Case Study: Full-Depth Reclamation Projects in an Urban Environment

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City of Falls Church Department of Public Works
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“The Little City” is growing and becoming more dense and urban each year.

City of Falls Church, VA

- 2.2 square miles
- 14,000 residents
- 6 miles from Washington, D.C.
- Generally have higher incomes and education levels than national average
Most roadways are built directly onto our soils, which include clay, sand and river rock.

City of Falls Church Pavement
S West St is a 2-lane undivided minor arterial with on-street parking. It provides access to recreational facilities.

Project 1: South West Street

- 2/3 mile segment
- Failing valley gutters
- Utility issues
- No base materials
- AADT: 7,500
- Single-family residential
This project required extensive coordination with Fairfax Water, Washington Gas and DVP.

S West St - Scope

- Replace water main (3rd party)
- Repair or replace stormwater pipes
- Concrete work: curb repairs, new ramps, and new valley gutters
- Maintain driveway and emergency access
- Detour through traffic
The street was rated a 5 (on a scale from 1-5) in April 2015 and was very difficult to drive on.
The traditional reconstruction project started to have issues almost immediately.

- Poor concrete work
- Gas line hit
- Personal disagreement between Construction Manager and Contractor
- Lack of attention from prime contractor/scheduling concerns
City staff had to re-evaluate the project construction method to address contractor issues and other concerns.

### S West St - Method

<table>
<thead>
<tr>
<th></th>
<th>Cost</th>
<th>Quality</th>
<th>Schedule</th>
<th>MOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>Within Budget</td>
<td>High</td>
<td>Extended</td>
<td>Highly Disruptive/Infeasible</td>
</tr>
<tr>
<td>FDR</td>
<td>12-18% less</td>
<td>High</td>
<td>Accelerated</td>
<td>Moderately Disruptive</td>
</tr>
</tbody>
</table>
Arlington County had done a few FDR projects and recommended Slurry Pavers.

S West St - Demo

- Slurry Pavers came to the City and gave an excellent, comprehensive presentation
- Field demonstration did not go as planned because prime Contractor caused delays
Cost was a minor concern since project had numerous pots of funding applied to it.

### S West St - Cost

<table>
<thead>
<tr>
<th>Firm</th>
<th>Traditional Reconstruction Cost</th>
<th>Full-Depth Reclamation Cost</th>
<th>Confidence in Quality and Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor 1</td>
<td>$1,000,132.45</td>
<td>$813,884.15</td>
<td>None</td>
</tr>
<tr>
<td>Contractor 2</td>
<td>$1,126,664.10</td>
<td>$986,126.28</td>
<td>Moderate</td>
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</tbody>
</table>
Road closures and detours were anticipated regardless of the construction method.

<table>
<thead>
<tr>
<th>Driveway Access</th>
<th>Depth of Cut</th>
<th>Time to Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional Reconstruction</td>
<td>NO</td>
<td>18”</td>
</tr>
<tr>
<td>Full-Depth Reclamation</td>
<td>YES</td>
<td>4.5”</td>
</tr>
</tbody>
</table>
One year and several inches of snow and rain later, the road is performing well.

S West St – After Photos
Roosevelt Blvd is a 4-lane divided roadway that connects popular destinations such as Seven Corners, Eden Center and the East Falls Church Metro Station.

Project 2: Roosevelt Boulevard

- 1/3 mile segment
- Severe cracking and potholes
- Drainage issues
- AADT: 20,000
- Multifamily residential and commercial properties
This project required extensive coordination with Fairfax Water, Washington Gas and WMATA.

Roosevelt Blvd - Scope

- Adjust gas valve covers (3rd party)
- Adjust grading of roadway to accommodate bike lanes
- Repair curb and median
- Maintain driveway and emergency access
- Maintain at least one travel lane per direction
Past experience with SWest St made this project go much more smoothly.

**Roosevelt Blvd - Process**

| • Estimate LF of concrete repairs                  | • Pre-construction meeting                       |
| • Analyze core samples and design pavement        | • Hire off-duty officers for 1st phase of project |
| • Get quotes                                       | • Perform density testing                        |
| • Contact utility companies                        | • Monitor traffic                                 |
| • Notify public                                    | • Pre-marking Inspection                         |
|                                                  | • Final Walkthrough                              |
Funding Source: Revenue Sharing (VDOT & Local Bond Funds)

Roosevelt Blvd - Cost

Initial Estimate: $786,318.75
Construction began in July 2016 and was completed in August 2016; marking was completed in September 2016.
The City plans to utilize the FDR method for pavement reconstruction projects whenever possible.

CFC’s FDR Experience

- Generally takes less time
- Cost-effective
- “Green” option – fewer spoils
- Flexibility in dense residential areas
Thank you!

Questions?

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