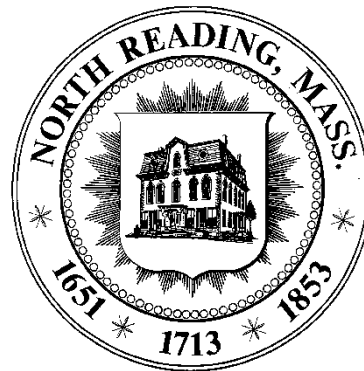


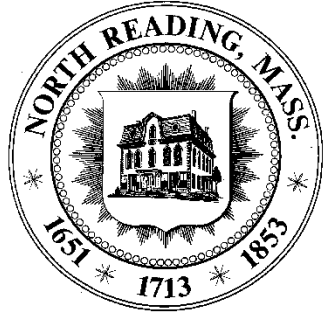
# **Town of North Reading**

## **Wastewater System Planning/Design**

**Resident Abutter Information Session**  
**October 18, 2022**

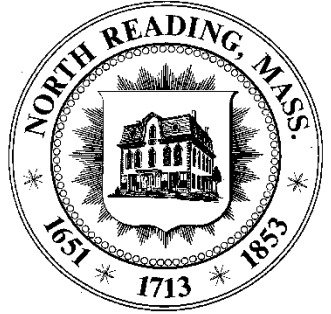


# Background



- 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.

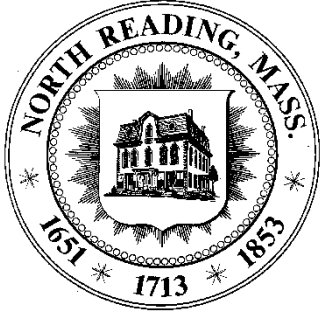
# To the north: Andover





# To the south: Reading





# Why do we need a public sewer?

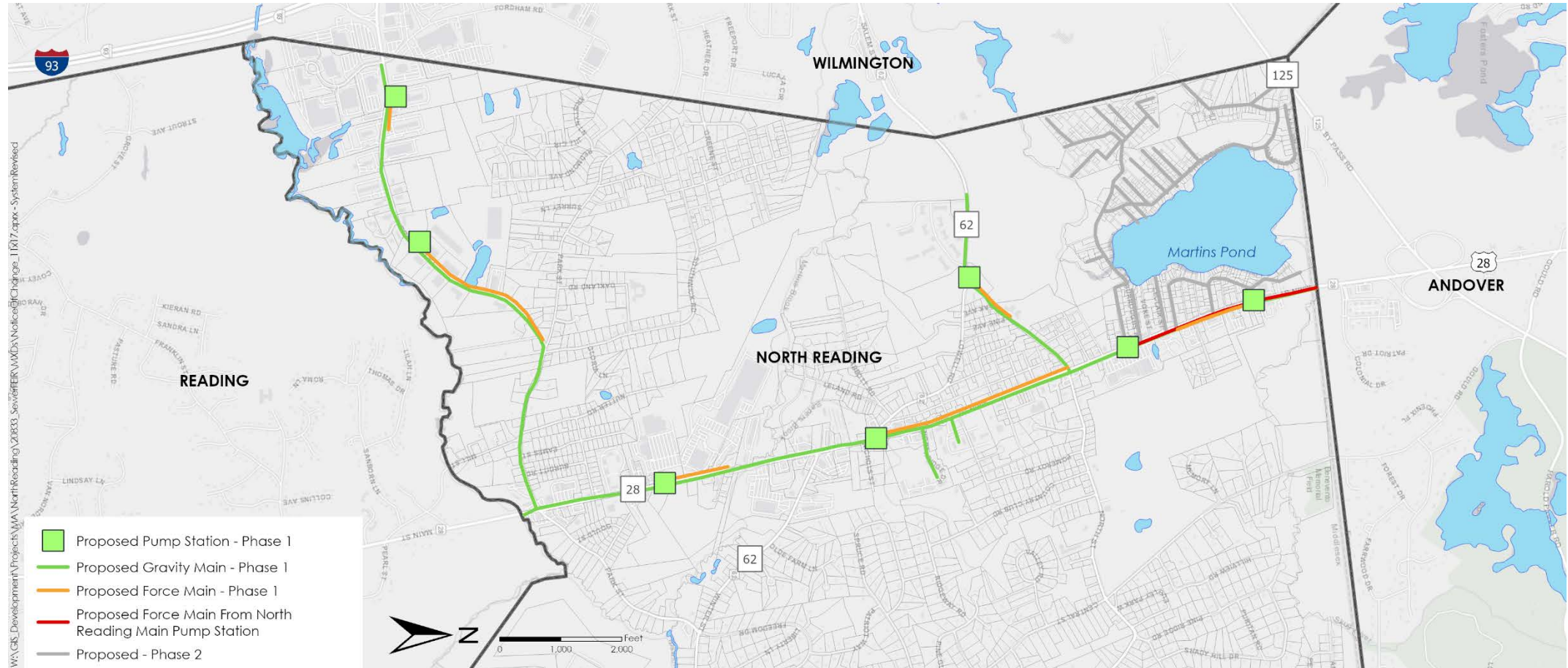
- A wastewater collection system will help promote public health and environmental protection by:
  - Improving surface and ground water quality (i.e., lakes, rivers, aquifer, wetlands)
  - Providing sustainable long-term solution for wastewater management

# Wastewater Planning Approved in October, 2021

- Over the last 12 months, the Town has been 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 also contracted with a consultant, 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

