of the project.

Who Decides on a Betterment?

The Select Board must hold a meeting and vote on betterments.

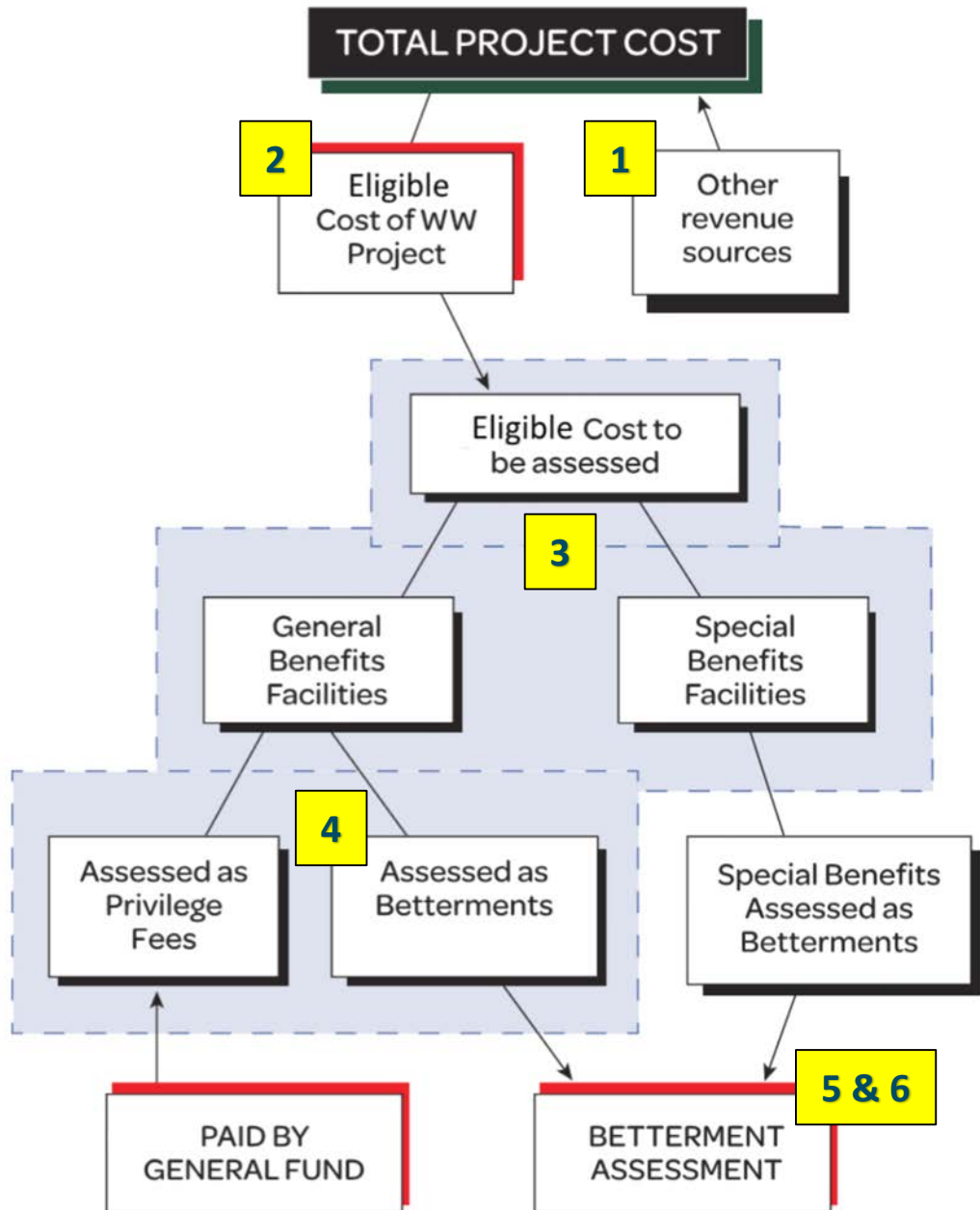
The Betterment Vote must decide on the following issues:

1. Percentage of Eligible Project Costs to Collect through Betterments
2. Method to Assess Betterments
3. Interest Surcharge to Be Added by the Town (Allowed up to 2% over borrowing interest rate)

What Decisions Must Be Made?

