



Town of

Orleans
Massachusetts

Orleans Business Forum Workshop No. 5

Water Quality and Wastewater Planning

March 8, 2017

Agenda

- ❖ **Introductions**
- ❖ **Summary of Objectives and Previous Meeting Discussions**
- ❖ **Review of New “Cost Allocation” Tools and Data**
- ❖ **Downtown Zoning Proposal**
- ❖ **Update on Design/Build/Operate Evaluation**
- ❖ **Next Steps**





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Massachusetts

Introductions

and

Summary of Objectives and
Previous Meeting Discussions



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Review of New “Cost Allocation” Tools, Options and Results

- a. Overview of Program Costs and Cost Allocation
- b. Financial Plan Development
- c. Scenario Development and Assumptions
- d. Key Issues and Consideration
- e. Adjustments to Address Potential Equity and Affordability Concerns
- f. Current Financial Planning Scenarios

Overview of Program Costs and Cost Allocation

Elements of the Program	Major Cost Components	Users
Collection, Treatment and Effluent Disposal	Capital	Sewered Areas
Non-Traditional Technologies	Annual Operation and Maintenance	Non-Traditional Technology Areas
Adaptive Management	Replacement	Septic Systems Only Areas (Retained)
	Monitoring	



Financial Plan Development

- ❖ **Developed Detailed Model with Functionality**
- ❖ **Developed Initial Scenarios and Average Costs per User Category using Total Number of Users/Owners per User Area**
- ❖ **Incorporated Implementation Phasing Program for Downtown Area and Meetinghouse Pond Area Systems**
- ❖ **Incorporated Parcel Level Water Use and Property Assessment Data (to Better Refine Rates for User Categories)**
- ❖ **Updated and Adjusted Project Costs**
- ❖ **Estimated Average and Parcel-specific Rates for User Categories**
- ❖ **Compared User Costs to EPA Affordability Benchmark (2% MHI) and 2010 Approved CWMP**



Scenario Development and Assumptions

❖ Produced Approximately 24 Scenarios

❖ Key Considerations

- Cost Allocation Across User Groups
- Direct and Indirect Benefit to the Users
- Reasonable “Affordability” using EPA Affordability Benchmark
- Contribution from Downtown Businesses
- Delivery Options Feasibility and Savings



Scenario Development and Assumptions (cont.)

Component Description	A	B	C	D	E	F	G	H	I
100% Capital Cost on Tax Rate	X	X	X	X	X	X	X		
100% O/M/R/R on User Charge	X	X	X	X	X	X	X	X	X
4% Conventional Financing	X	X							
20 Year Borrowing	X	X	X	X	X				
90% Grant/Loan Forgiveness		X							
2% SRF Financing			X						
0% SRF Financing				X	X	X	X	X	X
25% Grant/Loan Forgiveness					X	X	X		
10% Grant/Loan Forgiveness								X	X
30 Year Borrowing						X	X	X	X
D/B/O Savings							X	X	
Local Options Tax							X	X	X
Septage Revenue							X	X	X
One WWTF								X	X
Special Assessments								X	X



Key Issues and Consideration

- ❖ **User Fees for O&M&R Costs are Major Factor in Total Annual Rates:**
 - Non-Traditional O&M Costs are Higher than for Traditional Solutions
 - Monitoring Costs and Uncertainty of Performance are Key Factors for NT Areas
- ❖ **Meetinghouse Pond Area Annual Charges Higher than Downtown Area Due to Fewer Users and has a Separate WWTF**
- ❖ **Overall Factor: Construction of Collection, Treatment and Disposal Systems in One 20-year to 30-year Program is Key Difference Compared to Systems Built Over Several Generations**
 - Program Phasing is Imperative



Adjustments to Address Potential Equity and Affordability Concerns

- ❖ **Finalized Phasing of all Program Components**
- ❖ **Assigned Special Assessment / Betterments for Capital Costs to Various User Groups**
- ❖ **Tested Different Options for Percentage of Specials Assessments vs General Fund**
- ❖ **Evaluated Effects of Different Percentage Split of Assessments Between Residential and Non-Residential Assessments**



Current Financial Planning Scenarios

- 1. Base Case (Capital Costs on 100% Tax Rate)**
- 2. Majority of Capital Cost via Special Assessments to Owners in Sewered Areas**
- 3. Split Residential and Non-Residential Assessments in Sewered Areas**



Current Financial Planning Scenarios (cont.)

“Constant” Scenario Assumptions for Current Scenarios:

- ❖ **30-Year SRF Financing at 0%**
- ❖ **10% State Grant or Debt-Forgiveness**
- ❖ **Additional 5% Local Tax Option Revenue**
- ❖ **15% Contingency on Traditional and Non-Traditional Capital/Replacement Costs**
- ❖ **Regional Septage Revenue**
- ❖ **No DBO Delivery Method**



Current Financial Planning Scenarios (cont.)

❖ Majority Special Assessment

- Majority of Capital Costs on Assessments (as opposed to General Fund)

❖ Split Residential and Non-Residential Assessments in Sewered Areas

- Reduced Assessment on Residential Properties Because Limited Opportunity for Increased Property Value as Opposed to Non-Residential Properties Unless Change in Use

❖ Non-Traditional Technologies

- All on Tax Rate Because no Direct Increase in Property Value from NT Systems
- Town-Wide Water Quality Benefit

❖ Existing On-Site Systems

- Property Owners Maintain Costs for Existing On-Site Systems



Current Financial Planning Scenarios (cont.)

Cost Allocation

Scenario Description	Tax Rate	Special Assessment	
Base Case	100%	---	---
Sewered Areas: Majority Special Assessment	20%	---	80%
Sewered Areas: Split Res / Non-Res Private Burden			
Downtown Area	20%	80%	30% - Res 50% - Non-Res
Meetinghouse Pond Area	70%	---	30%
Non-Traditional Technologies	100%	---	---
Retain Existing On-Site Systems	---	---	100%



Reducing Costs: Two WWTFs vs One WWTF Scenario

Component	Two WWTFs		One WWTF	
	Downtown Area	Meetinghouse Pond Area	Downtown Area	Meetinghouse Pond Area
Collection	\$21.76 M	\$21.25 M	\$22.80 M	\$19.63 M
WWTF	\$16.81 M	\$8.00 M	\$23.02 M	---
Effluent Disposal	\$2.70 M	\$1.19 M	\$3.89 M	---

**Estimated Present Worth Savings (one WWTF vs two WWTFs):
\$4,551,600 at 3% Interest Rate Over 20 years**

Other Issues:

- Proximity of Meetinghouse Pond Area to the Downtown Area
- Siting New WWTF in East Orleans may be Problematic



Reducing Costs: Two WWTFs vs One WWTF Scenario (cont.) Cost Allocation

Scenario	Two WWTFs		One WWTF	
	Tax Rate	Special Assessment	Tax Rate	Special Assessment
Base Case	100%	---	100%	---
Sewered Areas: Majority Special Assessment	20%	80%	20%	80%
Sewered Areas: Split Res / Non-Res Private Burden				
Downtown Area	20%	30% - Res 50% - Non-Res	20%	30% - Res 50% - Non-Res
Meetinghouse Pond Area	70%	30%		
Non-Traditional Technologies	100%	---	100%	---
Existing On-Site Systems	---	100%	---	100%

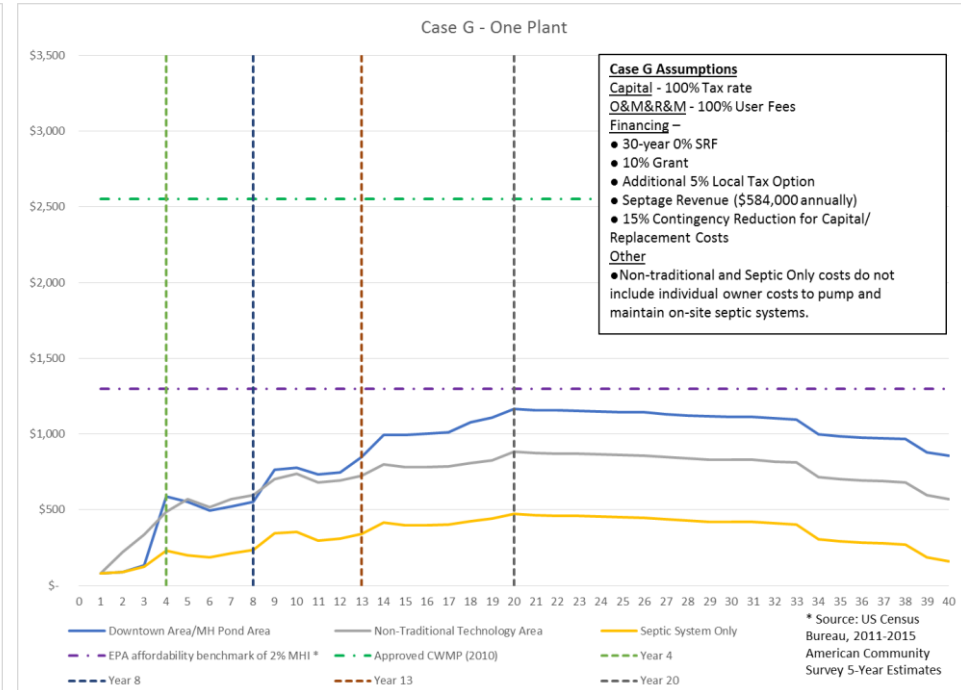
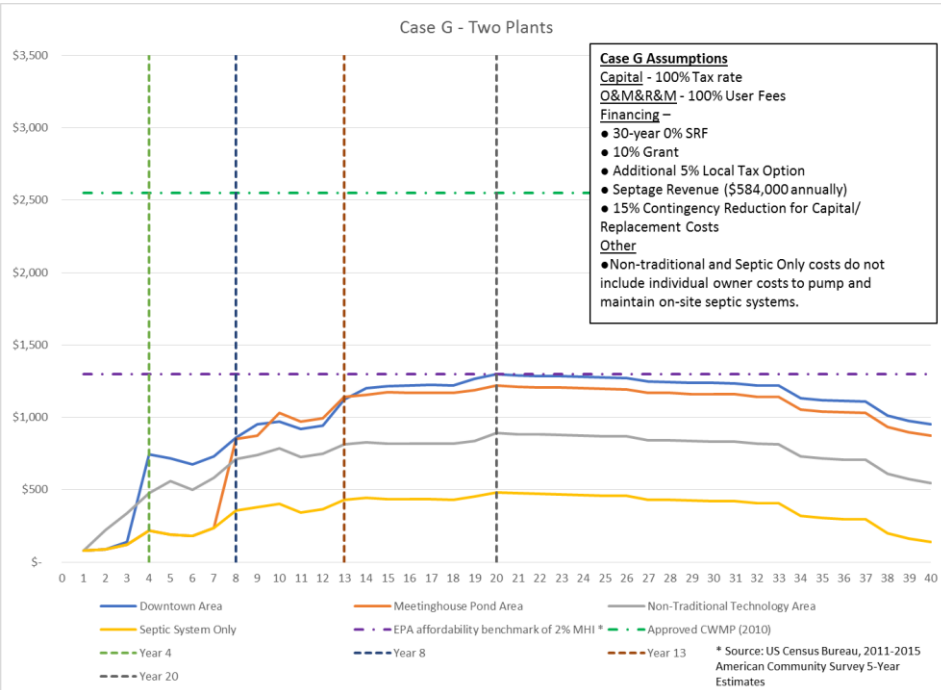


