PROJECT DESCRIPTION

Goal and Tasks
Study Goal

To understand the costs and steps involved in placing utilities underground, particularly along Main Street, in Orleans.
Research Tasks Completed

• Completed 2 Case Studies
  – Concord, MA and Nantucket, MA
• Researched Legal Framework
• Estimated Cost
• Researched Payment Options
Concord, MA and Nantucket, MA

CASE STUDIES
Concord

• Municipal electric utility established in 1898
• 1967 established an underground wiring fund with $40,000 the first year and annual appropriations going forward
• 1987 Town meeting approved the long-term goal of town-wide undergrounding and a 2% surcharge on monthly electricity bills (since lowered to 1.5%)
  – Currently approximately 50% are underground
  – Average cost estimated at $1M per mile
  – The average surcharge is $3-$4 per ratepayer per month
Note on Munis

• 41 municipal utilities in Massachusetts
  – Serve 15% of the population
• Customers of municipal utilities pay an average of 24% less on their electric bills according to the Massachusetts Municipal Wholesale Electric Company.
• No new municipal utilities have been established since 1926 with passage of MGL Chapter 164
Nantucket

• Investor owned utility
• Undergrounding began in the downtown (6 miles) and then in Siasconset village (2 miles)
• The purpose was to preserve historic character and improve reliability
• The cost was approximately $1M per mile not including labor or transformers
• The Town spent approximately $2M on additional costs
Massachusetts Law

LEGAL FRAMEWORK
MGL Chapter 166 Section 22

- Municipalities may:
  - Require that any new utilities for new development to be placed underground
  - Require that existing utilities be placed underground by the utility companies
Orleans By-Law

- Orleans zoning provision for new utility lines:
  - For any Definitive Plan showing property which could potentially be developed with two or more new dwellings, all electrical, telephone, cable television and other utility lines shall be placed underground.
  - Appears to be limited to residential subdivisions
MGL Chapter 166 Section 22

• Existing utility lines – municipalities must
  – Complete a preliminary study with utilities
  – Establish the need
    • Public safety, health, convenience or welfare
  – Conduct a public hearing and make a report of findings, conclusions, and recommendations
  – Adopt an ordinance or by-law
  – Reimburse (through ratepayers or directly) utilities
Orleans Definition of Need

• Defining the need for Orleans
  – **Public Safety**: Cape Cod is considered very vulnerable to storms which reduces the reliability of overhead utility lines that can take weeks to repair.
    • But since Orleans is considering undergrounding only a small section this justification may be more difficult.
  – **Welfare**: not specifically defined
    • Orleans could argue that the area they wish to underground will support further economic development by improving reliability to businesses and community character which is essential for a successful tourism sector.
How much does it cost to complete and how do you pay for it?

COST ESTIMATES & FINANCING
Cost of Undergrounding

• Utilities incur the cost of construction but must be reimbursed by ratepayers or the town or both
  – Eversource quoted $3M per mile cost
  – Cable utility and other utility costs will be above and beyond this estimate – this study assumes the cost is the same at $3M per mile
Cost of Undergrounding

• The town may incur direct costs in addition to those incurred by the utilities
  • Obtaining easements if necessary
  • Moving water/sewer infrastructure if necessary
  • New street lights if they were previously on the poles
  • Fixing the road

• There may also be direct costs to property owners since utilities are only required to underground 50ft into private property
Cost Estimate for Orleans

- Cost per mile for Electricity Lines:
  - $3M per mile estimate from Eversource
  - Route from bike path to library is .4 miles so at $3M per mile this section would cost $1.2M
  - From 6A/Main intersection to Eastham town line is .8 miles so at $3M per mile this section would cost $2.4 M
  - The transmission lines over Cedar Pond span .17 miles; assuming the same unit cost this section would cost $510,000 however, it is likely that burying transmission lines is more expensive than burying distribution lines

- Assuming the cost of undergrounding Cable is the same the total bill will be twice this estimate
Maintenance

