



Town of

Orleans
Massachusetts

Board of Selectmen

Water Quality and Wastewater Planning Program Update

February 8, 2017

Agenda

- ❖ **Tri-Town Septage Treatment Facility Demolition**
- ❖ **Non-Traditional Technologies**
- ❖ **Effluent Disposal**
- ❖ **Program Costs and Cost Allocation**
- ❖ **Procurement Options**





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Tri-Town Septage Treatment Facility Demolition

Non-Traditional Technologies

Effluent Disposal

Tri-Town Septage Treatment Facility Demolition

- ❖ **Tri-Town District IMA and Permit expired on December 31, 2016**
- ❖ **Septage Receipts Ceased on June 1, 2016**
- ❖ **Schedule**
 - Decommissioning – June 2016 thru August 2016
 - Contract Documents – June 2016 thru November 2016
 - Bidding – December 2016 thru February 2017
 - Town Meeting Appropriations (Brewster, Eastham & Orleans) – May 2017
 - Demolition – September 2017 thru April 2018



Tri-Town Septage Treatment Facility Demolition (cont.)

❖ Bid Opening – Revised to February 15, 2017 at 9:00 am

- Bids Received: TBD
- Range: \$TBD to \$TBD
- Apparent Low Bidder: TBD

	Tri-Town Septage Treatment Facility	Compost Shelter	Total
Estimated	\$2,300,000	\$450,000	\$2,750,000
Actual	\$TBD	\$TBD	\$TBD



Non-Traditional Technologies

Aquaculture

❖ Lonnies Pond Project

- Received SMAST Report
- Preparing Year 1 Report Following Receipt of SMAST Monitoring Report

❖ Kent's Point Oyster Bed Propagation

- Received Remote Set Materials
- Preparing for Spring Implementation

❖ Enhanced Aquaculture in Pleasant Bay and Town Cove

- Submitted Draft Enhanced Aquaculture TM

❖ Town Cove Project

- Waiting for Completion of Quahog Population Survey from SMAST



Non-Traditional Technologies (cont.)

Permeable Reactive and Nitrogen Reducing Barriers

Permeable Reactive Barriers

- ❖ Eldredge Park
 - Wells installed and Sampling Underway
 - Submitted Draft Implementation TM
- ❖ Landfill
 - Addressing Comments on Investigation Plan
 - Phase 1 Sampling and Analysis Underway
 - Preparing Phase1 TM
 - Preparing for Phase 2 Design and Implementation

Nitrogen Reducing Barriers

- ❖ Identified Seven Sites with BOH
- ❖ Prepared Draft Letter for Submittal to Property Owners
- ❖ Based on Responses Evaluate and Identify Four Sites for Implementation
- ❖ Working with County On-Site Test Center for Design and Monitoring Plans



Effluent Disposal

❖ Site 1/1A

- MHC Response - “no adverse effect” on the Old King’s Highway Regional Historic District
- Scheduling Field Investigations

❖ Downtown Area

- Waiting for Response From Nauset Regional School District

❖ Route 6 Exit 12

- Submitted Permit Application
- Conducting Coordination Meetings with MassDOT

❖ USGS

- Coordinating Particle Tracking Model Update with Reduced Flows
- Confirming Acceptable Nitrogen Loads to Little Namskaket





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Program Costs and Cost Allocation

Program Costs and Cost Allocation

Elements of the Program	Major Cost Components	Users
Collection, Treatment and Effluent Disposal	Capital and Annual O&M	Sewered Areas
Non-Traditional Technologies	Capital and Annual O&M	On-Site Systems in Nitrogen Sensitive Watersheds
Retain Existing On-Site Systems	Owners Responsible for Future System O&M and Upgrades	On-Site Systems in Non-Nitrogen Sensitive Watersheds



Program Costs and Cost Allocation (cont.)

Two WWTFs verses One WWTF

Elements of the Program	2 WWTFs	1 WWTF	Difference
Estimated Capital Costs	\$71,719,000	\$69,347,400	\$2,371,600
Estimated Annual O and M Costs	\$1,091,400	\$972,200	\$119,200
Estimated Annual Replacement Costs	\$221,100	\$210,800	\$10,300
Estimated Annual Monitoring Costs	<u>\$78,000</u>	<u>\$61,000</u>	<u>\$17,000</u>
	\$1,390,500	\$1,244,000	\$146,500
Estimated Present Worth Savings Over 20 years at 3% Interest Rate			\$4,551,600



Program Costs and Cost Allocation (cont.)

