Arterial Management Planning – Facilitating Land Development through Corridor Preservation

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What is an Arterial Management Plan?

• Idea is to focus on high-growth corridors

• Work **with localities** to develop corridor management plans
  » Thoroughfare improvements
  » Intersection/interchange improvements
  » Access points and median treatments
  » Interparcel access and connections
  » Operational improvements – signal optimization, triggers for provision/improvement
  » Transportation Demand Management (TDM) strategies
  » Set back requirements, ROW preservation
AMP – Purpose of Study

• **Goals**
  
  » Guide development and transportation decisions along corridor
  
  » Support economic development and vitality of study area
  
  » Maximize transportation system efficiency / safety and minimize public investment required to support local development goals

• **Process**
  
  • Use pilot studies to build a streamlined methodology and approach
    
    • Route 3 – Spotsylvania
    
    • Routes 250 & 623 – Goochland
  
  • Institute an annual work plan for future AMPs
Why is a Transportation Plan Needed?

<table>
<thead>
<tr>
<th>Planned Developments</th>
<th>1 Attack Property</th>
<th>2 West Broad Market</th>
<th>3 GreenGate Property</th>
<th>4 Bacova Property</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipated Build Year</td>
<td>2018</td>
<td>2016</td>
<td>2018</td>
<td>2016</td>
</tr>
<tr>
<td>Type of Development</td>
<td>Mixed-Use</td>
<td>Retail</td>
<td>Mixed-Use</td>
<td>Mixed-Use</td>
</tr>
<tr>
<td>New Daily Trips (veh/day)</td>
<td>14,330</td>
<td>18,310</td>
<td>7,570</td>
<td>8,400</td>
</tr>
</tbody>
</table>

• Example:
  – Growth expanding west along Broad Street
  – Associated recommendations to mitigate traffic impacts:
    » New traffic signals
    » New turn-lanes
    » Extension of existing turn lanes
• Transportation Plan needed to guide County, VDOT, and developers through process to maximize resources
Future Land Use Assumptions

- Developed 2035 Future Traffic Volumes
- Estimated Future Land Use
  - Centerville Village Land Use Plan
  - Input from stakeholders
  - Coordinated with Steering Committee
- Considered Two Land Use Scenarios
  - Lower Intensity
  - Higher Intensity

Results in **110,309** total daily site trips
Methodology

• Project Kick-Off
• Existing (2014) Conditions
  » Operations and Safety
  » Stakeholder interviews
• Future (2035) Traffic Conditions
  » Background growth rates
  » Future land use assumptions
  » Trip Generation
  » Trip Distribution
• Access Management Scenarios
  » Minimally Managed Access
  » Optimally Managed Access
• AMP Recommendations
Current Transportation Issues

• Route 288 at Broad Street Interchange
  » Large turning movement volumes, queuing
  » Pattern of angle crashes
  » Poor level of service, large delays
  » Signing is not clear which ramp to take
  » Poor sight distance from NB approach
Trip Distribution
### Optimally Managed Access Scenario (OMAS)

**MMAS**

<table>
<thead>
<tr>
<th>Intersection Types</th>
<th>Broad Street</th>
<th>Ashland Road</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signalized</td>
<td>6</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Full Movement Unsignalized</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Right-In/Right-Out</td>
<td>22</td>
<td>31</td>
<td>53</td>
</tr>
<tr>
<td>Directional Crossover</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32</strong></td>
<td><strong>39</strong></td>
<td><strong>71</strong></td>
</tr>
<tr>
<td><strong># of Access Points per Mile</strong></td>
<td><strong>19</strong></td>
<td><strong>27</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Number of access points does not include residential driveways

**OMAS**

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<th>Total</th>
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<tbody>
<tr>
<td>Signalized</td>
<td>7</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Full Movement Unsignalized</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Right-In/Right-Out</td>
<td>17</td>
<td>21</td>
<td>38</td>
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<tr>
<td><strong># of Access Points per Mile</strong></td>
<td><strong>16</strong></td>
<td><strong>19</strong></td>
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</tbody>
</table>

