Continuous Flow Hybrid Intersection
Indian River Road and Kempsville Road Improvements
City of Virginia Beach

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Transportation Division

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UCI Annual Meeting
Current Conditions

- Most congested intersection in the City.
- Access and maintenance issues.

105,000 Vehicles Per Day
Signalized Intersections - V/C Rank

Capacity of Signalized Intersections

Needed Capacity

Excess Capacity

Indian River at Lake James

Indian River at Centerville

Indian River at Kempsville

Volume / Capacity = 1.0
Indian River Road-Kempsville Road
Balancing Needs

Three traditional options to address the problem:
1. Lane additions at grade.
2. Grade separated interchanges.
3. No build.

Or

Consider an innovative approach:
4. Non-traditional improvement.
Traditional Improvements – At Grade – Lane Additions

- Large footprint.
- Needs extensive Right of Way.
- Expensive, and disruptive.
- Estimated at $37 Million.
Traditional Improvements – Grade Separated – Interchanges

- Large footprint.
- Needs extensive Right of Way.
- Eliminates access
- Estimated at over $60 Million.
Traditional Improvements – No-Build Option

- Does not address problems.
- Does not meet future needs.
- Stifles commerce.
- Impacts quality of life.
- Unacceptable congestion.
Proposed Alternative – A Non-Traditional Improvement

- Hybrid design of two non-traditional solutions.
- Minimize right of way and cost.
- Maximize traffic flow.
- Estimated $10.4 Million
Intersection Design – Typical Signal

- Four typical phases: two through and two turns.
- Each phase requires green time and a short clearance time.
- Best to eliminate phases when possible.
Median U-Turn on Indian River Road

To Make A Left From Indian River to Kempsville

Time Shared - Greater Green Time Available To Both Movements Simultaneously
Displaced Left Turn on Kempsville Road

To Make A Left From Kempsville to Indian River

Greater Green Time Available To Both Movements Simultaneously
Moving Forward

- Total estimated cost for the project is $10.4 million.
- Project is funded with City and Federal Congestion Mitigation and Air Quality funds.
- No other option provides the level of improvements for the cost.
## Project Development Milestones

<table>
<thead>
<tr>
<th>Phase</th>
<th>Cost</th>
<th>Begin</th>
<th>End</th>
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</thead>
<tbody>
<tr>
<td>Design</td>
<td>$ 984,000</td>
<td>Ongoing</td>
<td>Spring 2013</td>
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<tr>
<td>Right of way</td>
<td>$ 3,500,000</td>
<td>Winter 2012</td>
<td>Spring 2014</td>
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<tr>
<td>Utility relocation</td>
<td>$ 525,000</td>
<td>Spring 2014</td>
<td>Fall 2015</td>
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<td>Construction</td>
<td>$ 4,500,000</td>
<td>Fall 2015</td>
<td>Fall 2016</td>
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<td>Street lighting</td>
<td>$ 150,000</td>
<td>Spring 2016</td>
<td>Fall 2016</td>
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<tr>
<td>Contingencies</td>
<td>$ 750,000</td>
<td>Spring 2013</td>
<td>Fall 2016</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$ 10,409,000</strong></td>
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1. Approaching 60% Design.
2. Project is fully funded with CMAQ and City funds.
3. NEPA process is ongoing: Phase I ESA complete.
4. Citizen Information Meeting complete.
5. Design & Location meeting meeting November 2012.
UCI Annual Meeting

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