Financial Plan

- ❖ **Incorporated Implementation Phasing Plan for Program**
- ❖ **Incorporated Water Use and Property Assessment Data**
- ❖ **Reviewed and Adjusted Project Costs**
- ❖ **Developed Detailed Model with Functionality**
- ❖ **Scenarios Used Federal, State, or Regional Funding Options**
- ❖ **Produced Best “Reasonably Optimistic” Scenario Assumptions**



Program Costs and Cost Allocation (cont.)

Financial Plan Scenarios

Component Description	A	B	C	D	E	F	G	H	I
100% Capital Cost on Tax Rate	X	X	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	X	X
30 Year Borrowing						X	X	X	X
D/B/O Savings							X	X	
Local Options Tax @ 5%							X	X	X
Septage Revenue							X	X	X
One WWTF								X	X
Downtown WWTF Capital Special Assessment @ 75%								X	X



Program Costs and Cost Allocation (cont.)

Assumptions	Customer Rate Scenarios			
	Case C	Case G	Case H	Case I
	<u>Capital - 100% Tax</u> <u>O&M&R&M - 100% User Fees</u> <u>Financing - 20-year 2% SRF</u>	<u>Capital - 100% Tax</u> <u>O&M&R&M - 100% User Fees</u> <u>Financing - 30-year 0% SRF</u> • 25% Grant • 21% D/B and 7% D/B/O Savings • 5% Local Tax Option • Septage Revenue • 25% to 15% Contingency Reduction for Capital/ Replacement Costs	<u>Capital - 65% Tax</u> <u>O&M&R&M - 100% User Fees</u> <u>Financing - 30-year 0% SRF</u> • 25% Grant • 21% D/B and 7% D/B/O Savings • 5% Local Tax Option • Septage Revenue • 25% to 15% Contingency Reduction for Capital/ Replacement Costs • One WWTF • 75% Downtown Area WWTF Special Assessment	<u>Capital - 65% Tax</u> <u>O&M&R&M - 100% User Fees</u> <u>Financing - 30-year 0% SRF</u> • 25% Grant • No D/B or D/B/O Savings • 5% Local Tax Option • Septage Revenue • 25% to 15% Contingency Reduction for Capital/ Replacement Costs • One WWTF • 75% Downtown Area WWTF Special Assessment