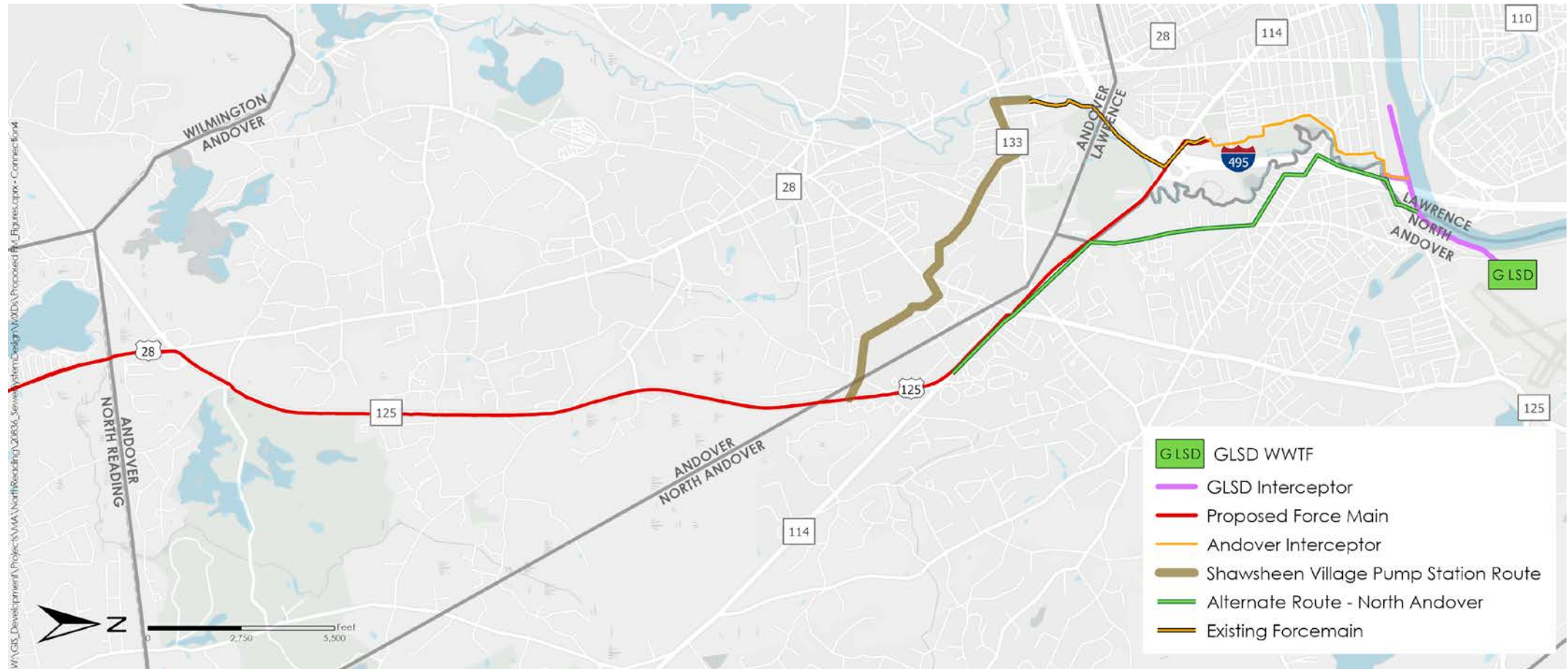




# How will wastewater be disposed of?

- 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 have 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.

# Probable Cost Estimate Adjustments for Design & Inflation

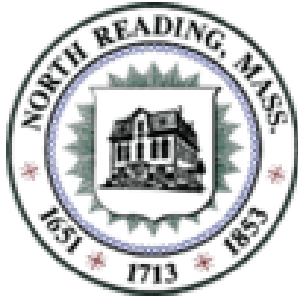
<b>Cost Table for PowerPoint</b>			
	<b>2021 Probable Costs (Mil.)</b>	<b>2022 Probable Costs (Mil.)</b>	<b>Change in Probable Costs (Mil.)</b>
Gravity System	\$34.47	\$24.72	(\$9.75)
Force Main System	\$34.93	\$38.67	\$3.74
Pump Stations	\$14.08	\$24.61	\$10.53
Inflation to Midpoint of Construction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





Would the Town be allowed to incur the debt associated with this project?

- Yes, the Town is allowed to incur the debt associated with this project.
- The Town's current debt limit is \$180,383,440 and, with state approval, the debt limit can be doubled 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.
- Having the 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).