□ Decision Points:

1. Establish Alternative Revenue Sources
2. Determine Eligible Project Costs
3. Determine Cost Distribution Between General and Special Benefits
4. Determine % of General Benefits Facilities Costs Assessed as Betterments
5. Select Betterment Methodology
6. Calculate Betterments Costs Once Project Costs are Finalized



Betterment Assessment Methodology

- **Unit Uniform Method**: A method for assigning betterments based on dividing costs between existing and potential residential equivalent sewer units based on existing zoning *M.G.L. Ch. 83 §15*



Flow from a single-family residential home = 1
equivalent sewer unit

Each commercial / industrial property is assigned a number
of equivalent sewer units based on estimated wastewater
contributions



Water Use Method

$$\text{No. of Sewer Units} = \frac{\text{Historical Water Use}}{\text{Equivalent Sewer Unit Flow}}$$

Example: A store using 390 gpd is assessed 3 sewer units.
 $390 / 130 = 3$

Notes:

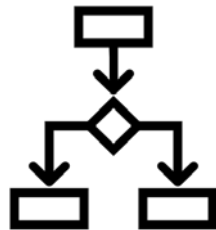
1. Average Water Use for Single-Family Homes = 130 gpd = 1 Equivalent Sewer Unit
2. All single-family homes assigned 1 sewer unit
3. All condo units assigned 0.75 sewer units
4. Commercial & Industrial Properties are Assigned a number of sewer units based on historical water use
5. Sewer Units rounded up to nearest 0.25

$$\text{Cost (\$) Per Sewer Unit} = \frac{\text{Total Betterment Assessment Cost}}{\text{Total Number of Sewer Units}}$$