Case G Assumptions

- ❖ **Capital - 100% Tax rate**
- ❖ **O&M&R&M - 100% User Fees**
- ❖ **Financing**
 - 30-year 0% SRF
 - 10% Grant
 - Additional 5% Local Tax Option
 - Septage Revenue (\$584,000 annually)
 - 15% Contingency Reduction for Capital/ Replacement Costs
- ❖ **No DBO Delivery Method**
- ❖ **Non-traditional and Septic Only Costs Do Not Include Individual Owner Costs to Pump and Maintain On-site Septic Systems**



Case G – Two WWTF vs. One WWTF



Case H Assumptions – Two Plants

- ❖ **Capital – Downtown WWTF and Collection System - 80% Downtown Area Special Assessment**
- ❖ **Meetinghouse Pond WWTF and Collection System - 80% MHP Area Special Assessment**
- ❖ **Effluent Disposal and NT - 100% Tax rate**
- ❖ **O&M&R&M - 100% User Fees**
- ❖ **Financing**
 - 30-year 0% SRF
 - 10% Grant
 - Additional 5% Local Tax Option
 - Septage Revenue (\$584,000 annually)
 - 15% Contingency Reduction for Capital/ Replacement Costs
- ❖ **No DBO Delivery Method**
- ❖ **Non-traditional and Septic Only Costs Do Not Include Individual Owner Costs to Pump and Maintain On-site Septic Systems**

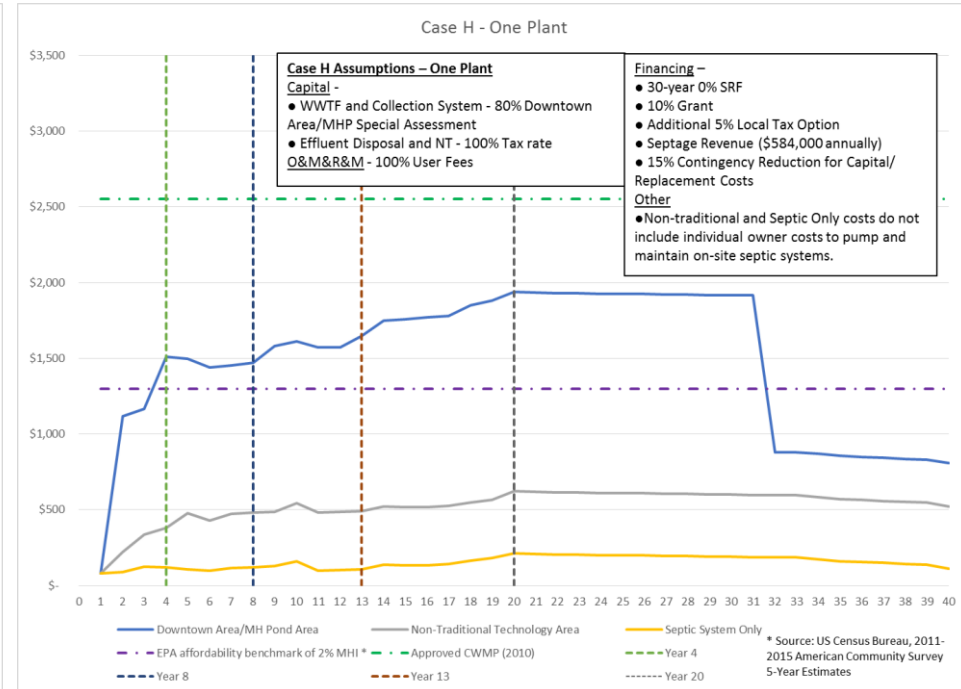
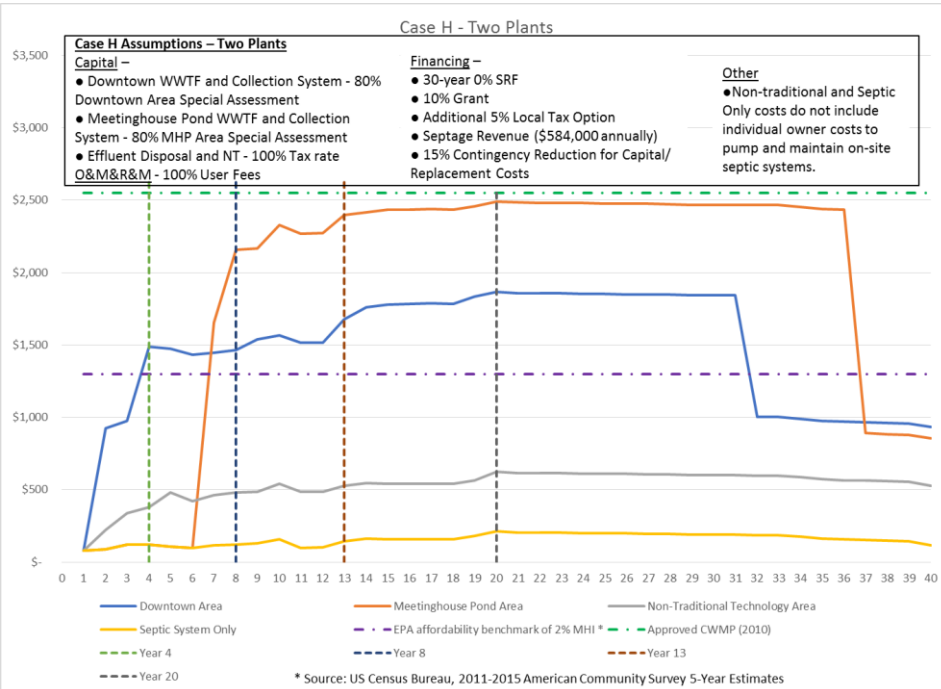


Case H Assumptions – One Plant

- ❖ **Capital - WWTF and Collection System - 80% Downtown Area/MHP Special Assessment**
- ❖ **Effluent Disposal and NT - 100% Tax rate**
- ❖ **O&M&R&M - 100% User Fees**
- ❖ **Financing –**
 - 30-year 0% SRF
 - 10% Grant
 - Additional 5% Local Tax Option
 - Septage Revenue (\$584,000 annually)
 - 15% Contingency Reduction for Capital/ Replacement Costs
- ❖ **No DBO Delivery Method**
- ❖ **Non-traditional and Septic Only Costs Do Not Include Individual Owner Costs to Pump and Maintain On-site Septic Systems**



Case H – Two WWTFs vs. One WWTF



Case I Assumptions – Two Plants

- ❖ **Capital – Downtown WWTF and Collection System – 30% Downtown Residential Special Assessment, 50% Downtown Non-residential Special Assessment, 20% Tax Rate**
- ❖ **Meetinghouse Pond WWTF and Collection System – 30% MHP Special Assessment, 70% Tax Rate**
- ❖ **Effluent Disposal and NT - 100% Tax rate**
- ❖ **O&M&R&M - 100% User Fees**
- ❖ **Financing**
 - 30-year 0% SRF
 - 10% Grant
 - Additional 5% Local Tax Option
 - Septage Revenue (\$584,000 annually)
 - 15% Contingency Reduction for Capital/ Replacement Costs
- ❖ **No DBO Delivery Method**
- ❖ **Non-traditional and Septic Only Costs Do Not Include Individual Owner Costs to Pump and Maintain On-site Septic Systems**