# Town of North Reading Municipal Wastewater System Financial Assessment Study

## Community Workshops

Tuesday, October 11<sup>th</sup>

Wednesday, November 2<sup>nd</sup>

Tuesday, November 15<sup>th</sup>

## Businesses Workshop

Tuesday, October 25<sup>th</sup>

## Resident Workshop

Tuesday, October 18<sup>th</sup>



# Agenda

1

Background

2

Betterment Determination

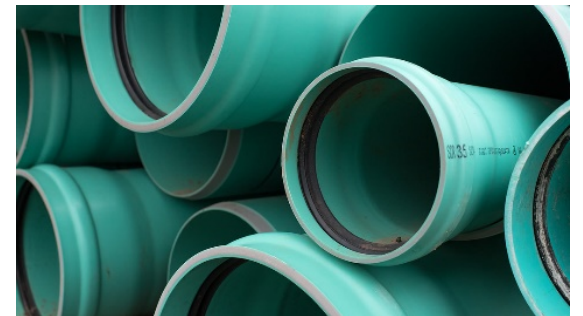
3

Return on Investment

# 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.





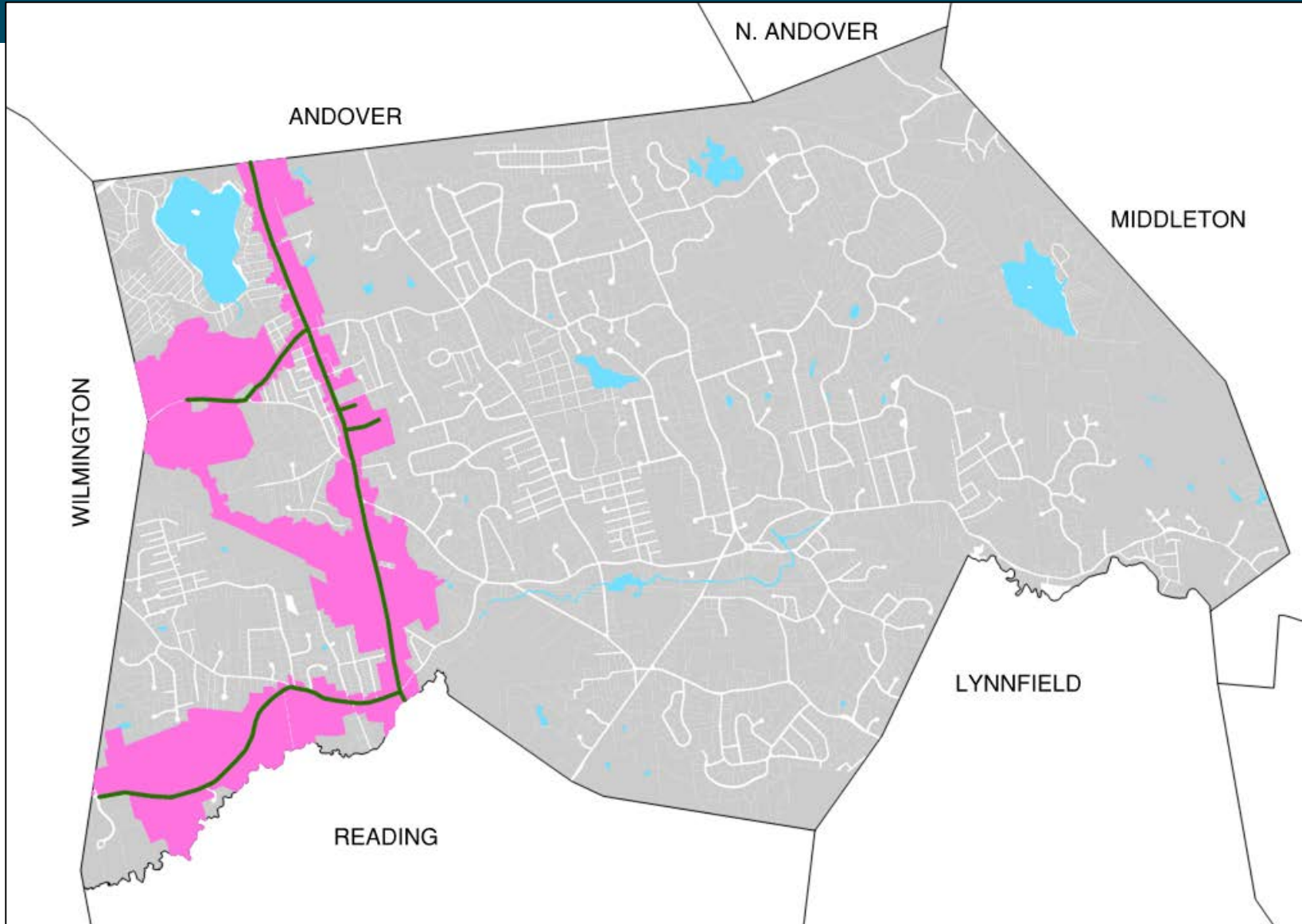
# How Does a Betterment Work?

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.

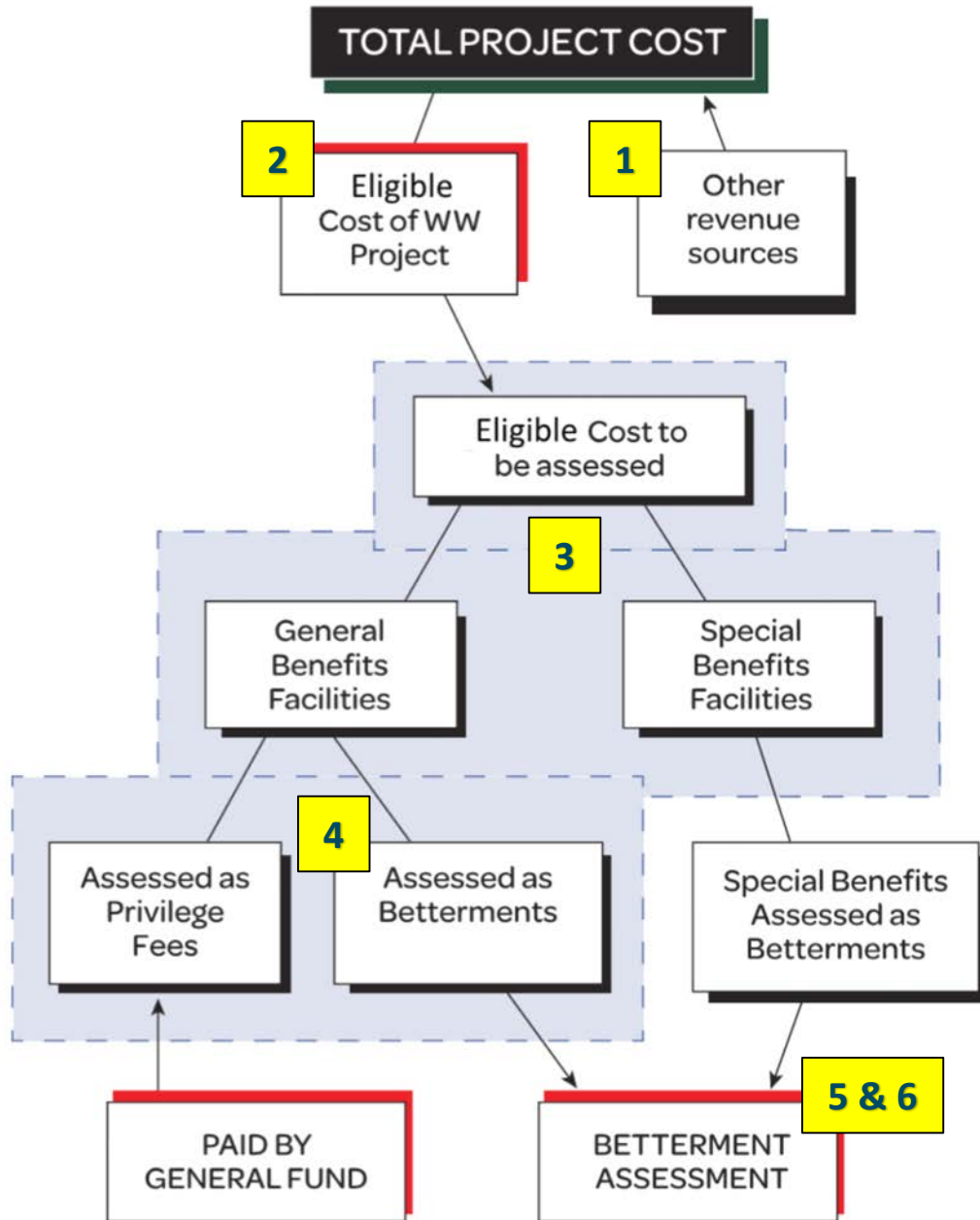
**The Betterment Vote must decide on the following issues:**