Betterment Determination Variables

Town Decision Points

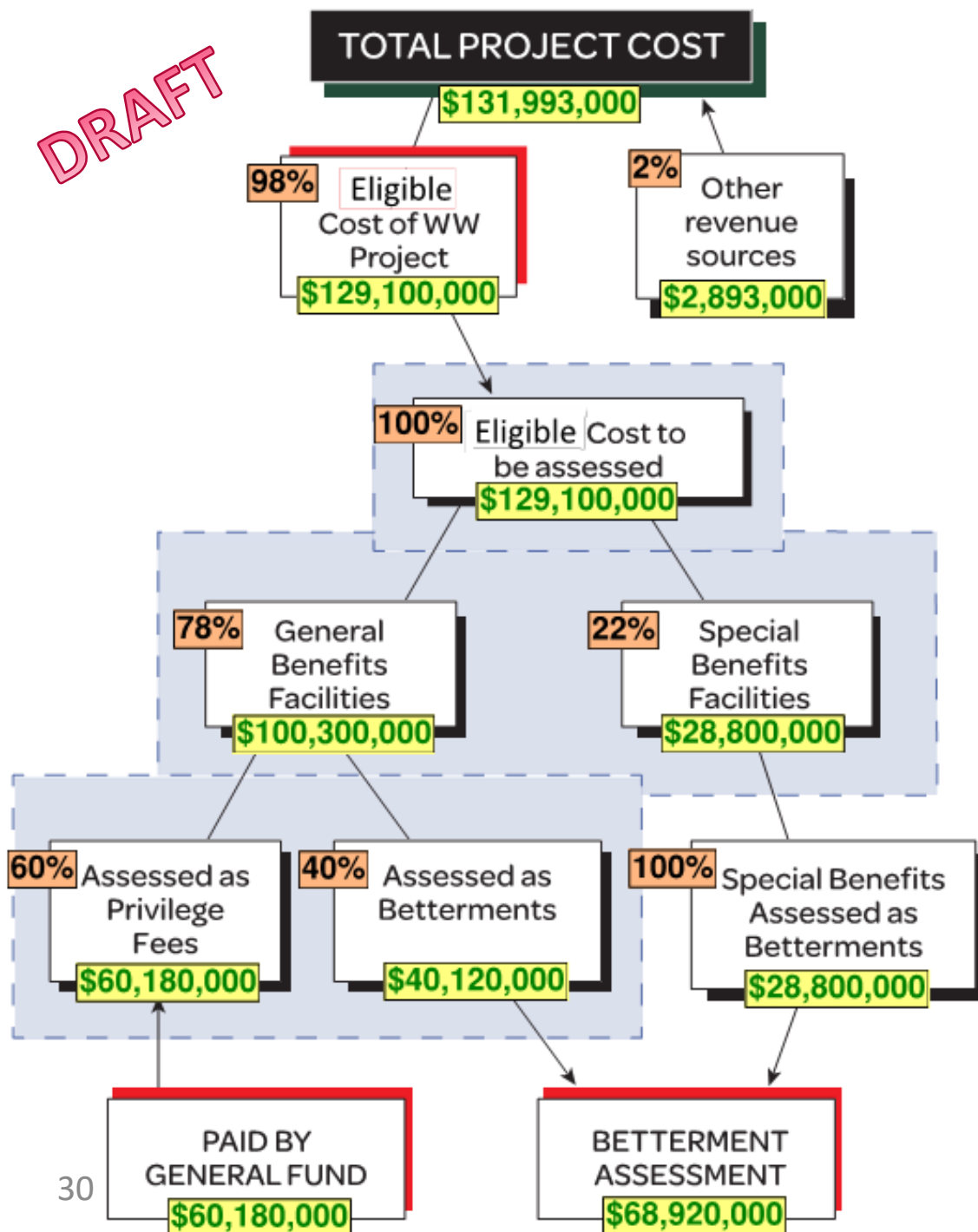
- Project Cost Allocations
- Betterment Methodology
- Loan Period and Interest Rate
- Parcels Assessed a Betterment



Base Model Assumptions

- \$129.1 Million Eligible Project Costs
- Approx. \$68,900,000 Assessed as Betterments
- Water Use Method
- 30-Year Loan Period
- 5% Interest Rate