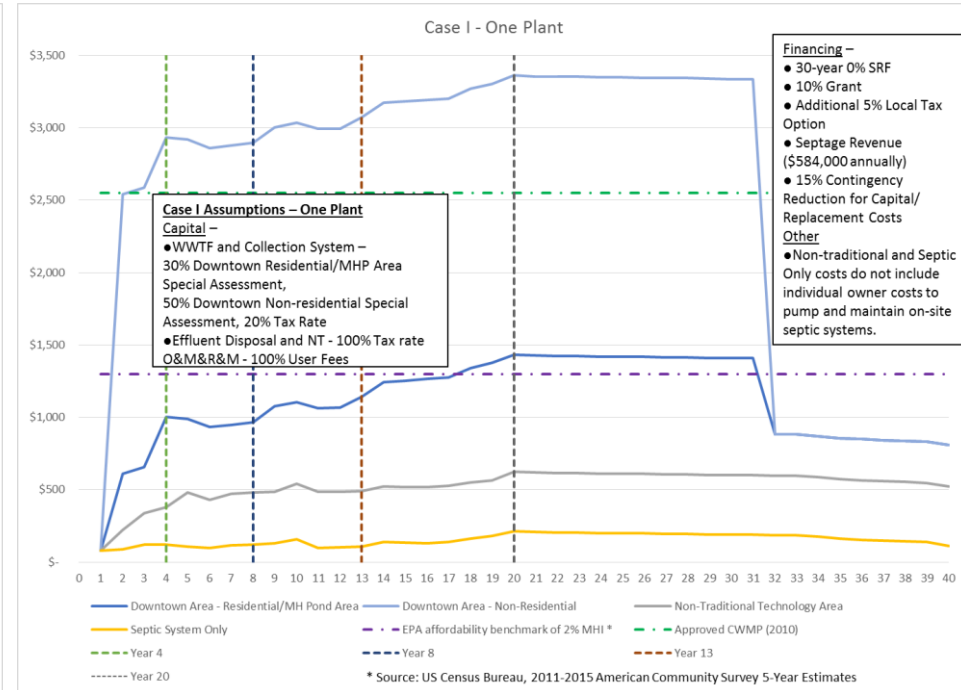
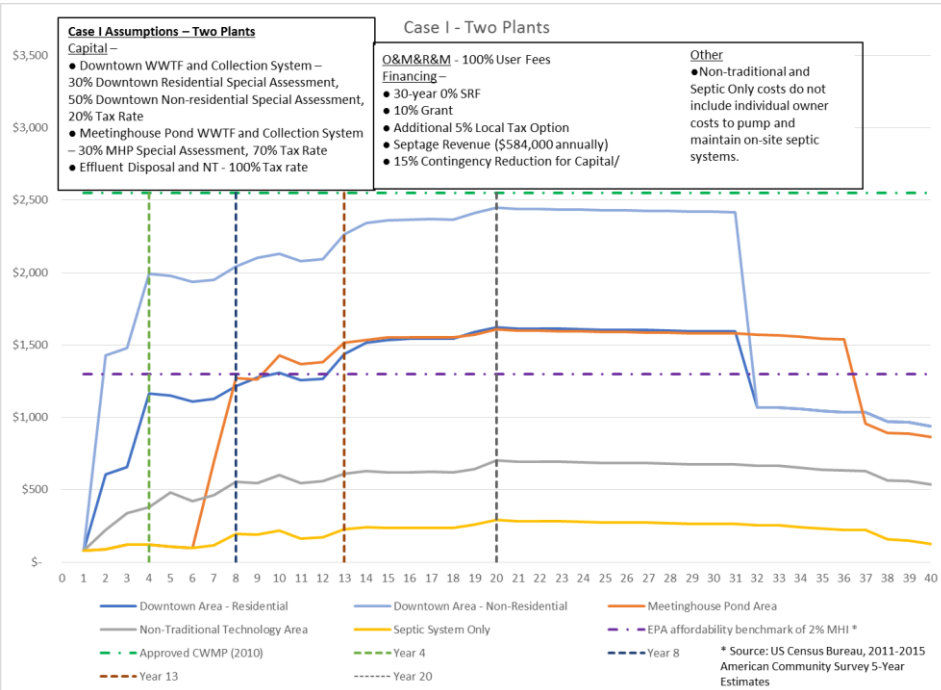


Case I Assumptions – One Plant

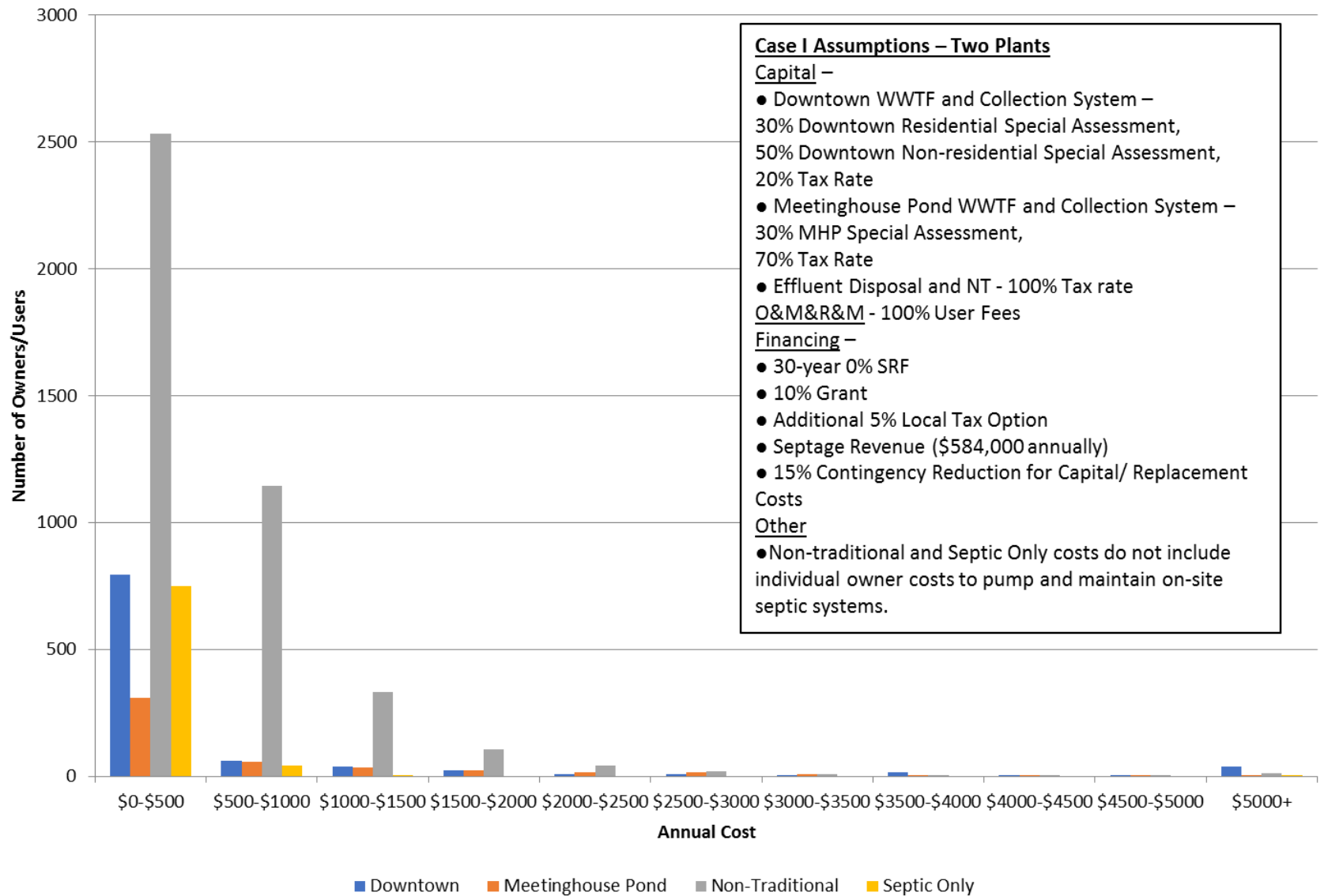
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- ❖ **Effluent Disposal and NT - 100% Tax rate**
- ❖ **O&M&R&M - 100% User Fees**
- ❖ **Financing**
 - 30-year 0% SRF
 - 10% Grant
 - Additional 5% Local Tax Option
 - Septage Revenue (\$584,000 annually)
 - 15% Contingency Reduction for Capital/ Replacement Costs
- ❖ **No DBO Delivery Method**
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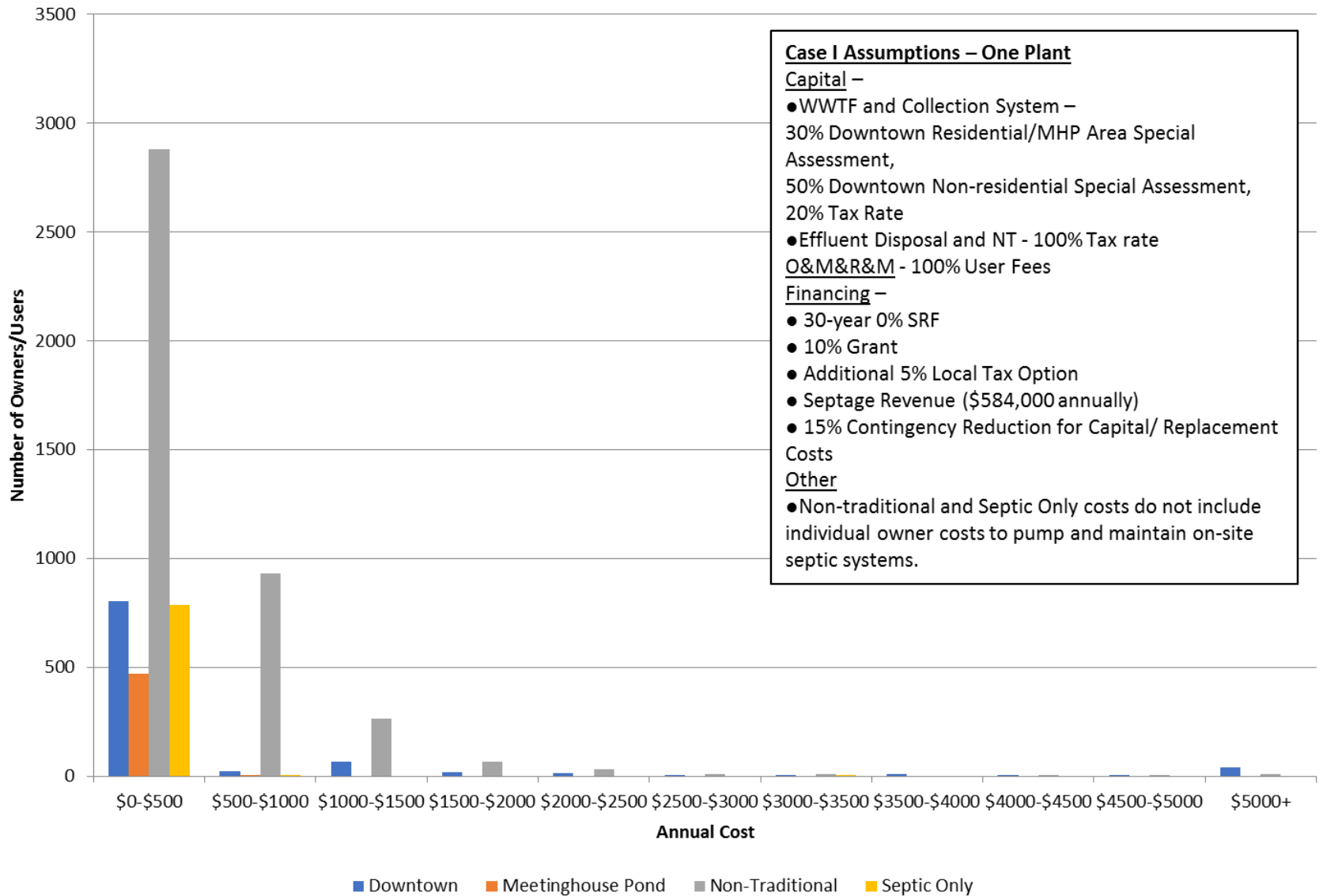
Case I – Two WWTFs vs. One WWTF