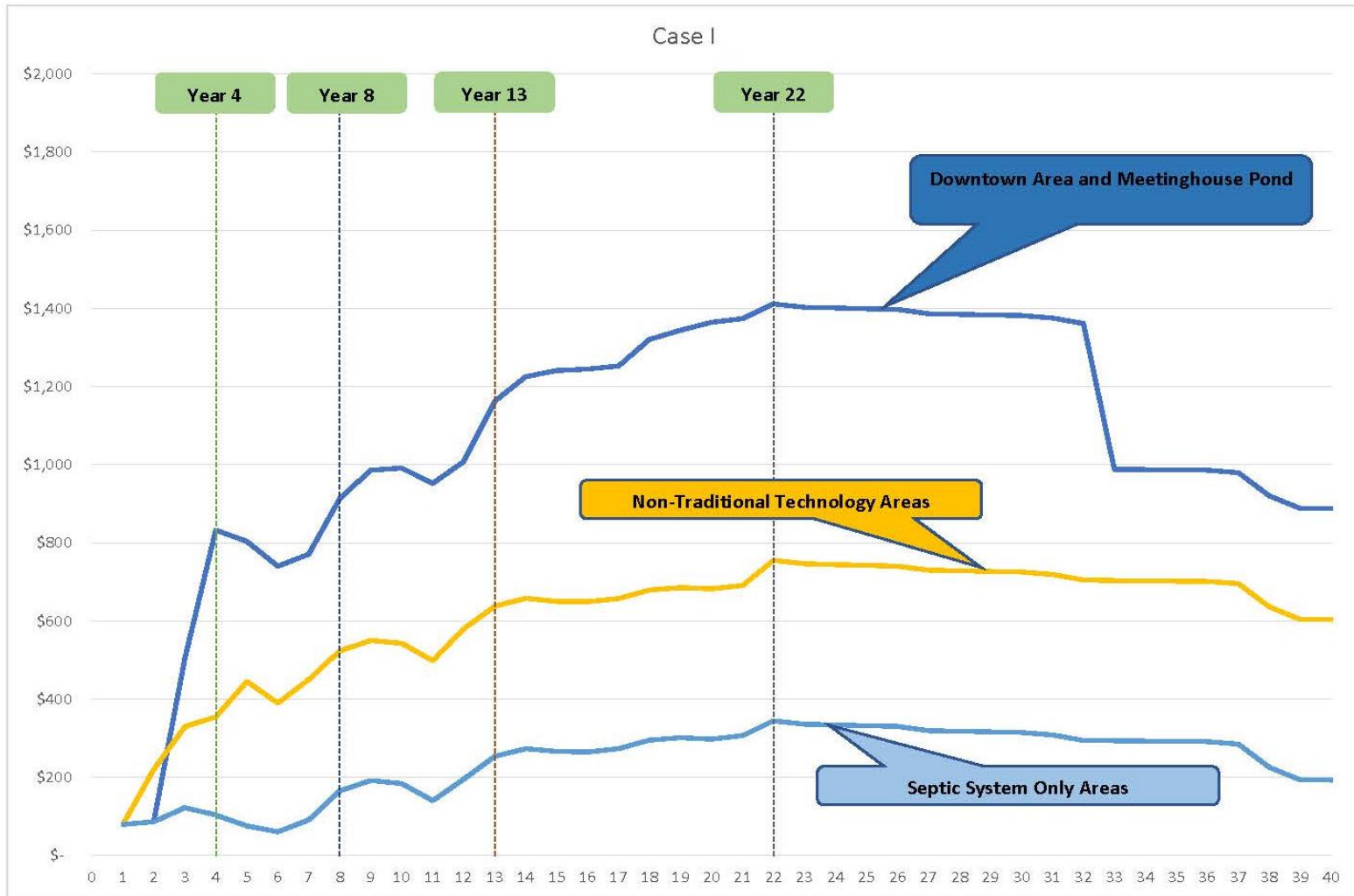
Total Annual Charge (without Downtown Assessment) - 100% of WWTF on Tax Rate				
Downtown Area - Commercial	\$1,723	\$1,105	\$932	\$1,019
Downtown Area - Residential	\$1,723	\$1,105	\$932	\$1,019
Meetinghouse Pond Area	\$1,848	\$1,038	\$932	\$1,019
Non-Traditional Technology Area	\$1,987	\$1,216	\$1,155	\$1,198
Septic System Only	\$948	\$343	\$282	\$325

Total Annual Charge (with Downtown Assessment) - 25% of WWTF on Tax Rate and 75% of WWTF Special Assessment				
Downtown Area Special Assessment (One Time Charge)	\$0	\$0	\$8,820	\$11,164
Downtown Area - Commercial	\$1,723	\$1,105	\$1,226	\$1,391
Downtown Area - Residential	\$1,723	\$1,105	\$1,226	\$1,391
Meetinghouse Pond Area	\$1,848	\$1,038	\$1,226	\$1,391
Non-Traditional Technology Area	\$1,987	\$1,216	\$1,155	\$1,198
Septic System Only	\$948	\$343	\$282	\$325

