Princess Anne Plaza
Civic League Meeting
November 10, 2015
Storm Water Improvements
Princess Anne Plaza
Civic League Meeting

Agenda

• Drainage Areas and Flood Plain Maps
• Completed Projects
• Current Projects
• Potential Improvements Being Evaluated
Princess Ann Plaza Drainage Areas

- Virginia Beach Blvd
- Lake Windsor Area of Concern
- Windsor Woods
- Princess Anne Plaza
- Bow Creek Area of Concern

Source: PARSONS BRINCKERHOFF
Flood Zones - Effective Jan 16 2015

FEMA Flood Zones - Preliminary

VE = High Risk Coastal Areas with 1% or greater chance of flooding and additional hazards associated with storm waves

AO = 1% or greater chance of shallow flooding from river or streams, avg 1-3’

AH = 1% annual chance of shallow flooding usually from a pond, avg 1-3’

A = 1% annual chance of flooding

AE = Base floodplain see FIRM map for elevations

0.2% annual chance of flooding

X = Moderate to Low Risk Areas
List of Completed Projects

- CIP 2-909  Canal Number 2 Improvements (1990)  
  Cost $55 million
  Cost $1.2 million
- CIP 7-114  Princess Anne Plaza Drainage Phase 2 (1998)  
  Cost $5.9 million
- CIP 7-004  Storm Water Infrastructure Rehabilitation (2008)  
  Cost $5 million
- CIP 3-405  Bow Creek Rec Center (2015) Storm Drainage Work  
  Cost $600K
CIP 2-909
Completed 1990

Canal #2 Improvements – Cost $55 million
CIP 2-115
Completed 1996

Rosemont Road – Windsor Woods Drainage – Cost $1.2 million
Princess Anne Plaza Drainage Phase II – Cost $5.9 million
CIP 7-114
Completed 1998

Princess Anne Plaza Drainage Phase II – Cost $5.9 million
CIP 7-004
Completed 2008

Storm Water Infrastructure Rehabilitation– Cost $5 million
CIP 3-405
Completed 2015

Bow Creek Rec Center Drainage – Cost $600k
Current Activities

• Survey of Residents – Preliminary Study
• Windsor Woods Canal Improvements
• Windsor Oaks West Canal Improvements
• Princess Anne Plaza Channel (North Gate) Improvements
Survey of Residents
Conducted 2014

<table>
<thead>
<tr>
<th>Summary of Data</th>
<th>#</th>
<th>% of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Evaluations Received</td>
<td>538</td>
<td>100%</td>
</tr>
<tr>
<td>Structural Flooding</td>
<td>49</td>
<td>9.1%</td>
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<tr>
<td>Yard Flooding</td>
<td>195</td>
<td>36.2%</td>
</tr>
<tr>
<td>Entire Street Flooding</td>
<td>309</td>
<td>57.4%</td>
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<tr>
<td>Occasional Street Flooding</td>
<td>79</td>
<td>14.7%</td>
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<tr>
<td>Ponding</td>
<td>26</td>
<td>4.8%</td>
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<tr>
<td>No Problems with Drainage</td>
<td>110</td>
<td>20.4%</td>
</tr>
<tr>
<td>Excellent Drainage</td>
<td>13</td>
<td>2.4%</td>
</tr>
</tbody>
</table>
Survey of Residents Info Plotted on Map
Maintenance Dredging and Channel Improvements

- Design: 1.5 Years
- Construction: 1.5 Years
- Estimated Cost: $3.0 Million
- Estimated 12,000 Linear Feet of Work
Windsor Woods Canal Improvements

Maintenance Dredging and Channel Improvements

Design 1.5 Years
Construction 1.5 Years
Estimated Cost $1.0 Million
Estimated 4,400 Linear Feet of Work
Windsor Oaks West Canal Improvements

Maintenance Dredging and Channel Improvements
- Design: 1.5 Years
- Construction: 1 Year
- Estimated Cost: $1.0 Million
- Estimated 1,700 Linear Feet of Work
Princess Anne Plaza Channel Improvements

Maintenance Dredging and Channel Improvements

Design  1.5 Years
Construction  1.5 Years
Estimated Cost  $1.0 Million
Estimated 6,000 Linear Feet of Work
Potential Future Improvements

• Maintenance
• Internal improvements
  Additional pipe systems
  Additional ponds for storage
• Ultimately may need to address Sea Level Rise
  Tide gates
  Pump Stations
Potential Future Improvements

- I-264
- Clean & Dredge Canal
- Increase pipe size to 30" or 48" and 60" or 72"
- Install 18" pipe
- Install 48" pipe
- Install additional inlets
- Disconnect pipe
- Connect & increase pipe size
- Create ponds: Install backflow preventers at outlet
- Elevate S. Rosemont Rd
- Install 24" pipe
- Disconnect existing channel to redirect flow
- Clean & Dredge Canal
- Holland Rd
- Rosemont Rd
- London Bridge Creek
Example - Pump Station