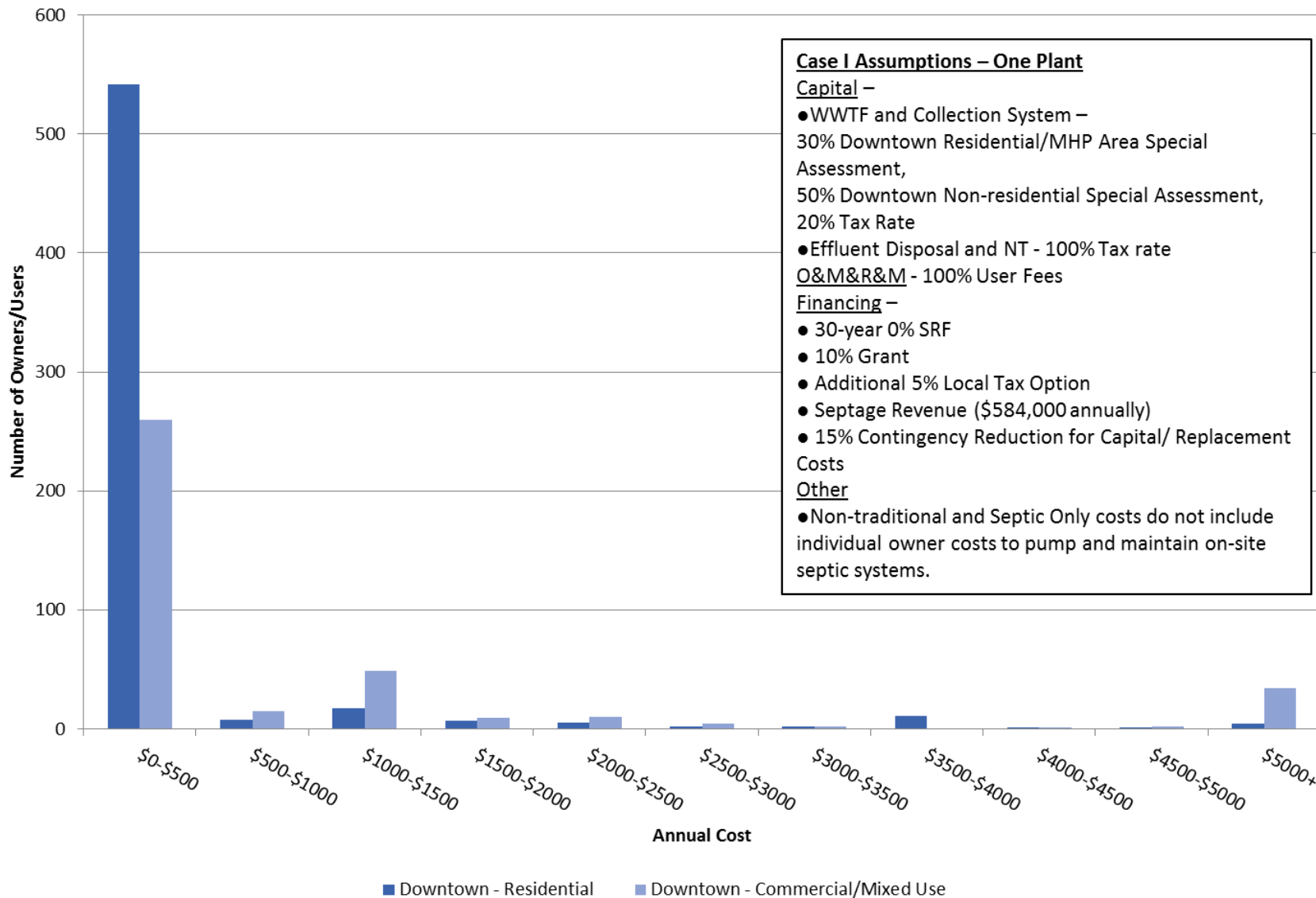
Case I - Two Plants - Year 8 - Annual Cost



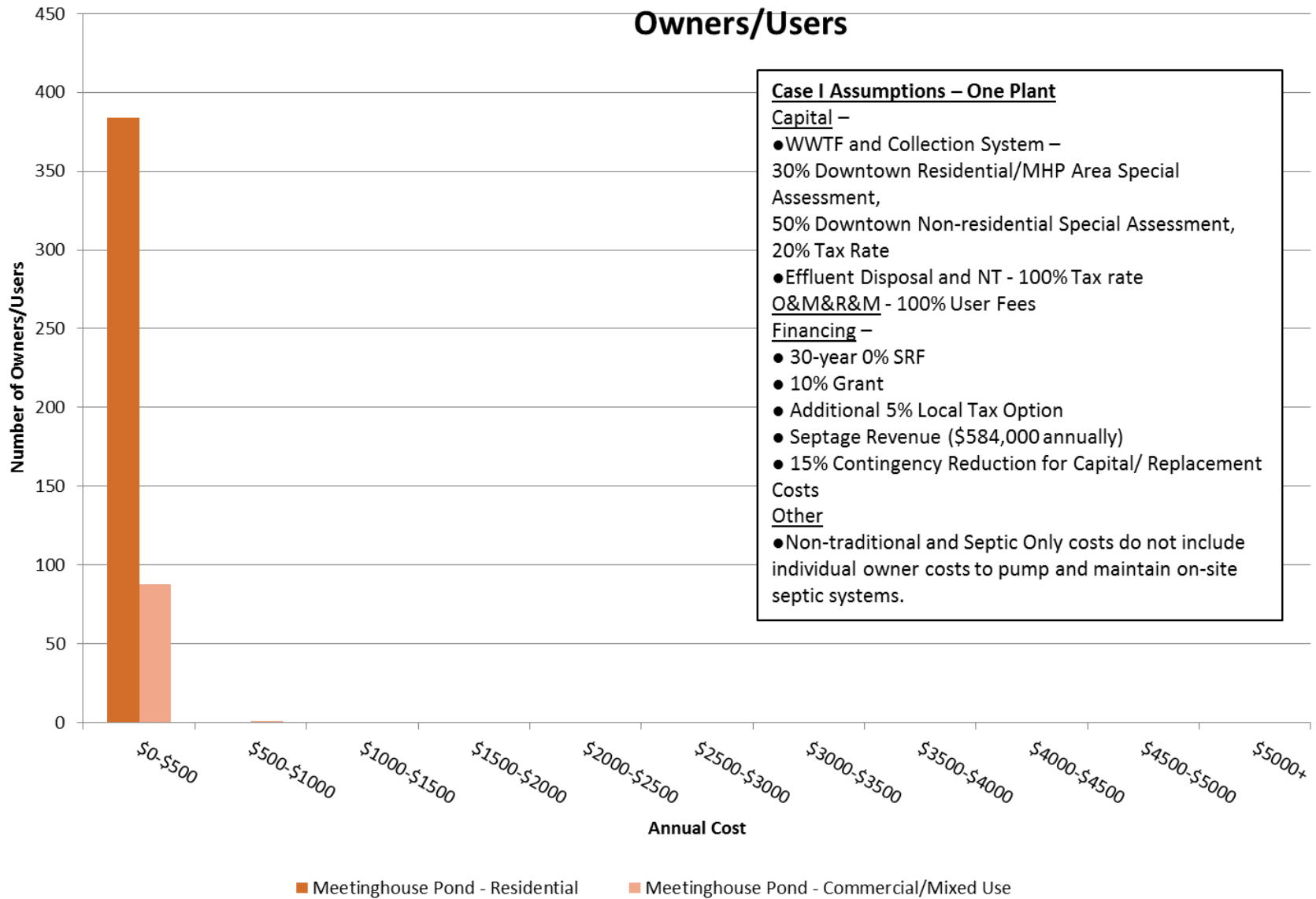
Case I - One Plant - Year 8 - Annual Cost



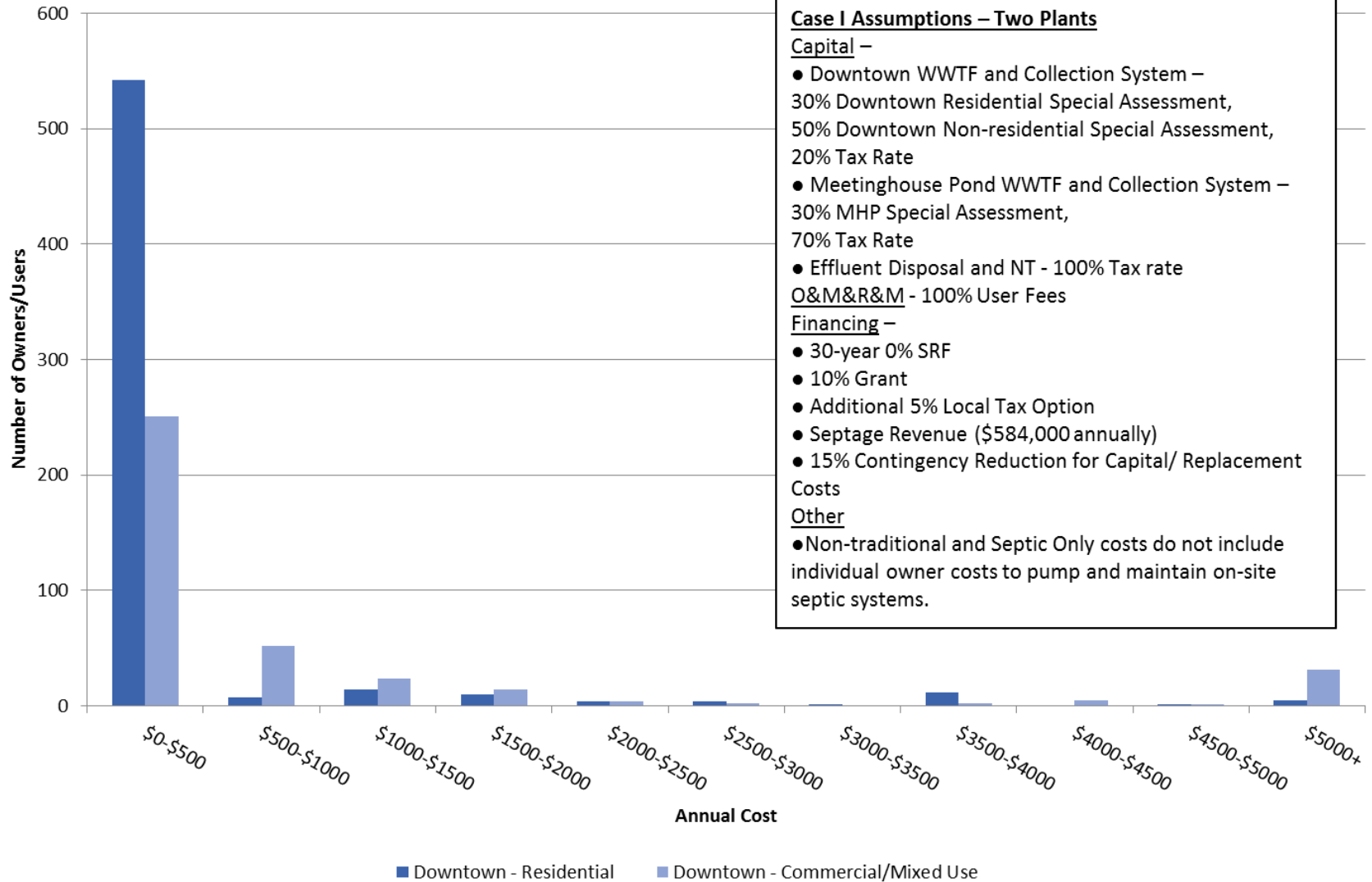
Case I - One Plant - Year 8 - Annual Cost - Downtown Area Owners/Users