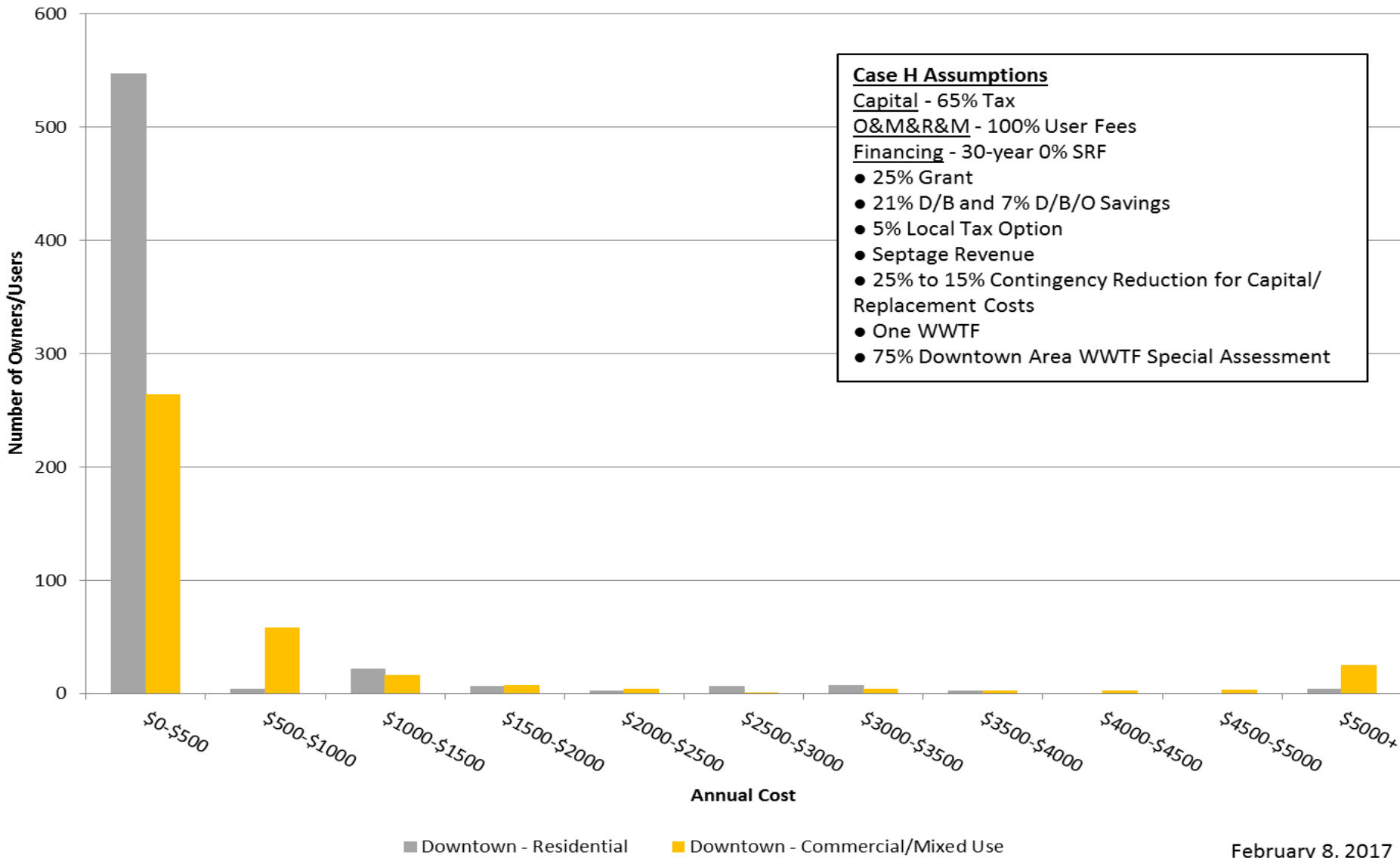
Charges shown are based on an averaging method for each area.
 Each property/unit in each area is charged the same amount.



Program Costs and Cost Allocation (cont.)