DRAFT



Base Model Cost Allocations

Base Model Assumptions for Demonstrative Purposes Only

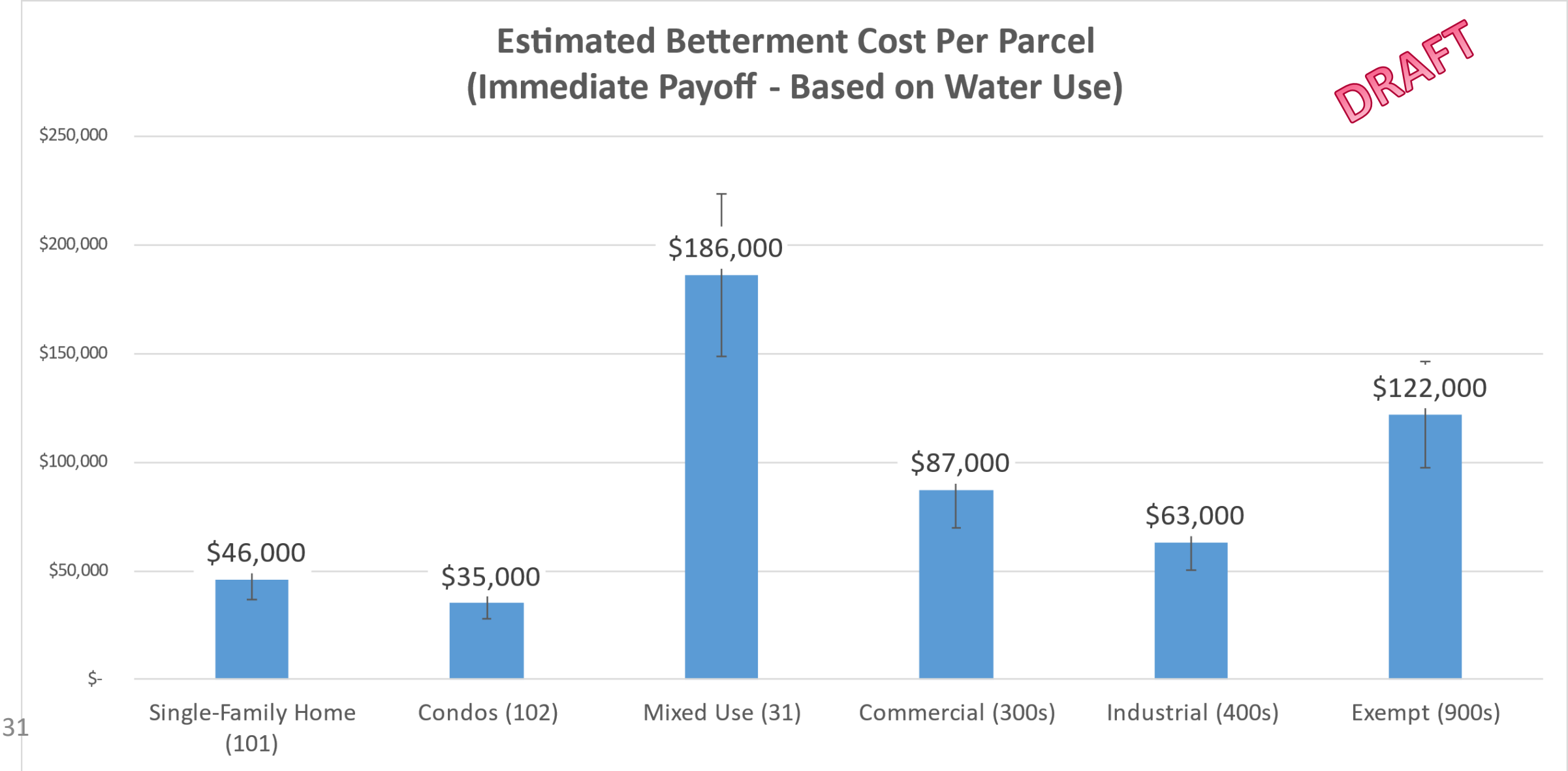
**Based on an estimated Total Project Cost of \$131,993,000. The final cost allocations will be determined by the Select Board after final construction costs are known. Values have been rounded.*

Betterment Estimates: Immediate Payoff

**Based on an estimated Total Project Cost of \$131,993,000.
The final cost allocations will be determined by the Select
Board after final construction costs are known. Values have
been rounded.*