Case I - One Plant - Year 8 - Annual Cost - Meetinghouse Pond Owners/Users



Case I - Two Plants - Year 8 - Annual Cost - Downtown Area Owners/Users



Case I Assumptions – Two Plants

Capital –

- Downtown WWTF and Collection System – 30% Downtown Residential Special Assessment, 50% Downtown Non-residential Special Assessment, 20% Tax Rate
- Meetinghouse Pond WWTF and Collection System – 30% MHP Special Assessment, 70% Tax Rate
- Effluent Disposal and NT - 100% Tax rate

O&M&R&M - 100% User Fees

Financing –

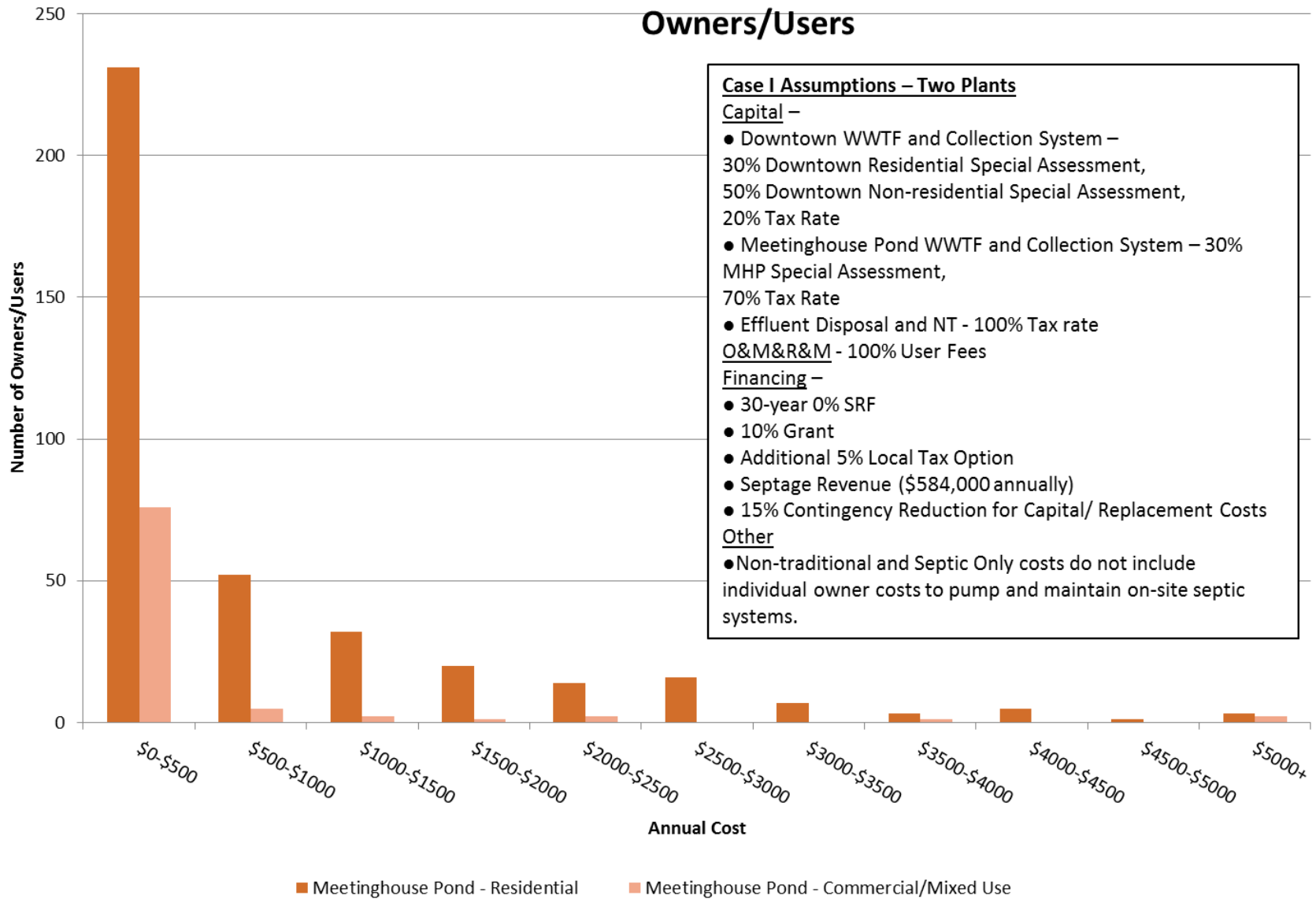
- 30-year 0% SRF
- 10% Grant
- Additional 5% Local Tax Option
- Septage Revenue (\$584,000 annually)
- 15% Contingency Reduction for Capital/ Replacement Costs

Other

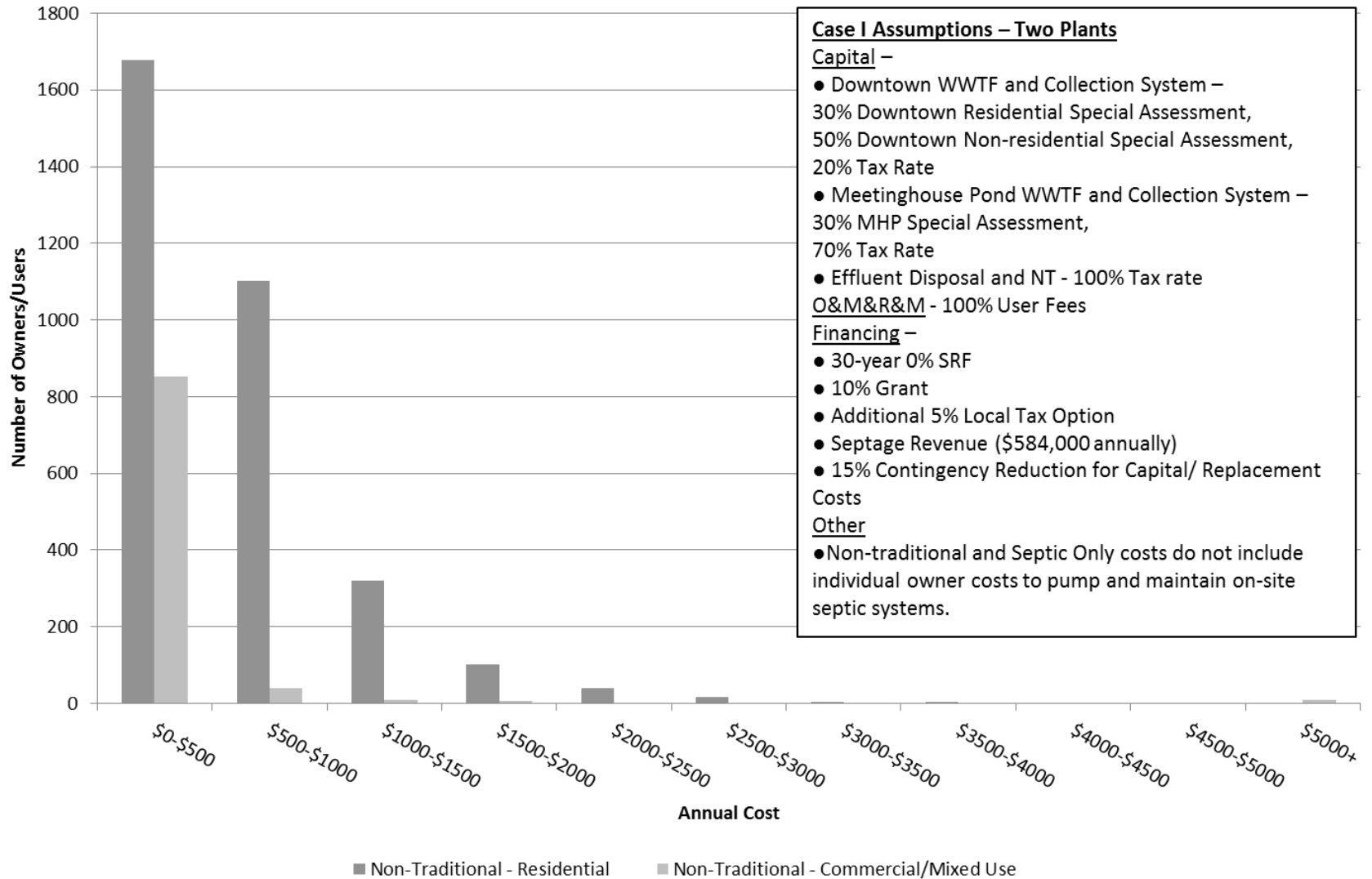
- Non-traditional and Septic Only costs do not include individual owner costs to pump and maintain on-site septic systems.