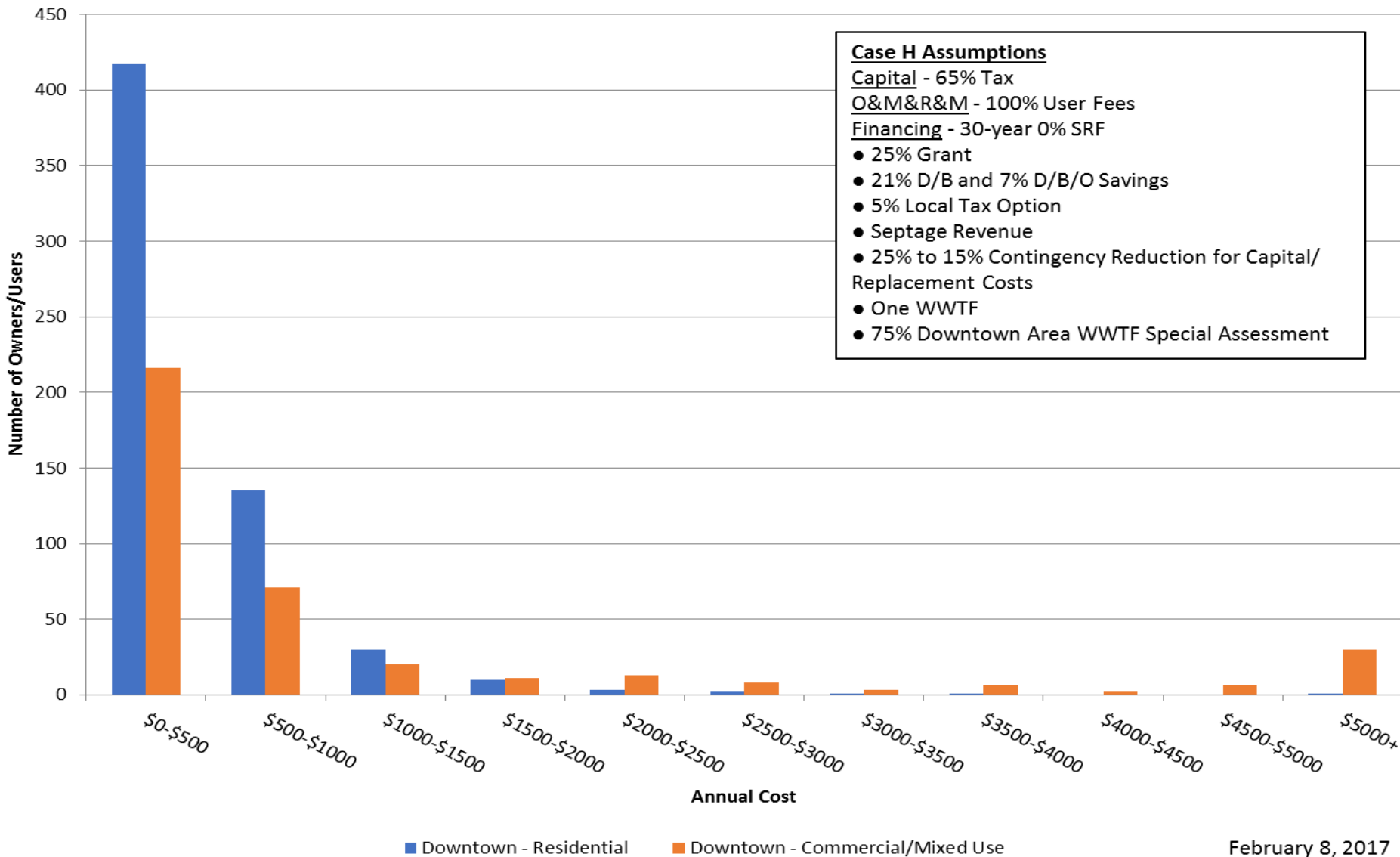
Case H - Year 7 - Annual Cost - Downtown Area