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



# Determining Equivalent Sewer Units

**Equivalent Sewer Units is based on estimated wastewater contributions**

Three methods were considered to determine wastewater contribution:

- 1. Water Use Method** – Based on historical water use
- 2. Title V Current Build Method** – Based on existing building footprint (commercial / industrial) and current use (e.g., restaurant, office space)
- 3. Title V Full Buildout Method** – Based on parcel size and flow projections under current zoning

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

# Water Use Method

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

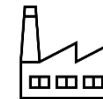
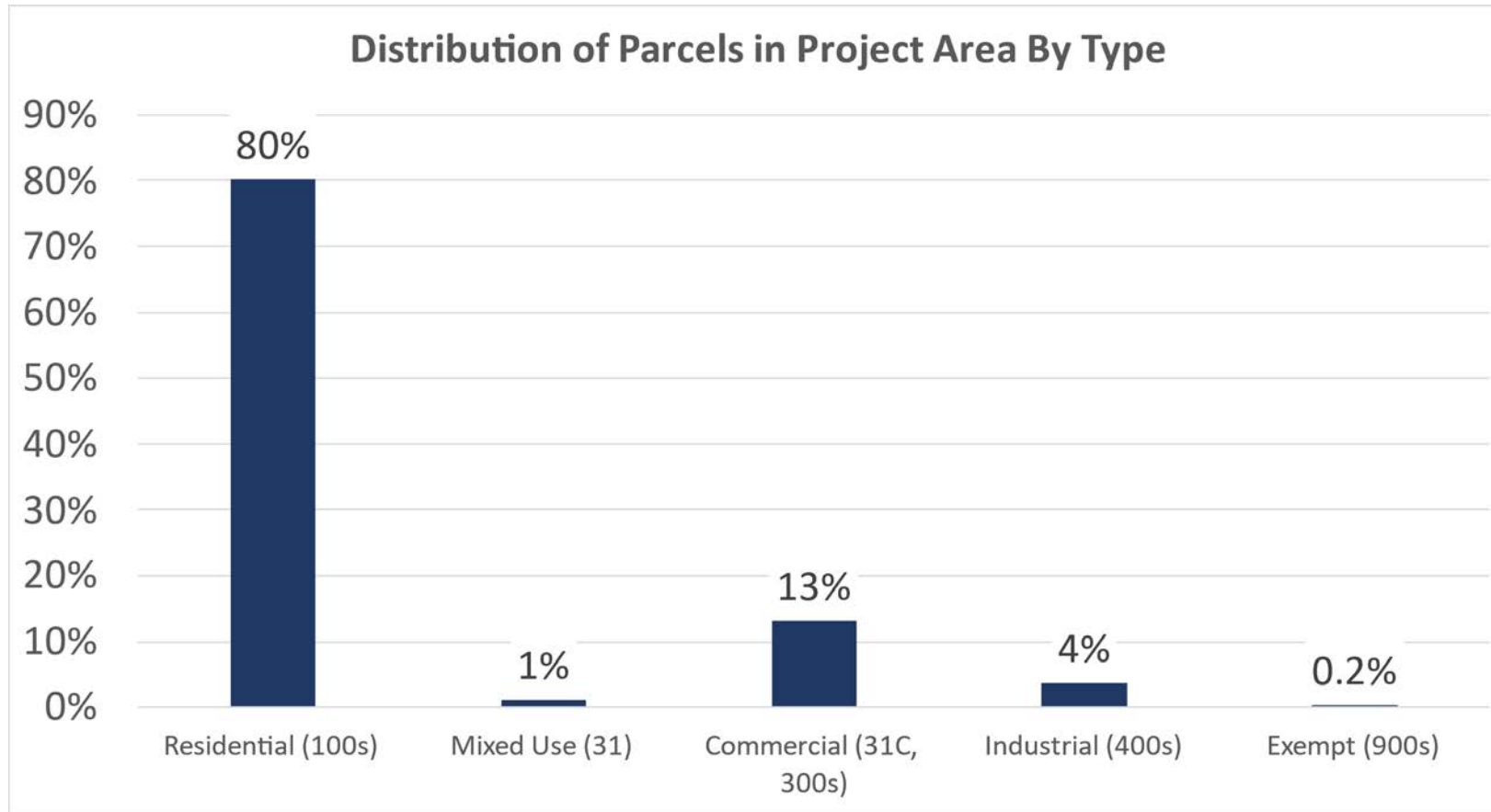
Example: A store using 390 gpd is assessed 3 sewer units.  
 $390 / 130 = 3$