**Estimated Betterment Cost Per Parcel
(Immediate Payoff - Based on Water Use)**

DRAFT

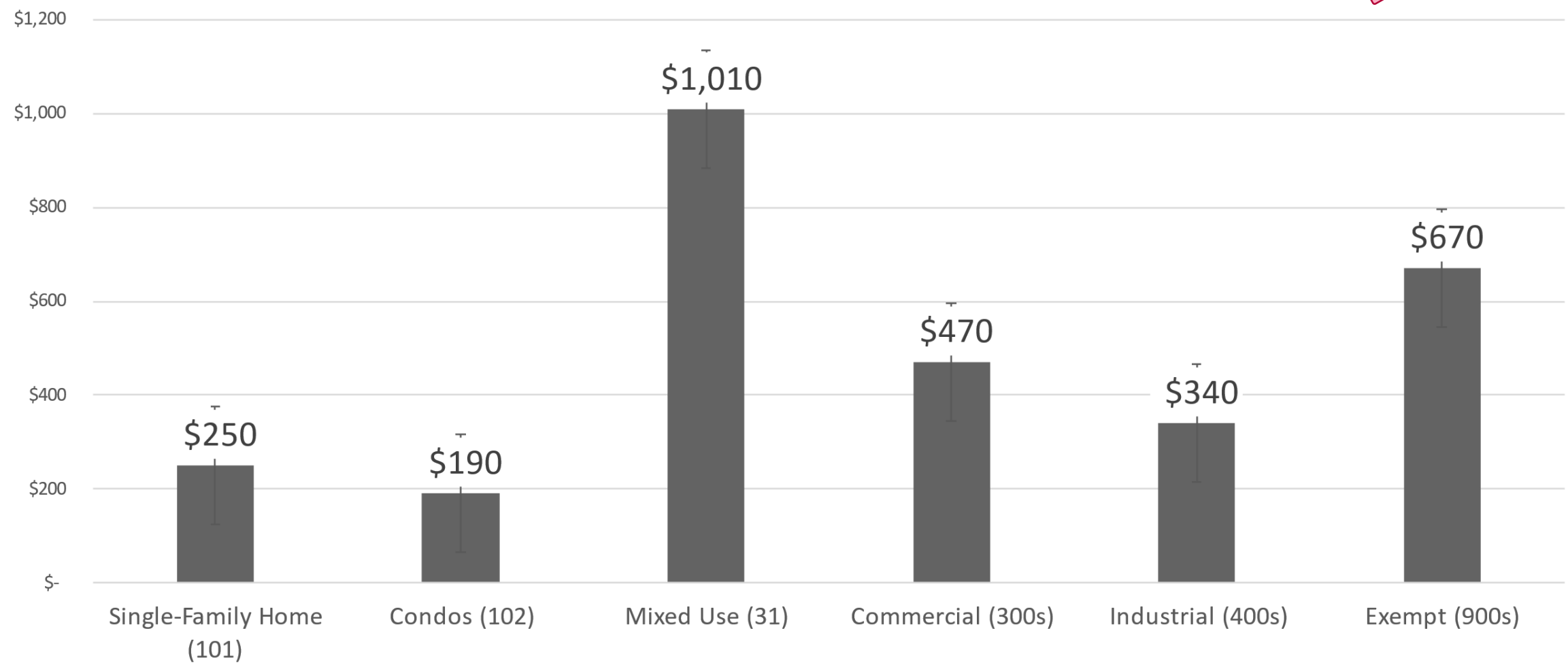


Betterment Estimates: 30-Year Loan, 5% Interest Rate

**Based on an estimated Project Cost of \$131,993,000. The final cost allocations will be determined by the Select Board after final construction costs are known. Values have been rounded.*

Average Monthly Betterment Cost Per Parcel
with 30-Year, 5% Loan Rate

DRAFT



How Can We Pay Off the Remaining Debt?



Betterments

Existing Property Value
Increase Tax Levy

Residential New
Growth Tax Levy

Commercial New
Growth Tax Levy

Alternative Revenues
(Grants, Land Sale)