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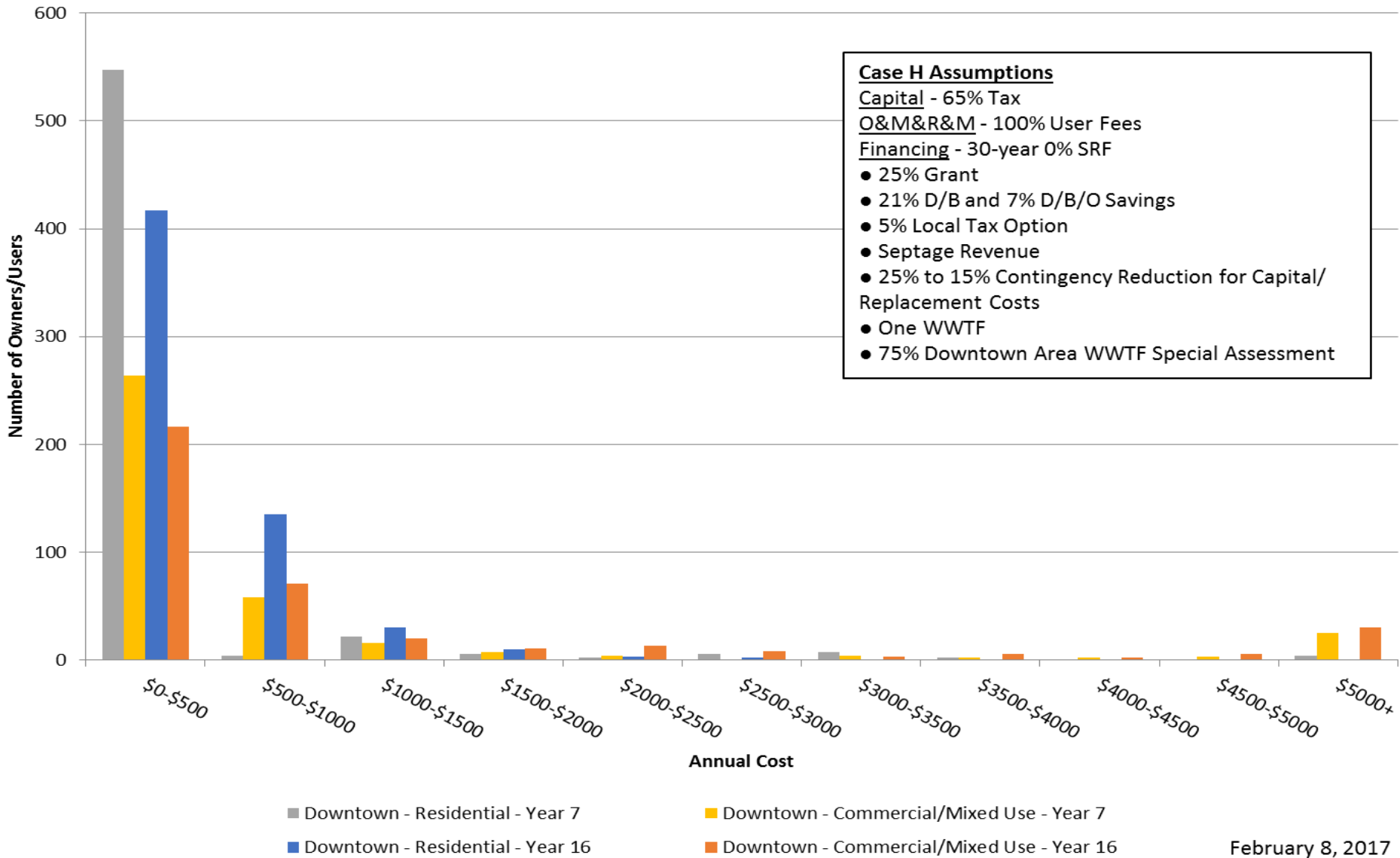
Case H - Year 16 - Annual Cost - Downtown Area



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Case H - Years 7 and 16 - Annual Cost - Downtown Area



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Program Costs and Cost Allocation (cont.)

Sample Assessment for Downtown Area

Sample Assessments for Downtown Area							2015	2014-2015	Assessment: \$ 5,000,000		Assessment: \$ 10,000,000	
							Assessed	Avg. Daily	Per-Property Amount		Per-Property Amount	
Key	GISNum	Address	Classification	Phasing	Land Use Classification	Value	WW Usage	Total	Yearly	Total	Yearly	
2512	2207	2 ACADEMY PLACE	Downtown	2	Non-Residential/Mixed Use	\$934,600	866.76	\$ 31,128	\$ 1,038	\$ 62,256	\$ 2,075	
10155	2180	4 ACADEMY PLACE	Downtown	2	Residential	\$668,500	263.58	\$ 9,466	\$ 316	\$ 18,932	\$ 631	
5923	2279	5 ACADEMY PLACE	Downtown	2	Non-Residential/Mixed Use	\$19,700	407.04	\$ 14,618	\$ 487	\$ 29,236	\$ 975	
N/A	N/A	0 ANTHONY DRIVE	Downtown	4	Residential	N/A	888.73	\$ 31,917	\$ 1,064	\$ 63,834	\$ 2,128	
10966	2497	3 ANTHONY DRIVE	Downtown	4	Residential	\$293,100	48.92	\$ 1,757	\$ 59	\$ 3,514	\$ 117	
10967	2497	5 ANTHONY DRIVE	Downtown	4	Residential	\$326,600	78.16	\$ 2,807	\$ 94	\$ 5,614	\$ 187	





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Procurement Options

Procurement Options (cont.)