## 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

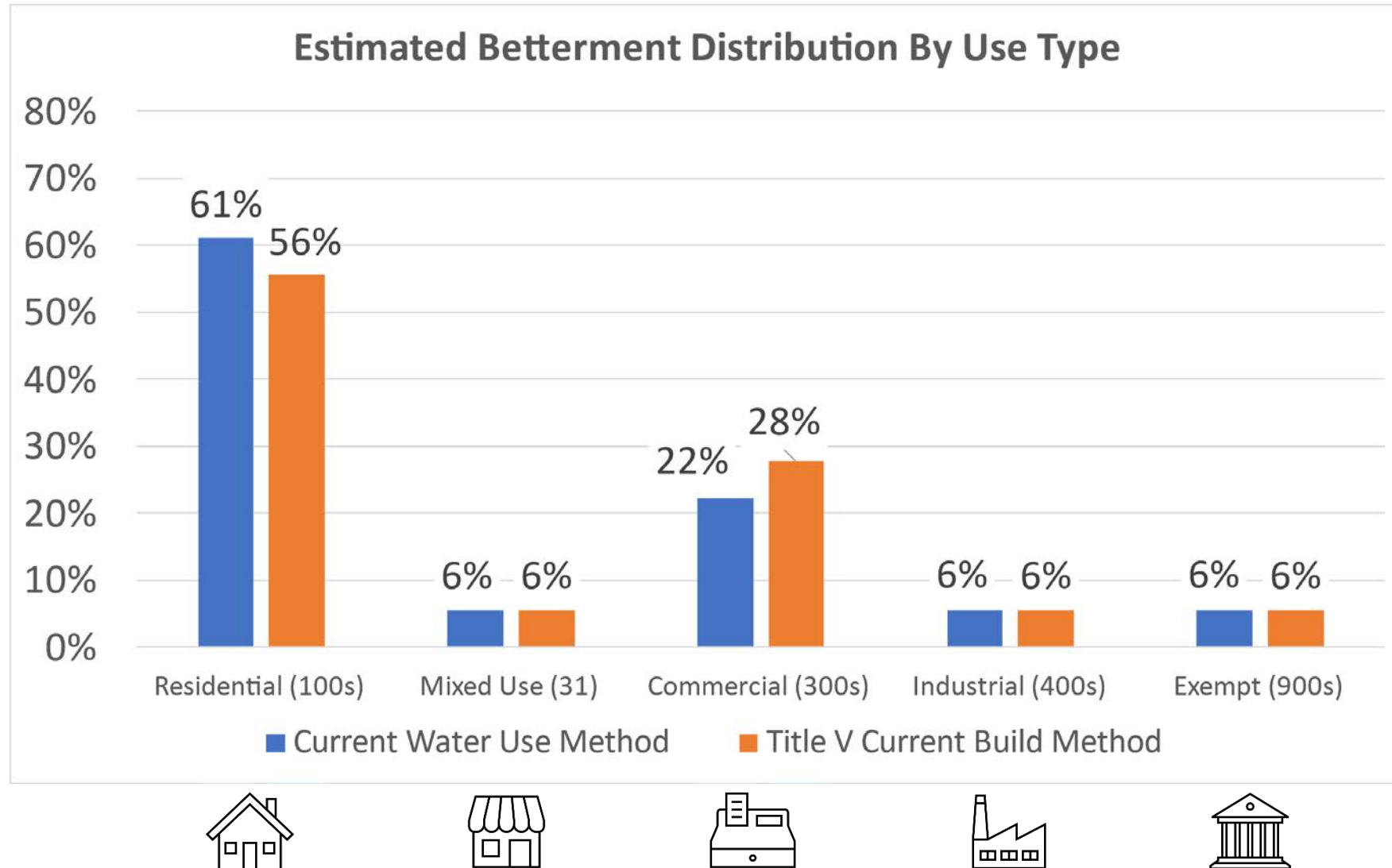
$$\text{Cost (\$) Per Sewer Unit} = \frac{\text{Total Betterment Assessment Cost}}{\text{Total Number of Sewer Units}}$$

# Distribution of Parcels Under Current Zoning








# Comparison of Betterment Distribution



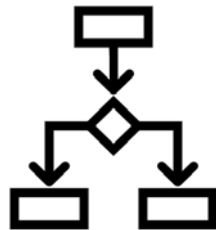
# Comparison of Betterment Distribution

Decision Point	Residential Betterment Impact 	Commercial Betterment Impact 	Industrial Betterment Impact 
Method Choice			
Water Use	61%	22%	6%
Title V Current Build	56%	28%	6%

