Rt 29 Solutions Hydraulic Planning Advisory Panel

September 28, 2017
Agenda Item 1:  Introductions

Hydraulic Planning Advisory Panel members

Technical Team members
Agenda item 2: Public Interaction and Feedback

Live Streaming
YouTube Views

Sept. 14, 2017

- YouTube Views: 53

- Note – We have changed streaming processes and can no longer provide live-streaming statistics. We will continue to provide the number of times the video has been viewed as of the date of completion of the presentation.
Agenda item 2: Public Interaction and Feedback (continued)

For the period September 14 - September 27, 2017

- None
Agenda item 2: Public Interaction and Feedback (continued)

For the period September 14 - September 27, 2017

Website input

• None
Agenda item 3: Response to Panel Feedback

- Note on SAP plans regarding regional transit hub
- Change title block for transit station to read “Potential Local Transit Hub”
- Additional items for evaluation criteria (environmental impacts, business access, safety, multimodal connectivity)
- Add east side trails and transit station to framework plan graphic
- Relocate concept road near Pepsi
SUMMARY OF DRAFT REPORT REVIEW COMMENTS

Agenda item 4: Phase 1 Study Progress and Work Underway
GENERAL
- ADD LANGUAGE THROUGHOUT REGARDING REGIONAL CONNECTIVITY

TRANSPORTATION
- EXISTING SIGNAL AT LENOX (COSTCO ENTRANCE) ADD LANGUAGE REGARDING PLANNED REMOVAL

TRANSIT
- BRT TRANSIT HUB/STATION ON THE ZAN ROAD BRIDGE
- BUS RAPID TRANSIT NOTES ALONG US 29
- ADDITIONAL LOCAL TRANSIT HUB ON THE NORTHWEST SIDE OF US 29
LAND USE

- NOTE AREA WEST OF HYDRAULIC AND NORTH OF GEORGETOWN IS DESIGNATED AS RURAL AREAS IN THE COUNTY’S CP

- EDGE AREAS: CONSIDER SETBACK FROM ADJOINING USES AS WELL AS BUILDING HEIGHTS AND SCREENING PROVISIONS

- REFERENCE THE NEIGHBORHOOD MODEL, STREETS THAT WORK AND OTHER SMALL AREA PLANS.

- CORE/GENERAL/EDGE AREAS – REFERENCE “NEIGHBORHOOD MODEL” CORE/GENERAL/EDGE SUBZONES.

- MIXED USE /OFFICE & INSTITUTIONAL FACING EACH OTHER ALONG A MAJOR STREET. (CITY SIDE)
BIKE/PED FACILITIES
- DROP THE WIDE SIDEWALKS AND MULTI-USE PATH ON ROUTE 29.

HOUSING
- STATE THE NEED TO PRESERVE AND CREATE MORE AFFORDABLE SINGLE FAMILY DETACHED HOUSING.

PLANNED PROJECTS
- ENCOURAGE TOOLS TO INCENTIVIZE THE PREFERRED URBAN FORM
- REFERENCE THE CITY’S STREETS THAT WORK (STW) TYPOLOGIES FOR MAJOR “FRAMEWORK” STREETS.
Rt 29 Solutions

Agenda item 4: Phase 1 Study Progress and Work Underway (continued)

FRAMEWORK PLANS

- OVERALL FRAMEWORK PLAN. ADD BIKE/PED MULTI-USE TRAIL CONNECTIVITY AND MORE EAST WEST CONNECTIONS
- NOTE THE IMPORTANCE OF A REGIONAL BIKE-PED NETWORK NORTH AND EAST OF THE SAP FOR BOTH RECREATION AND COMMUTING.
- CORE AREA ILLUSTRATIONS & STREET TYPOLOGIES. REFLECT THE DESIGN STANDARDS EMBEDDED IN THE STREETS THAT WORK

TRAILS, PARKS AND OPEN SPACE

- MEADOWS COMMUNITY: ADDITIONAL GREENSPACE
- EMPHASIZE LOCAL BIKE-PEDESTRIAN PATHWAYS SHOULD CONNECT TO A REGIONAL SYSTEM
Agenda item 4: Phase 1 Study Progress and Work Underway (continued)