- Takes longer to repair but the need to make repairs occurs less often
  - Nantucket estimated underground maintenance was 2 ½ times the cost of above ground
  - Concord experience very few outages in their underground system during Hurricane Irene and were able to concentrate their energies on the areas still served by overhead lines
Paying for Undergrounding

• MGL Chapter 166 Section 22 requires utilities to do the burying but their costs must be reimbursed
  – Reimbursement fee rates are:
    • 7% of electric retail sales;
    • 2% of other utilities gross revenues (at time of Nantucket project all were 2%)
  – All residents must pay the reimbursement fees even if they do not directly benefit
  – The payback period is determined in cooperative agreements between the town and the utilities
Paying for Undergrounding

- In Orleans
  - the 7% surcharge on retail electricity sales would generate approximately $448,000 per year

<table>
<thead>
<tr>
<th>Total Meter Charges (Eversource Summer 2015)</th>
<th>6,394,707</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest Possible Surcharge</td>
<td>7%</td>
</tr>
<tr>
<td>Estimated Annual Revenue from Surcharge</td>
<td>447,629</td>
</tr>
</tbody>
</table>
## Paying for Undergrounding (Electric Only)

<table>
<thead>
<tr>
<th>Location</th>
<th>One Mile</th>
<th>Main Street: Rt. 28 to Commerce Way</th>
<th>Eastham Gateway: Town Line to New Roundabout</th>
<th>Both</th>
<th>Cedar Pond</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miles to be put underground</td>
<td>1</td>
<td>0.4</td>
<td>0.8</td>
<td>1.2</td>
<td>0.17</td>
</tr>
<tr>
<td>Estimated Total Cost to Utility</td>
<td>$3,000,000</td>
<td>$1,200,000</td>
<td>$2,400,000</td>
<td>$3,600,000</td>
<td>510,000</td>
</tr>
<tr>
<td>Years to pay off bill assuming surcharge generate 500K/year and no interest</td>
<td>7</td>
<td>2.68</td>
<td>5.36</td>
<td>8.04</td>
<td>1.14</td>
</tr>
<tr>
<td>Estimated Ratepayer Cost over life of surcharge</td>
<td>$453</td>
<td>$181</td>
<td>$363</td>
<td>$544</td>
<td>$77</td>
</tr>
</tbody>
</table>

On a monthly basis this would AVERAGE approximately $6 per ratepayer
Paying for Undergrounding (Other Utilities)

- Phone/TV/Internet monthly bills average $100
- If you assume the same number of ratepayers as for electric that amounts to $7.9M sales annually
- Multiplied by the reimbursement rate of 2% this would generate $158,784 per year
- At this rate it would take 8 years to pay for Main Street and 15 years for the other two areas
Other ways to pay for Undergrounding

- General fund annual appropriations
- Bonding
  - Local bonding authority (MGL chapter 44 section 7-8): underground utilities are not listed as an eligible activity to be funded through a municipal bond. There is a general clause but that only allows a 5 year bond which is unrealistic for undergrounding utilities. Thus, either a change in the legislation or a piece of special legislation would be needed to allow for any local financing.
Other ways to pay for Undergrounding

• State MassWorks Infrastructure Program
  – Grants generally associated with new growth
  – Rural communities eligible for set aside up to $1M
    • These grants may fund all design costs but must also be used to fund construction
  – 2015 Investment Goals focused on housing and preference was given to mixed use districts, projects in weak or distressed areas, and where the community committed resources
  – Projects must be ready to proceed with construction in the upcoming construction season
Other ways to pay for Undergrounding

- Possible Federal Funding Sources
  - CDBG: Yes, but must benefit residential area with 51% low to moderate income residents
  - Federal Highway Transportation Enhancements Program: Yes under the Landscaping and Other Scenic Beautification activity area (#5 of their 12 eligible activities)
  - FEMA Pre-disaster Mitigation Grants: Hazard Mitigation plan for Orleans required that identifies areas as high risk