# Betterment Determination Variables

## Town Decision Points

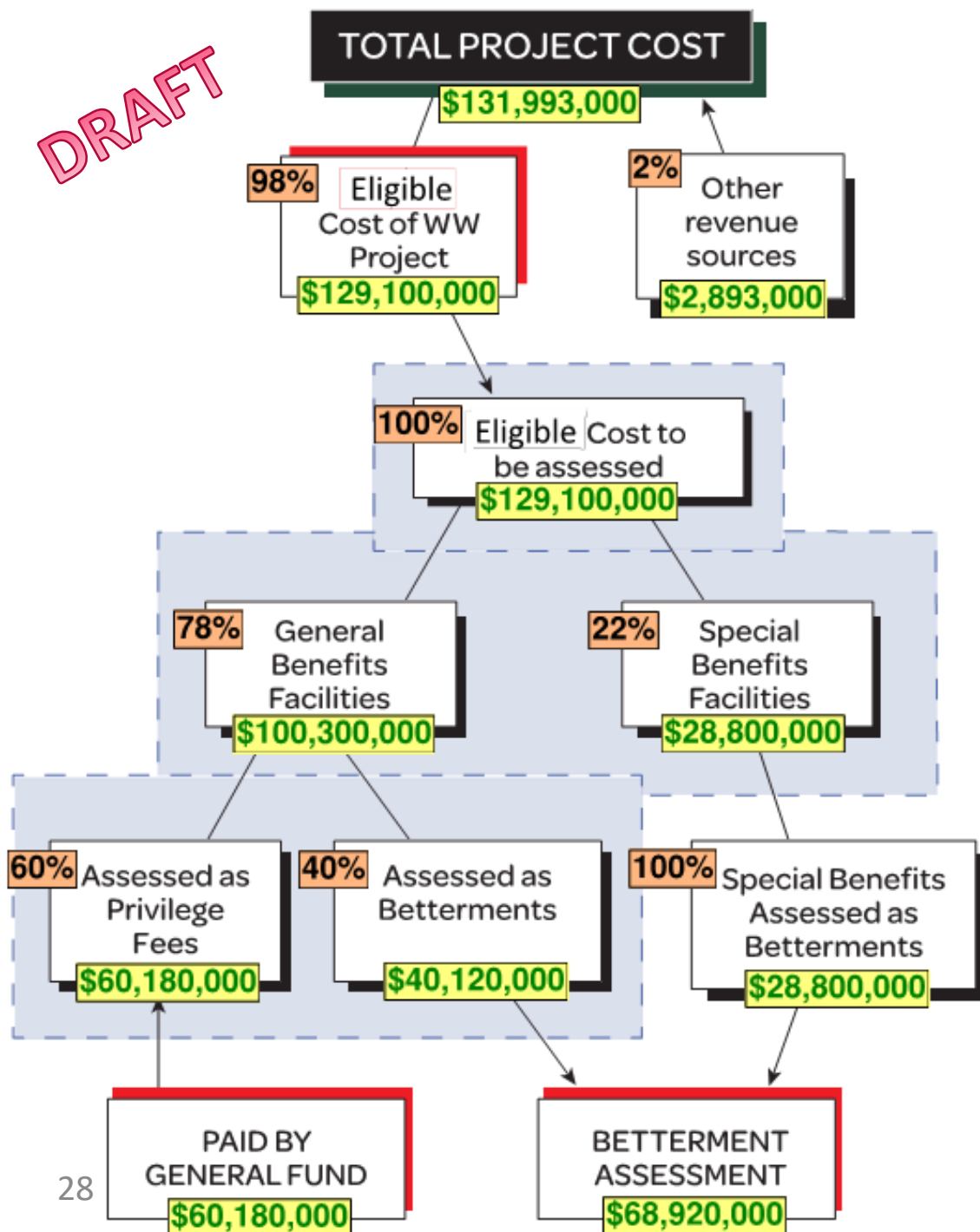
- Project Cost Allocations
- Betterment Methodology
- Loan Period and Interest Rate
- Parcels Assessed a Betterment



## 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

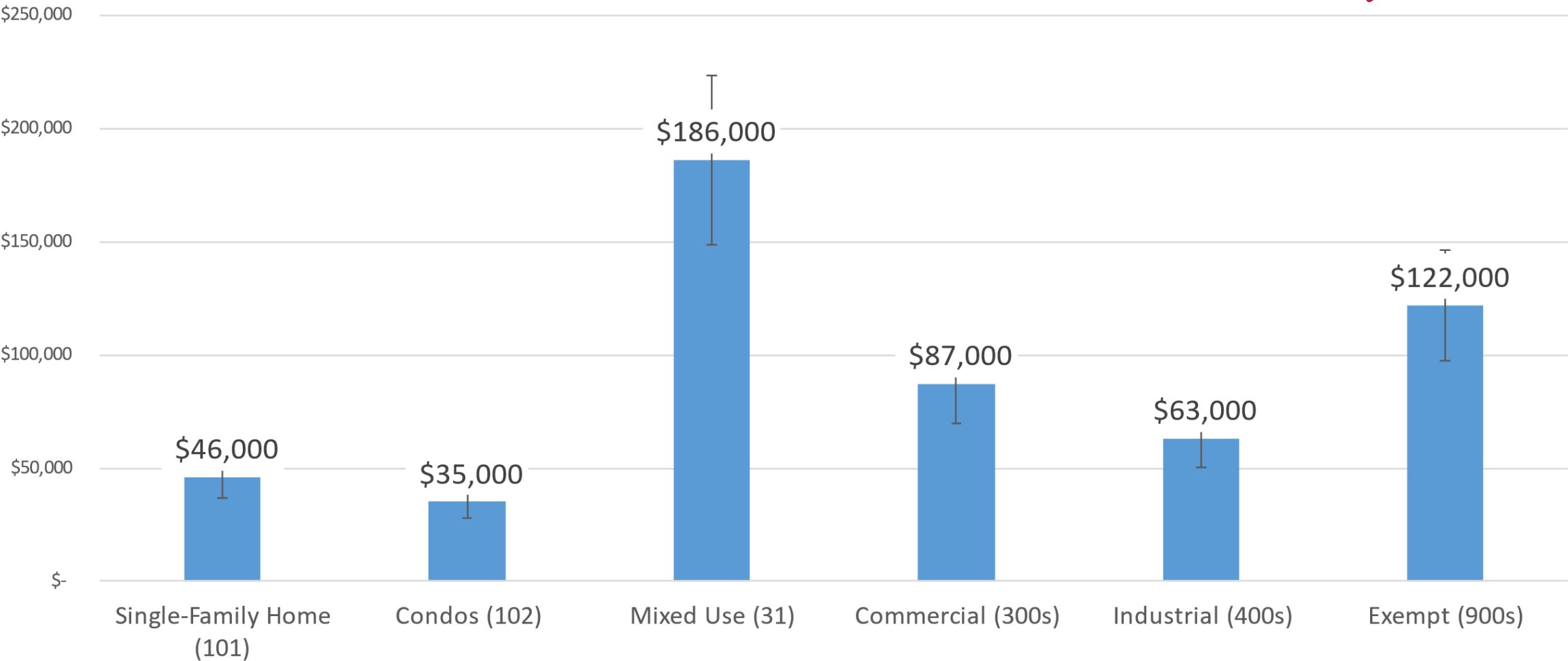
*\*Based on an estimated Total Project Cost of \$131,993,000. The final cost allocations will be determined by the Select Board after final construction costs are known. Values have been rounded.*