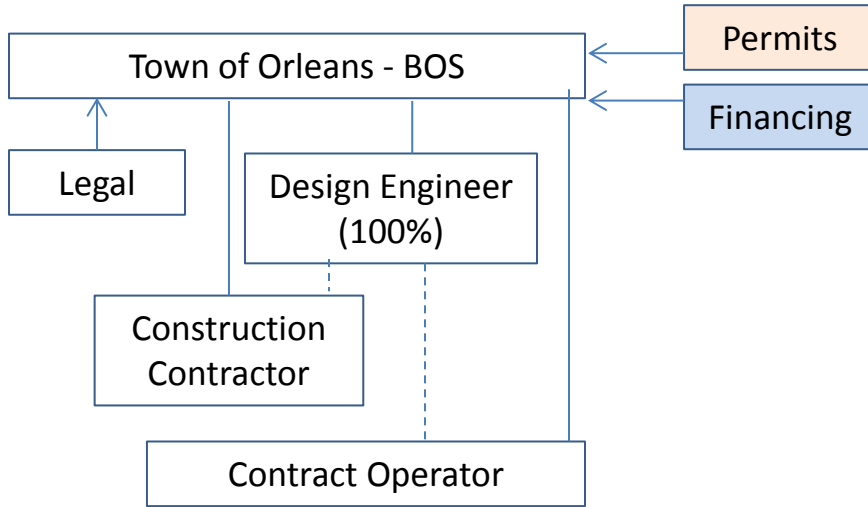
Brief Overview of Major Options

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

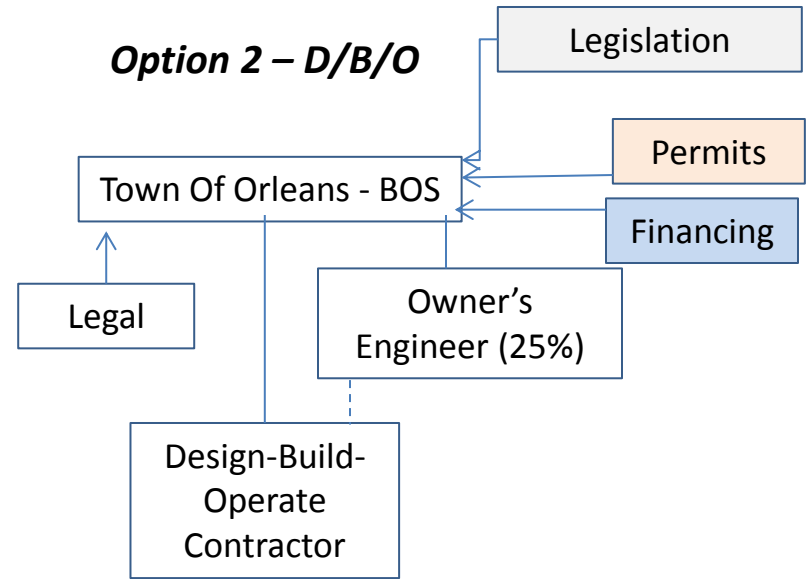


Wastewater Management Structures

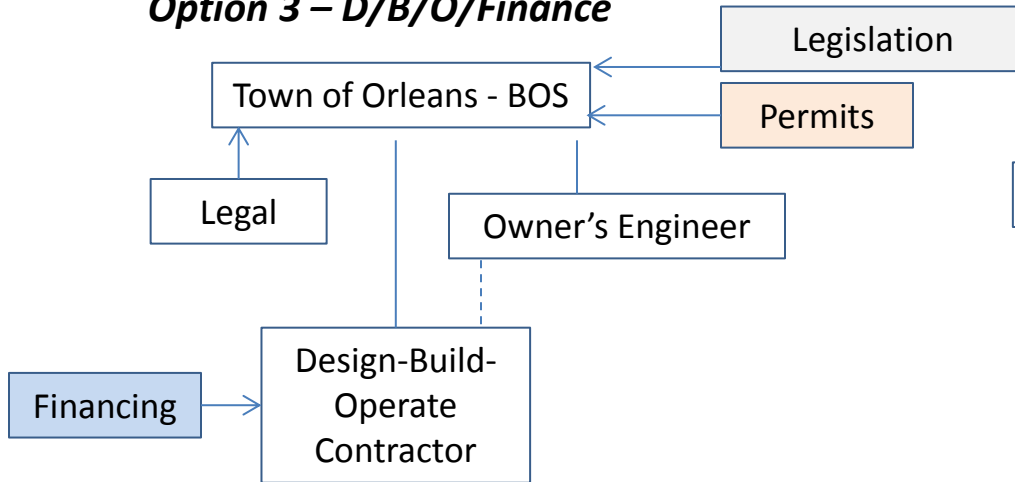
Option 1 – Conventional D-B-B with Contract Operations