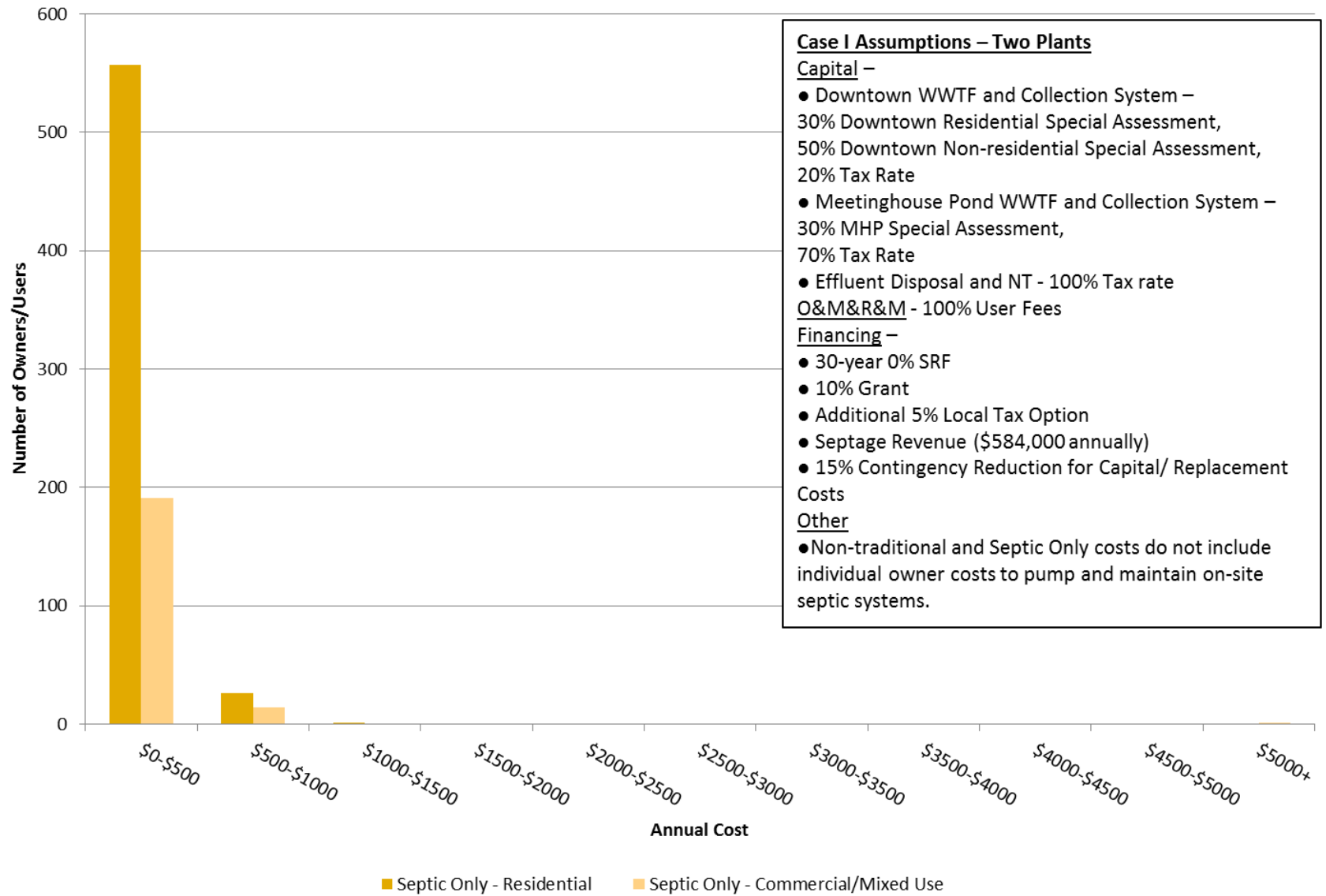
Case I - Two Plants - Year 8 - Annual Cost - Meetinghouse Pond Owners/Users



Case I - Two Plants - Year 8 - Annual Cost - Non-Traditional Area Owners/Users



Case I - Two Plants - Year 8 - Annual Cost - Septic Only Owners/Users



Case I Assumptions – Two Plants

Capital –

- Downtown WWTF and Collection System – 30% Downtown Residential Special Assessment, 50% Downtown Non-residential Special Assessment, 20% Tax Rate
- Meetinghouse Pond WWTF and Collection System – 30% MHP Special Assessment, 70% Tax Rate
- Effluent Disposal and NT - 100% Tax rate

O&M&R&M - 100% User Fees

Financing –

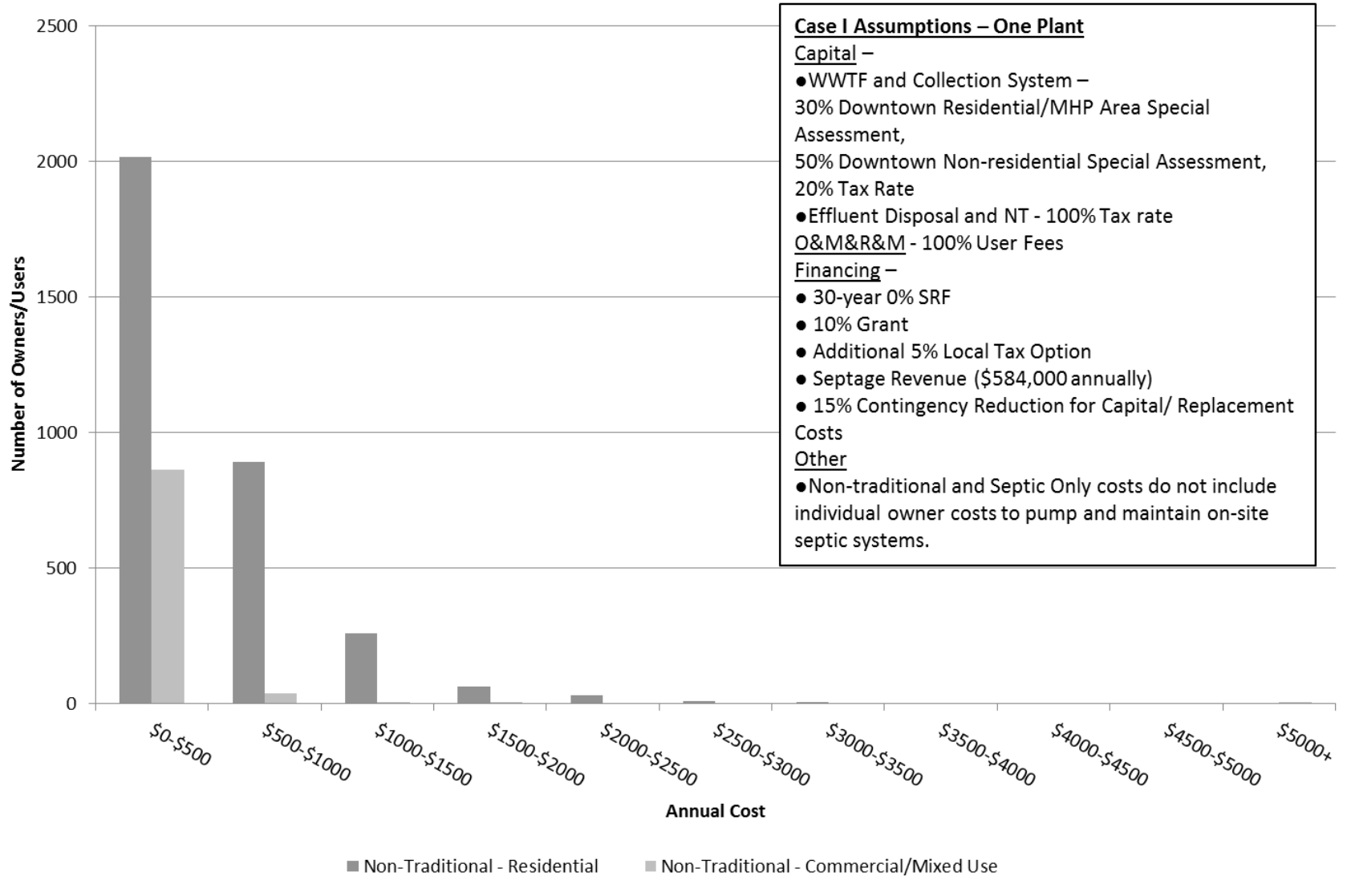
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Other