# 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**



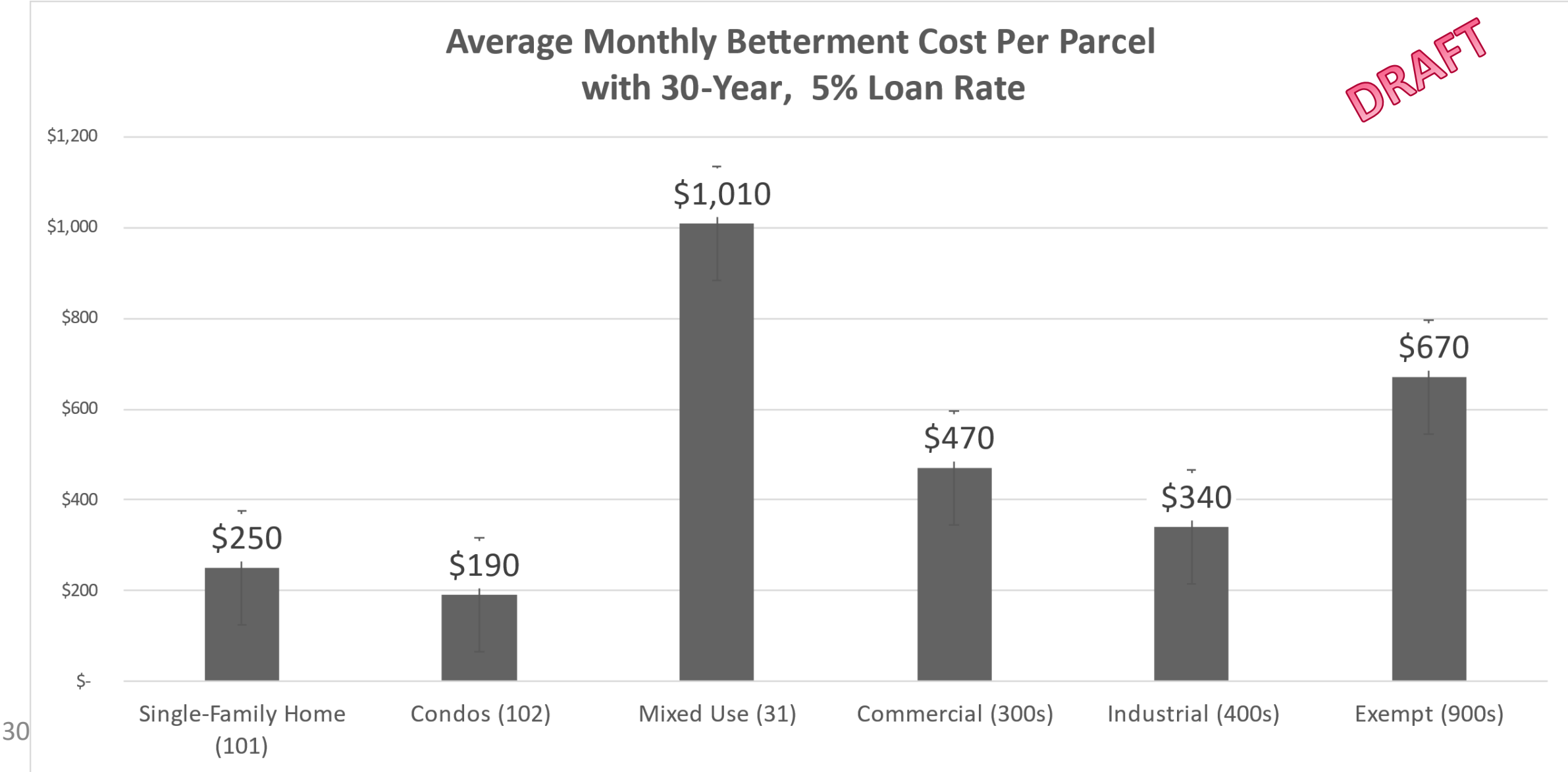


# Betterment Estimates: 30-Year Loan, 5% Interest Rate

*\*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

# Residential Opt-Out Debt Modeling

Modeled Under the Assumption  
of No Alternative Revenue  
towards Debt Services

Scenario A	Avg. Annual Res. Tax Increase
0% Residential Opt-Out	\$660

Scenario B	Avg. Annual Res. Tax Increase
25% Residential Opt-Out	\$760

Scenario C	Avg. Annual Res. Tax Increase
50% Residential Opt-Out	\$880

Scenario D	Avg. Annual Res. Tax Increase
100% Residential Opt-Out	\$1,080

# Estimated Single-Family Home Costs Under Opt-Out Scenarios

## Non-Sewered Residents

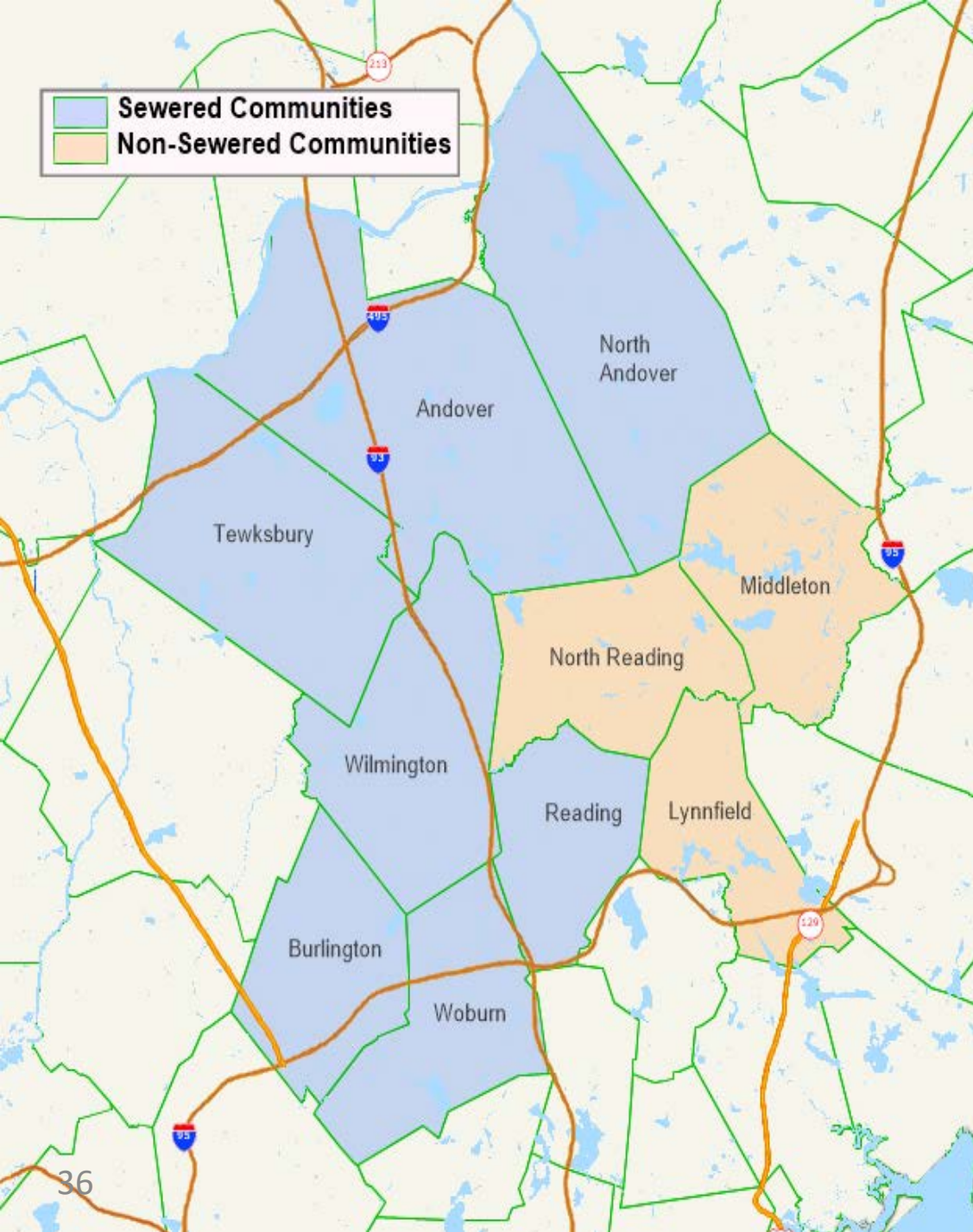
Percent Residential Opt-Out	Avg. Monthly Tax Increase	Total Annual Cost
0%	\$55	\$660
25%	\$63	\$760
50%	\$73	\$880
100%	\$90	\$1,080



# Estimated Single-Family Home Costs Under Opt-Out Scenarios

## Sewered Residents

Percent Residential Opt-Out	Avg. Monthly Tax Increase	Monthly Betterment Cost	Total Monthly Cost	Total Annual Cost
0%	\$55	\$250 (to opt-in)	\$305	\$3,660
25%	\$63	\$250	\$313	\$3,760
50%	\$73	\$250	\$323	\$3,880
100%	\$90	\$250	\$340	\$4,080



- 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 <sup>1</sup>	30 Year Total Debt Obligation <sup>2</sup>	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

38 (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 11<sup>th</sup>**
- Resident workshop, **Tuesday, October 18<sup>th</sup>**
- Business workshop, **Tuesday, October 25<sup>th</sup>**
- Community workshop, **Wednesday, November 2<sup>nd</sup>**
- Community workshop, **Tuesday, November 15<sup>th</sup>**



## Frequently Asked Questions

- 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 increase of \$660 for the average single family home.
- I live or own the property along the route. Beyond the betterment and property tax amounts, will there be any additional costs?
  - Yes. If you wish to connect, you would need to hire a contractor to connect your wastewater drain to the system at your property line and decommission your septic system. There will also be an annual expense associated with the disposal of your wastewater (a sewer bill), which the Town's engineers have researched and found is approximately 20% higher than the average water bill in the region.



## 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

- 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.
- 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 flow beyond what is currently needed to support development. 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

- Visit <https://www.northreadingma.gov/wastewater-sewer-information> or email [sewer@northreadingma.gov](mailto:sewer@northreadingma.gov) for more information.