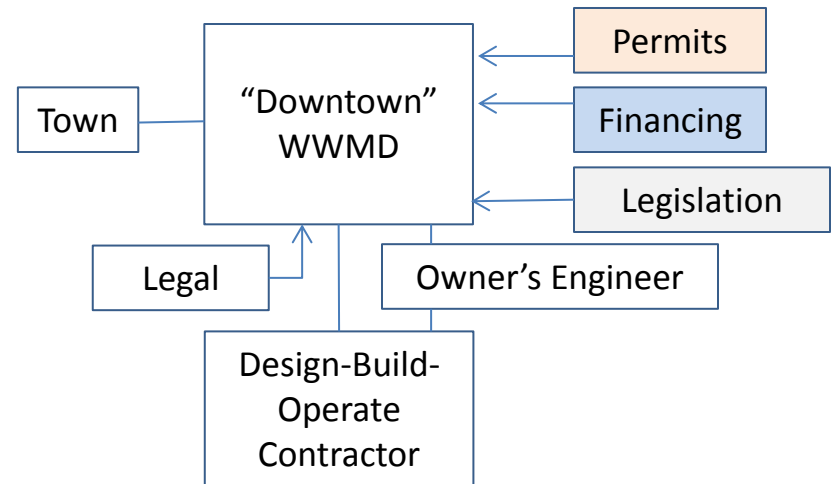
Option 2 – D/B/O



Option 3 – D/B/O/Finance



Option 4 – Wastewater Management District



Procurement Options (cont.)

Steps and Timetable to Get Legislation

❖ **Draft Article for FY18 May Town Meeting**

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

❖ **Sample Special Legislation Provided**

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



Procurement Options (cont.)

What Does Special Legislation Need to Contain?

❖ Simple as Possible to Provide Flexibility

❖ Identify

- Facilities and Activities Broadly (e.g. wastewater infrastructure design, construction and O&M)
- Length of Contract (Base Period and Option Period)
- RFQ/RFP Process will be Used
- Labor Requirements
- Future Additions/Modifications May Occur via State Procurement Laws

❖ Note

- Evaluation Criteria Will be Used to Select DB/DBO Contractor
- Provide Rationale if Low Price Bid is Not Accepted
- Facilities will be Eligible Clean Water Trust Loans

❖ Require Selection of Independent Firm as Owner's Engineer



Procurement Options (cont.)

Political Process to Get Special Legislation

- ❖ **Identify Legislative Sponsor - Sarah Peake**
- ❖ **Prepare Draft Special Legislation**
- ❖ **Sponsor Submits Special Legislation**
- ❖ **Committee Review (3 to 4 months)**
 - Joint Committee on Local Affairs
 - House of Representatives
 - Committee on Third Reading
 - House of Representatives
 - Senate
 - Governor
- ❖ **Hearings / Discussions**
 - Joint Committee
 - Union Officials



Procurement 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			



Procurement Options (cont.)

Additional Issues and Considerations

- ❖ **D/B/O Procurement Cost Reimbursement via SRF (e.g. legal)**
- ❖ **Dealing with Emerging Technologies in a D/B/O Contract Framework (e.g. On-Site PRBs)**
- ❖ **Management of Non-Traditional Projects: Town or D/B/O Contractor**
- ❖ **Regulatory Compliance Management : T & NT Programs**
- ❖ **On-going Monitoring & Modeling Requirements**
- ❖ **Risk Associated with NT Project Permittability & Compliance**



Procurement 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 / Meetings**
- ❖ **Consider Recommendations on Delivery Options from Consulting Team**
- ❖ **Draft FY18 Warrant Article to Reflect BOS Decision on Delivery Option**





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Thank You