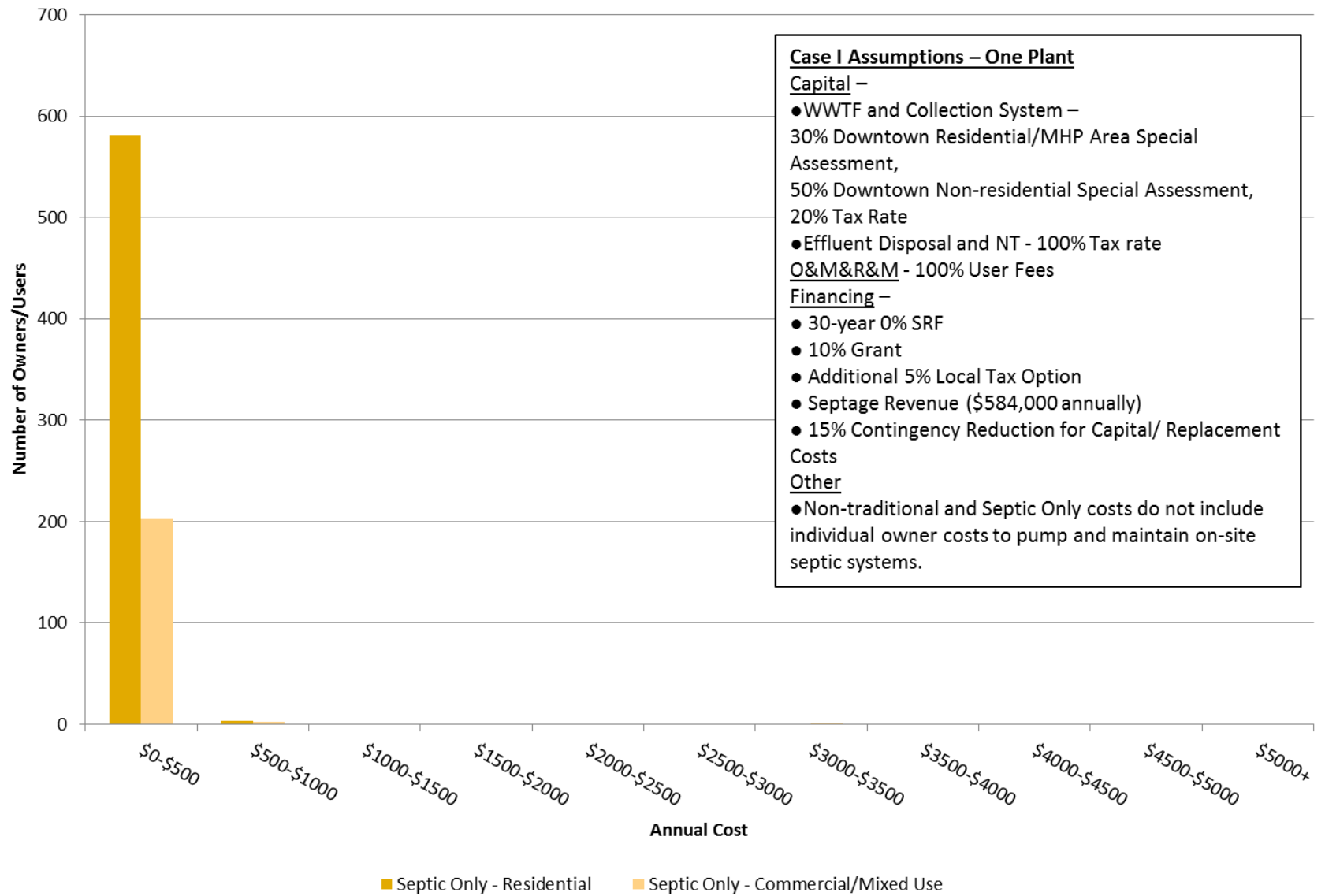
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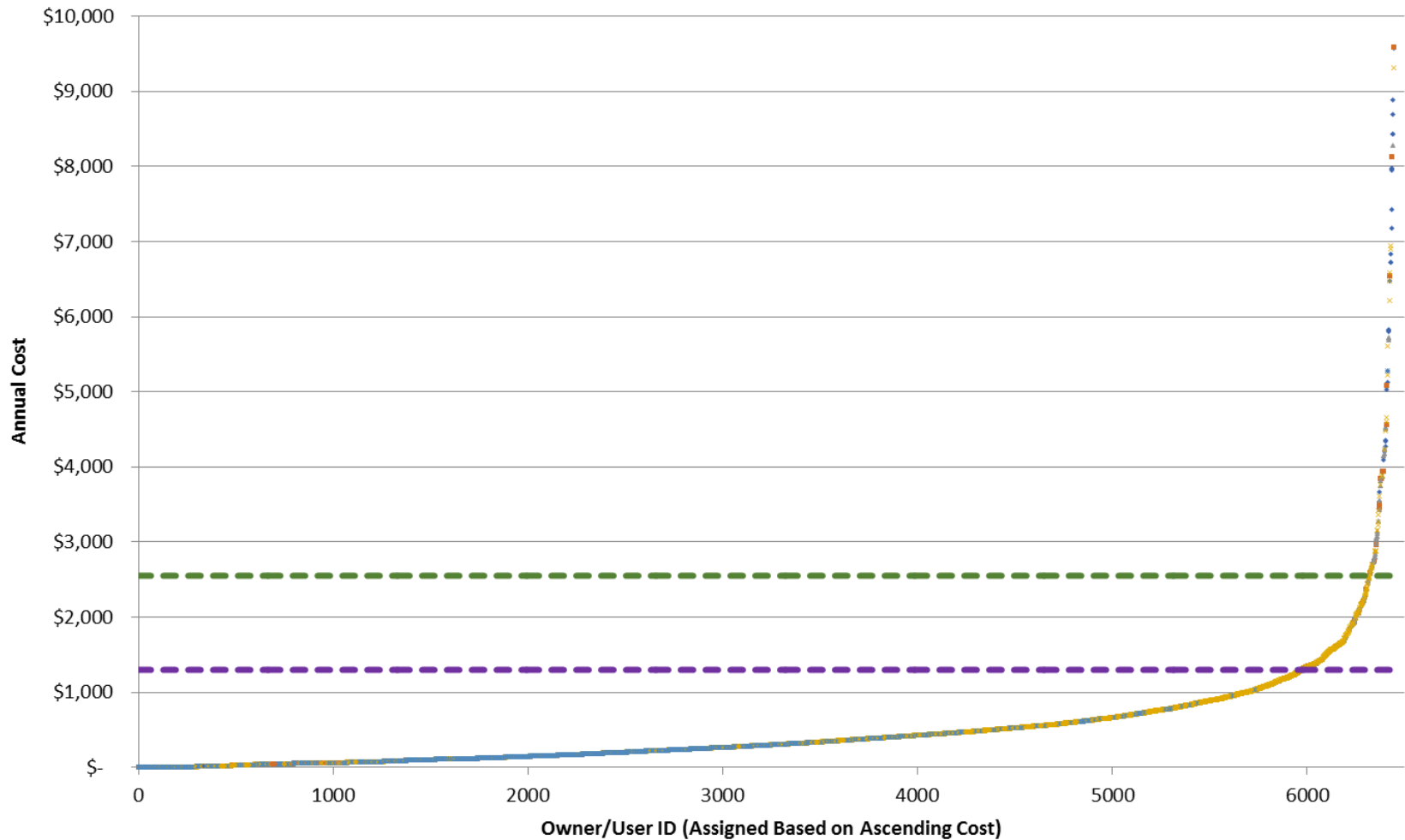
Case I - One Plant - Year 8 - Annual Cost - Non-Traditional Area Owners/Users



Case I - One Plant - Year 8 - Annual Cost - Septic Only Owners/Users



Case I - Two Plants - Year 8 - Annual Cost - Zoom

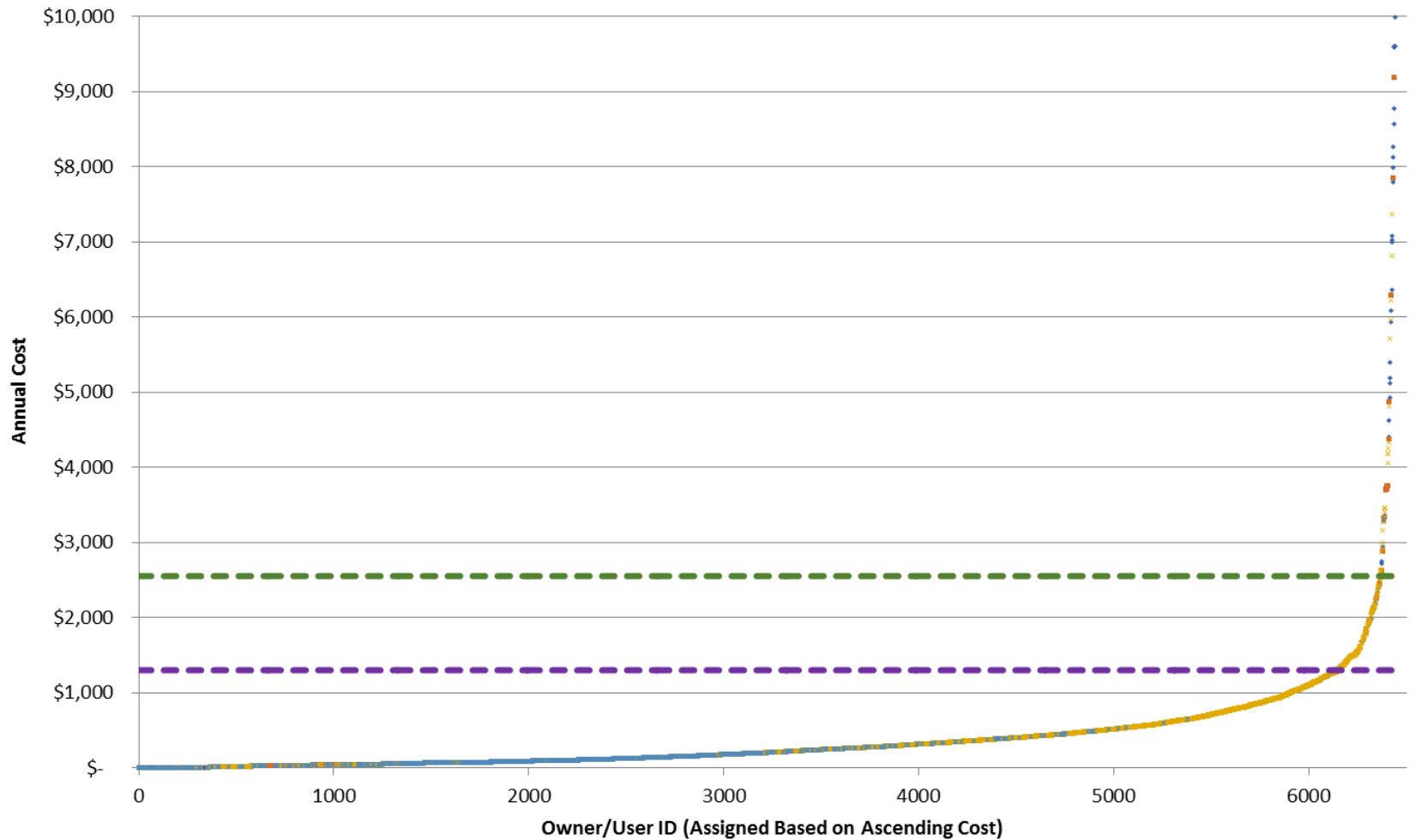


- Downtown - Non-Residential
- Downtown - Residential
- Meetinghouse Pond
- Non-Traditional
- Septic Only
- EPA Affordability Benchmark of 2% MHI
- Approved CWMP(2010)

* Source: US Census Bureau, 2011-2015 American Community Survey 5-Year Estimates
 Note: This graph shows annual costs for 99.8% of owners/users. Remaining 0.2% are not shown at this scale.



Case I - One Plant - Year 8 - Annual Cost - Zoom



- Downtown - Non-Residential/Mixed Use
 - Downtown - Residential
 - Meetinghouse Pond
 - Non-Traditional
 - Septic Only
 - EPA Affordability Benchmark of 2% MHI
 - Approved CWMP(2010)
- * Source: US Census Bureau, 2011-2015 American Community Survey 5-Year Estimates
 Note: This graph shows annual costs for 99.7% of owners/users. Remaining 0.3% are not shown at this scale.