To Avoid
Increasing
General Tax
Rates:
Increase \$ In
Decrease \$ Out

Potential Impact on Residential Taxes

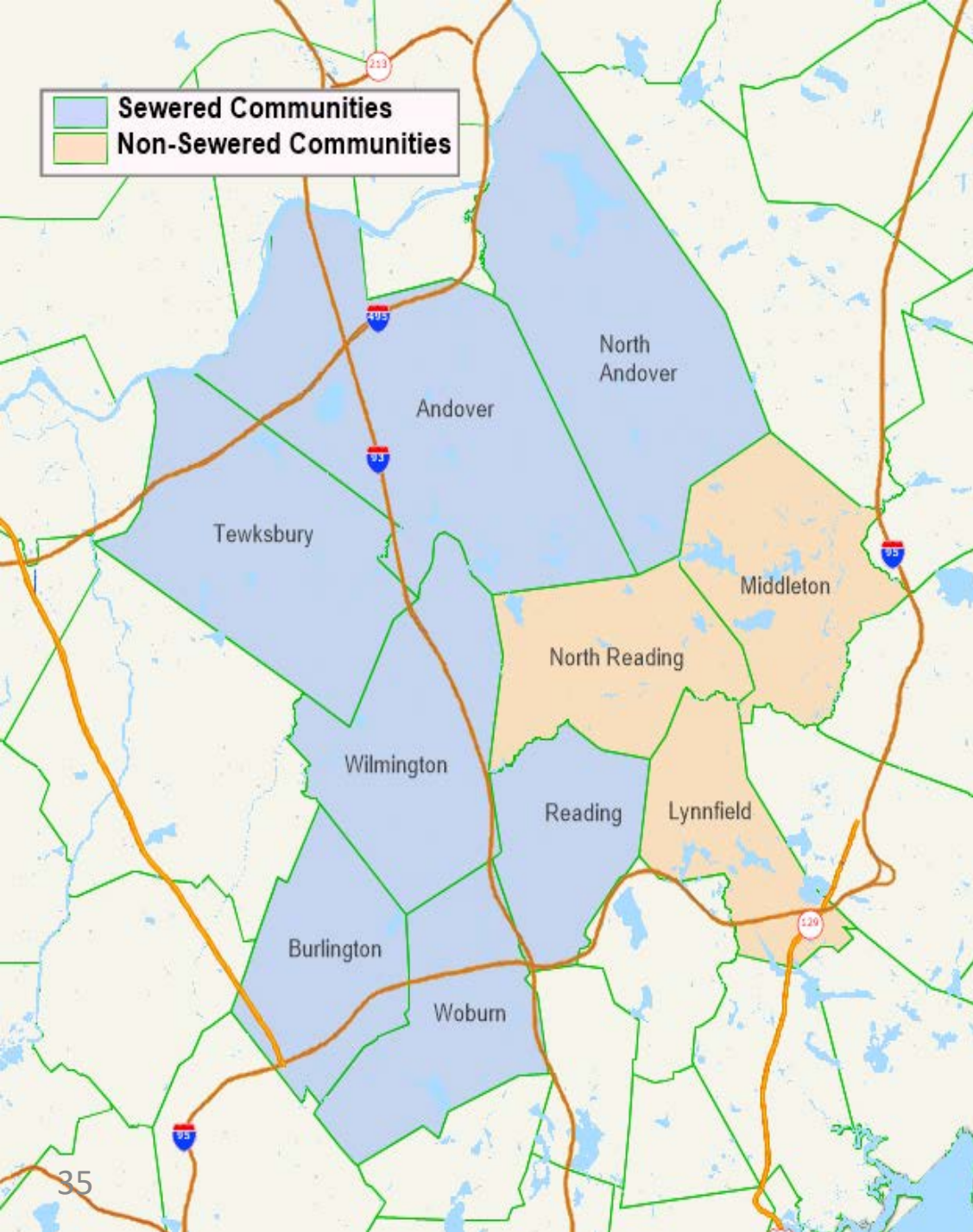
No Alternative Funding Scenario
(No grants, land sale, revenue from projected growth)

FY 22 Tax Rate: \$15 / \$1,000 Evaluation

Over 30-Years

Average +\$0.96 / \$1,000 Evaluation
or approximately

+\$660 Increase in Annual Tax for Average Single-Family Home



- FXM Projected Commercial / Industrial, and Multi-Family Residential Growth in the Sewer District is based on Projected Demand in Surrounding Sewered Towns
- Not a feasibility study – for long term planning purposes on
- Assumes constant tax rate of \$15 / \$1,000 valuation

Conclusion: There is sufficient demand within the market area to absorb the projected commercial SF potential and number of units projected

Part II – Property Valuation and New Growth

Summary Findings Potential Financial Impacts of Proposed Wastewater Management System Commercial & Industrial Properties