- Introduced additional signal on Broad Street
- Eliminated all full movement unsignalized access points
- Reduced total number of access points by 26%

<table>
<thead>
<tr>
<th>Total Number of Conflict Points</th>
<th>% Reduction</th>
</tr>
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<tr>
<td>MMAS 286</td>
<td>OMAS 116</td>
</tr>
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</table>

*Number of access points does not include residential driveways*
Recommendations Toolbox

**Purpose:** To ensure the safety and preserve the capacity of the Commonwealth’s arterial highway network without wide scale roadway widenings.

**Toolbox of Alternatives**

- **Mobility Enhancements**
- **Policy Improvements**
- **Travel Demand Management**
- **Other**

**Recommendations**

- Roadways
- Connectivity
- Access Management
- Interchange
- Intersections
- Travel Demand Management
- Policy

[Image of a toolbox with different categories and subcategories]
Major Roadway Recommendations

• **Widen Ashland Road from 2LU to 4LD**
  » Already in Major Thoroughfare Plan
  » Future volumes suggest 4 Lane demand occurs within 5 – 10 years
  » **Existing Right of Way = 90 to 150 feet**

• **Three-Chopt Road**
  » **Widen from 2LU to 4LD**
    – Upgrade in conjunction with development
    – **Existing Right of Way = Prescriptive**
  » **Extend Across Route 288**
    – Conduct feasibility study of extension
    – Requires further study to determine scope improvements
    – Already in Major Thoroughfare Plan
## Access Management Recommendations

<table>
<thead>
<tr>
<th>Type of Access</th>
<th>Existing Access</th>
<th>Allowed Access Based on VDOT Minimum Spacing Guidance</th>
<th>Proposed Access Based on Optimal Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signalized</td>
<td>3</td>
<td>6</td>
<td>7</td>
</tr>
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<td>11</td>
<td>2</td>
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<td>9</td>
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<td><strong>25</strong></td>
<td><strong>39</strong></td>
<td><strong>18</strong></td>
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Connectivity Recommendations

- Connectivity key to managing traffic on study corridors
- Revise Major Thoroughfare Plan
  - Add 5 proposed connections
    - Utilize full movement access points
  - Remove 1 connection
Interchange Recommendations

Longer Term

- Does not prohibit development within interchange area
- Requires Interchange Modification Report
Other Recommendations

Intersection Recommendations
» Turn Lanes
» Traffic Signals - AMP potential for 11
» Roundabouts

Bike & Pedestrian
» Multi-Use Paths

Park & Ride Lots
» VDOT owned parcel at Route 288 and Broad Street

Transit
» As development occurs
The Final Plan

• AMP Report
  » Summary Plan Sheets
    – Recommendations
    – Planning level cost estimates
    – Sample cross-sections
    – Suggested right-of-way
  » Prioritization of Recommendations
  » Potential funding sources
  » Stakeholders responsibilities
HB2 Process

- Data Driven
- (2) Applications
- Recommended for funding
UPC: New Project #4

Analyze alternatives for interchange of I-64 and Route 623 in Goochland

A detailed Interchange Modification Report is needed to identify viable alternatives for the upgrade of the I-64 interchange at Ashland Road. An IMR must be completed prior to a change in interstate access and must go through a transportation planning process. Work from this IMR will then be incorporated into the other phases of developing interchange improvements and will provide future guidance on how to proceed.

Implementation:
- Rezoning
- Conditional use Permit
- Private Investment
- Funding
AMP Methodology Report

http://www.virginiadot.org/projects/arterial_management_plans.asp

- Procedures for development of future Arterial Management Plans
- Allows process to be replicated
- Includes minimum vs maximum effort strategies to accommodate varying budgets
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