Holmes Run/Chambliss Crossing Study & Streambank Stabilization/Restoration Project
Public Information Session
May 28, 2009
Purpose of This Meeting

• Provide information on project updates and expand project scope
• Discuss the viable crossing options
• Provide an engineer’s recommendation for a crossing
• Gather input from the public
• Discuss the May 30th site visit and briefing
Study Boundaries

- Context (Aerial)

- ex. path (Fairfax Co.)

- ex. healthy trees in study area

- ex. sanitary sewer

- ex. stormwater

- Dora Kelly Nature Park
Project Recap

- During the March 18th meeting we discussed:
  - The intent of the project –
    “To explore a possible bike/ pedestrian crossing”
  - Discussed possible crossing types
  - Community Groups and Residents
    • City of Alexandria Departments -
      (Transportation and Environmental Services, Planning and Zoning, Recreation, Parks and Cultural Activities)
    • City of Alexandria Police Department
    • Lake Barcroft Water Improvement District
    • Fairfax County Department
    • US Army Corps of Engineers
    • VA Department of Environmental Protection
    • VA Department of Transportation

- Brief Discussion on Streambank Stabilization
Project Updates

• We have incorporated the comments from the March 18th meeting into the focus of this project...

• The project scope has been expanded to include streambank stabilization and restoration for the project area.

• The consultants have developed crossing options that consider five criteria: aesthetics, environmental impact, hydraulic impacts, accessibility, and cost.

• The project team is currently coordinating with Fairfax County to conduct streambank stabilization/restoration project in this area.
Expanded Scope

• The project now includes an expanded streambank stabilization and restoration component.

• Funded by portions of BRAC mitigation fund.

• Focused on 350 linear feet along Alexandria and Fairfax from Dora Kelly Park to City Boundary.
Crossing Options

• The consultants studied several options for a crossing including:
  • Fair-weather crossing
  • Low Profile crossing
  • Bridge crossing

• Using a criteria-based approach, we have determined the most feasible and appropriate structure for a crossing.

• The crossing will be designed and built in conjunction with streambank stabilization and restoration in the study area.
Crossing Options

- Bridge
- Fair Weather Crossing
- Low Profile Crossing
Low Profile Crossing

Conceptual Plan

Image

Cross Section
Bridge Crossing

Conceptual Plan

Image

Cross Section
<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>Description</th>
<th>Criteria Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYDRAULIC IMPACT</td>
<td>Does the structure cause a rise to the current flood plain elevation?</td>
<td>SCREENING CRITERIA</td>
</tr>
<tr>
<td>ENVIRONMENTAL IMPACT</td>
<td>Level of impact to natural stream flow and stream bed</td>
<td>EVALUATIVE CRITERIA</td>
</tr>
<tr>
<td>ACCESSIBILITY</td>
<td>Level of access to various user groups (including persons with mobility impairments) at various times of the year.</td>
<td>EVALUATIVE CRITERIA</td>
</tr>
<tr>
<td>AESTHETICS</td>
<td>Level of visual impact to the immediate surrounding.</td>
<td>EVALUATIVE CRITERIA</td>
</tr>
<tr>
<td>COST</td>
<td>Is this project under the cost threshold given the project's budget?</td>
<td>SCREENING CRITERIA</td>
</tr>
</tbody>
</table>
# Matrix

## Design Matrix for Crossing Options

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Fair Weather Crossing</th>
<th>Low Profile Crossing</th>
<th>Bridge Crossing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hydraulic Impact</strong></td>
<td>Has no impact to flood elevations. Least amount of stream flow impact.</td>
<td>Has no impact to flood elevations. Has slightly more impact to stream flow than fair-weather crossing. Also has more potential to gather debris.</td>
<td>A bridge set at the bank elevation causes a rise in the flood plain which is not permissible per FEMA and local regulations.</td>
</tr>
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<td><strong>Environmental Impact</strong></td>
<td>Creates the most environmental impact since slab is directly on stream bed. Requires the most significant grading along the approaches to the crossing.</td>
<td>Creates moderate impact since piers are exposed. The base is covered by 1 ft of natural material. Requires moderate grading on the approaches.</td>
<td>Least environmental impact. Avoids stream all together. Bridge footings can be placed along streambanks. Requires minor grading along streambanks.</td>
</tr>
<tr>
<td><strong>Accessibility</strong></td>
<td>Least accessible. Only allows limited crossing during non event times. Will be slippery due to buildup of algae over time.</td>
<td>Moderate accessibility. Will be designed to stay dry for one year events. Will flood during larger events.</td>
<td>Most accessible. Designed to span flood zone.</td>
</tr>
<tr>
<td><strong>Aesthetics</strong></td>
<td>Will have the least visual impact along the stream, but moderate visual impact along the approaches.</td>
<td>Will have moderate visual impact along the stream. Can be kept low to hide most of the structure from houses.</td>
<td>Is the most visual option due to height and size of structure.</td>
</tr>
<tr>
<td><strong>Cost</strong></td>
<td>Least expensive.</td>
<td>Moderately expensive. Construction will involve pre-cast concrete pieces.</td>
<td>Most expensive due to high elevation. Cost is not feasible for this project</td>
</tr>
</tbody>
</table>

## Color "Grading" Chart

- Green = Good
- Yellow = Acceptable
- Orange = Not Desirable
- Red = Not Permissible/ Feasible
Engineer’s Recommended Crossing

• It is KHA’s professional recommendation to proceed forward with a **Low Profile** crossing.
Low Profile Crossing

Conceptual Plan

Cross Section

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Steambank Stabilization/Restoration

Erosive Unstable Stream Banks
- Water Quality and Habitat
- Loss of Property
  - Infrastructure
  - Trees
- Safety
- Aesthetics

- Problem Is Getting Worse
How Do We Fix It?

Potential Solutions

- Bank Stabilization
  - Hard Engineering
    - Rock
    - Concrete block
  - Bio-engineering
    - Stabilize with Vegetation
    - Some Rock Usually Incorporated

- Stream Restoration
  - Natural Channel Design
  - In-Stream Structures
  - “Reference Reach” approach
Rivers and Streams 101

What to expect Saturday...
Project Schedule...Next Steps

• **March 18, 2009** – First Public Information Session

• **April - May**  – Study hydrology, stream bank stabilization and crossing alternatives.

• **May 28th & May 30th**– Second Public Information Sessions

• **June**  – Proceed forward with streambank stabilization/ restoration design and preferred crossing design.

• **August/ September** – 3rd Public Information Session (present final designs)

• **Fall 2009**  – Permitting of designs through agencies
Holmes Run/ Chambliss Crossing Study
Public Information Session
THANK YOU.
Existing Conditions

• Flood Plain Boundary
## Crime Statistics

<table>
<thead>
<tr>
<th>Crime Type</th>
<th>2006</th>
<th>2007*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Destruction of Property/Graffiti</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Trespassing</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Drug Offenses Marijuana Possession</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Drunkenness</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Contributing to Deliquency of a Minor</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Weapon Offense Concealed Weapon</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Liquor Law Violations</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Warrant Service</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>GLA Recovery Out of Town</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Other Criminal Offenses</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16</td>
<td>21</td>
</tr>
</tbody>
</table>

* January 1 - November 30, 2007