	Retail	Industrial/Flex	Office	TOTAL
Potential Increases in Value of Existing Properties (\$2022)	\$ 126,325,000	\$ 41,618,000	\$ 22,118,000	\$ 190,055,000
Potential Net New Growth (2026-2056)				
Inventory (SF)	359,000	1,954,000	305,000	2,618,000
Property Values	\$ 127,841,000	\$ 624,790,000	\$ 149,845,000	\$ 902,476,000
Tax Revenues	\$ 1,918,000	\$ 9,372,000	\$ 2,248,000	\$ 13,537,000

Market Demand Potential Only
Actual Growth Impacted By Town Decision Making

Projections Define
100% Potential Residential Growth,
100% Potential Commercial Growth

Summary Findings Potential Financial Impacts of Proposed Wastewater System Multifamily Residential Properties

Potential Net New Growth (2026-2056)		
Inventory (number of units)		1,302
Property Values	\$ 698,587,000	
Tax Revenues	\$ 10,479,000	

ROI Sewer Related New Growth

30 Year Average Percentage of New Growth Potential ¹	30 Year Total Debt Obligation ²	30 Year Total Sewer Related Prop 2 1/2 New Growth Tax Revenue	30 Year ROI Calculation
25% Residential 25% Commercial	\$133,871,000	\$110,250,000	0.8
50% Residential 50% Commercial	\$133,871,000	\$220,500,000	1.6
75% Residential 75% Commercial	\$133,871,000	\$330,748,000	2.5
100% Residential 100% Commercial	\$133,871,000	\$440,997,000	3.3

37 (1) Based on market demand potential for new growth evenly distributed over 30 years.

(2) Assuming 0% residential opt-out and betterments payments evenly distributed over 30 years

Where can you find out more?

For additional information refer to the Town's website:

<https://www.northreadingma.gov/new-sewer-information>

Join us at a workshop! (Additional details to follow)

- Community workshop, **Tuesday, October 11th**
- Resident workshop, **Tuesday, October 18th**
- Business workshop, **Tuesday, October 25th**
- Community workshop, **Wednesday, November 2nd**
- Community workshop, **Tuesday, November 15th**



Frequently Asked Questions

- I don't live along the route. Will this project impact me?
 - Yes, the Town is evaluating all funding options including a potential debt exclusion vote that would increase property taxes for all property owners in Town to pay for a portion of this project. For the average single-family homeowner in North Reading, the cost is projected to cost \$660 per year.
- I live or own property along the route. What will it cost me?
 - The betterment cost is projected to be \$46,000 and would be paid back over 30 years or at the time of a sale of your property, whichever comes first. This would be in addition to the property tax amount listed above.

Frequently Asked Questions

- What is the difference between “betterment” and “connection”?
 - “Betterment” is the amount you are billed for having the ability to connect to a public sewer. “Connection” is the actual construction of a pipe from the street to your house, and is above and beyond the betterment cost.
- Will I have to connect to the sewer?
 - No, but if you do not connect you will still be assessed the betterment. In certain circumstances where a septic system is failed, the property may be required to connect.
- I just did my septic system. Do I need to connect?
 - No, however you would be required to pay the betterment. The Town is looking in to whether properties with recently-constructed septic systems could be exempted from the betterment.

Frequently Asked Questions

- Why are residents who will not be able to connect to the sewer system being asked to pay for some of the cost?
 - The system that will be constructed will provide for additional sewerage beyond what is currently in place. While future connections, or any increase in connection flow at a property, along the route will result in additional payments to the Town that could reduce how much the taxpayers need to pay, the Town is presenting residents with a “worst-case” scenario in terms of how much it might cost.

Additional Information

- Additional community and resident/business abutter meetings will be held in the coming weeks.
- Visit <https://www.northreadingma.gov/wastewater-sewer-information> or email sewer@northreadingma.gov for more information.