Example Financial Model Output – Per Parcel Data

Case I – Two Plants

Key	GISNum	Address	Classification	Phasing	Land Use Classification	2015 Assessed Value	2014-2015 Avg. Daily WW Usage	Year 8			
								Assess	Prop Tax	U Charge	Total
2512	2207	2 ACADEMY PLACE	Dow ntow n	2	Non-Residential/Mixed Use	\$934,600	866.76	\$ 4,825	\$ 293	\$ 15,541	\$ 20,659
10155	2180	4 ACADEMY PLACE	Dow ntow n	2	Residential	\$668,500	263.58	\$ 1,615	\$ 210	\$ 4,726	\$ 6,551
5923	2279	5 ACADEMY PLACE	Dow ntow n	2	Non-Residential/Mixed Use	\$19,700	407.04	\$ 2,266	\$ 6	\$ 7,298	\$ 9,570
2511	2180	6 ACADEMY PLACE	Dow ntow n	2	Residential	\$423,900	183.94	\$ 1,127	\$ 133	\$ 3,298	\$ 4,558
2513	2254	8 ACADEMY PLACE	Dow ntow n	2	Non-Residential/Mixed Use	\$597,200	69.94	\$ 389	\$ 187	\$ 1,254	\$ 1,831
2514	2171	10 ACADEMY PLACE	Dow ntow n	2	Residential	\$1,073,500	132.30	\$ 811	\$ 337	\$ 2,372	\$ 3,519

Case I – One Plant

Key	GISNum	Address	Classification	Phasing	Land Use Classification	2015 Assessed Value	2014-2015 Avg. Daily WW Usage	Year 8			
								Assess	Prop Tax	U Charge	Total
2512	2207	2 ACADEMY PLACE	Dow ntow n	2	Non-Residential/Mixed Use	\$934,600	866.76	\$ 8,828	\$ 183	\$ 15,966	\$ 24,977
10155	2180	4 ACADEMY PLACE	Dow ntow n	2	Residential	\$668,500	263.58	\$ 1,301	\$ 131	\$ 4,855	\$ 6,287
5923	2279	5 ACADEMY PLACE	Dow ntow n	2	Non-Residential/Mixed Use	\$19,700	407.04	\$ 4,146	\$ 4	\$ 7,498	\$ 11,647
2511	2180	6 ACADEMY PLACE	Dow ntow n	2	Residential	\$423,900	183.94	\$ 908	\$ 83	\$ 3,388	\$ 4,379
2513	2254	8 ACADEMY PLACE	Dow ntow n	2	Non-Residential/Mixed Use	\$597,200	69.94	\$ 712	\$ 117	\$ 1,288	\$ 2,117
2514	2171	10 ACADEMY PLACE	Dow ntow n	2	Residential	\$1,073,500	132.30	\$ 653	\$ 210	\$ 2,437	\$ 3,300





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Downtown Zoning Proposal

Proposed Amendment

	<u>Existing</u>	<u>Proposed</u>
❖ Density	6 units/acre	8 units/acre
❖ Lot Size	60,000 s.f.	20,000 s.f. in VC 30,000 s.f. in LB GB
❖ Unit Incentives	- none -	up to 4 additional units
❖ Affordable Requirement	- none -	1 affordable unit per 10

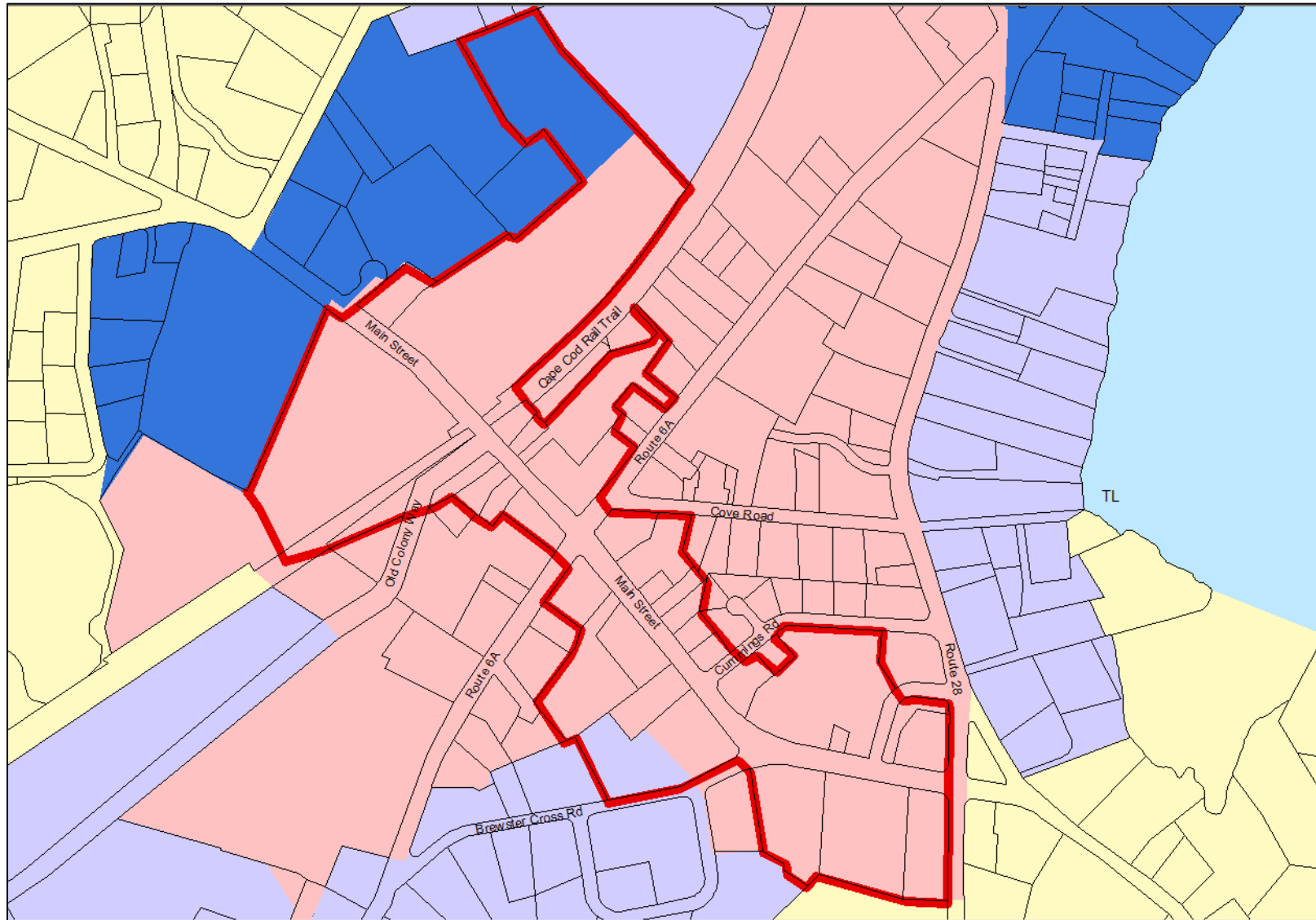


Proposed Amendment (cont.)

	<u>Existing</u>	<u>Proposed</u>
❖ Max. Building Height	30 feet	35 feet
❖ Parking Reduction	Special Permit	Up to 20% by Bldg Comm.
❖ Master Plan Spec Permit	- none -	For large and phased projects



Main Street Overlay District



Main Street Overlay District (cont.)

❖ Main Street frontage Development

- No minimum lot size
- No reduction for commercial parking
- Expand dimensional nonconformities by Special Permit



Main Street Overlay District (cont.)

❖ Need for Overlay District (32 Parcels)

- 16 parcels less than 20,000 s.f.
- 15 nonconforming as to frontage
- 17 nonconforming as to side or rear



Potential Apartment Units

❖ Existing units	800
❖ Potential New:	
• Same zoning, sewers only	445
• Proposed zoning	609
• Main Street Overlay District	51+





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Update on Design/Build/Operate Evaluation

Delivery Options (cont.)

Brief Overview of Major Options

- ❖ **Design-Bid-Build with Contract Operations**
- ❖ **Design-Build with Contract Operations**
- ❖ **Design-Build-Operate**



Delivery Options (cont.)

Steps to Get Legislation

❖ Draft Article for FY18 May Town Meeting

- Draft Special Legislation
- Meet with Town Counsel
- Decide if Outside Counsel Should Draft Special Legislation
- Conduct Workshop with Board of Selectman and Town Counsel on Key Issues

❖ Sample Special Legislation

- Gardner, MA
- Holyoke, MA
- Provincetown, MA
- Taunton, MA



Delivery Options (cont.)

Preliminary Risk Analysis

Risk	Design-Bid-Build w/Contract Operations	Design-Build w/Contract Operations	Design-Build- Operate
Capital Cost Savings			
Operations & Maintenance Cost Savings			
Peripheral Costs (Legal, Owner's Engineer)			
Inflation and Cost Escalation			
Size of Bidder Pool (Competitive Bids)			
Eligibility for SRF Financing			
Contracting Multi-Phased Implementation			
Incentivizing Innovation			
Contract Termination & Default Provisions			
Delivery (Design and Construction) Schedules			
Need for Administrative Services (e.g. Billing, Monitoring, NT Projects)			
Asset Management Provisions			



Delivery Options (cont.)

Next Steps in D/B/O Delivery Option Evaluation

- ❖ **Continue with FY17 Tasks and Work Products**
- ❖ **Draft Article & Define Legislative Route for Special Legislation**
- ❖ **Further Refine D/B/O Potential Cost and Time Savings**
- ❖ **Develop D/B/O Risk Assessment & Risk Mitigation Options**
- ❖ **BOS Workshop / Meeting – March 22, 2017**
- ❖ **Consider Recommendations on Delivery Options from Consulting Team**
- ❖ **Draft FY18 Warrant Article to Reflect BOS Decision on Delivery Option**



Next Steps

❖ Downtown Area Owners

- Discussion
- Provide Comments

❖ Finance Committee

- Discussion
- Input to Board of Selectmen

❖ Board of Selectmen

- Determine Two WWTFs vs. One WWTF
- Finalize Preferred Cost Allocations





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Thank You