**IMPLEMENTATION STRATEGIES**

- **REFERENCE EXISTING POLICY DOCUMENTS IN SUPPORT OF A FBC APPROACH**

**CONTENT**

- **CONSIDER DEVELOPMENT BONUSES FOR SHARED OR STRUCTURED PARKING AND AFFORDABLE HOUSING**

**ADMINISTRATION**

- **FORM BASED CODE STANDARDS: ADMINISTRATIVE APPROVALS PROVIDED THE GUIDELINES OR STANDARDS ARE ADHERED TO AND COMMUNITY BENEFITS SUCH AS AFFORDABLE HOUSING ARE PROVIDED**
ADMINISTRATION

- CODE DEVELOPMENT FOR THE HSAP SHOULD CONSIDER TOOLS TO ENCOURAGE THE ON-SITE DEVELOPMENT OF AFFORDABLE HOUSING, SUCH AS HEIGHT BONUSES AND/OR EXPEDITED REVIEWS.
Agenda item 4: Phase 1 Completed and Upcoming Tasks

To be complete by:

- **PROJECT KICK-OFF MEETING**  MAR 9 ✓
- **INITIAL SITE RECONNAISSANCE**  MAR 23 ✓
- **SITE RECONNAISSANCE**  MAR 31 ✓
- **DATA COLLECTION, RESEARCH AND MAP REVIEW**  APR 7 ✓
- **PROJECT BASE MAP DEVELOPMENT**  APR 7 ✓
- **REVIEW OF RELEVANT STUDIES**  APR 7 ✓
- **SITE INVENTORY AND ANALYSIS SUMMARY**  APR 7 ✓
- **BEGIN LAND USE PLAN DEVELOPMENT**  APR 7 ✓
- **CLIENT CHARETTE**  APR 11 ✓
Agenda item 4: Phase 1 Completed and Upcoming Tasks (continued)
To be complete by:

<table>
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<tr>
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<th>Date</th>
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<td>PUBLIC MEETING # 1</td>
<td>APR 26</td>
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<tr>
<td>ALTERNATIVE LAND USE SCENARIOS</td>
<td>MAY 15</td>
</tr>
<tr>
<td>INTERNAL TRANSPORTATION INPUTS</td>
<td>MAY 15</td>
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<tr>
<td>EXTERNAL TRANSPORTATION INPUTS</td>
<td>MAY 15</td>
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<tr>
<td>CONCEPT SCREENING</td>
<td>JUL 14</td>
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<td>EXTERNAL TRANSPORTATION INPUTS</td>
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<tr>
<td>CORE AREA PLAN</td>
<td>AUG 21</td>
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<tr>
<td>PUBLIC MEETING # 2</td>
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<td>DRAFT SMALL AREA PLAN</td>
<td>SEP 15</td>
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Agenda item 4: Phase 1 Completed and Upcoming Tasks (continued)

To be complete by:

- **FINAL SMALL AREA PLAN**: SEP 29
- **PROJECT ABSTRACT**: SEP 29
- **CITY PLANNING COMMISSION/CITY COUNCIL JOINT MEETING**: OCT 10
- **COUNTY PLANNING COMMISSION**: OCT 17 (6 pm)
- **COUNTY BOARD OF SUPERVISORS**: NOV 1
Agenda item 5: Transportation Update
Agenda Item 5: Transportation Update

Progress Since Last Meeting:

- Refined future VISSIM model based on panel feedback
- Tested Scenario 1 transportation improvements
- Generated future operational performance parameters
- Comparison of existing operational performance parameters
- Initiated transit share development
Alternative Concept – Two Lane Roundabouts

- Circular intersections controlled by yielding at entry
- Commonly found with one or two lanes
  - 19 two-lane constructed roundabouts in Virginia
- Geometry of intersection encourages slow travel speeds, reducing severity of crashes
- Yielding reduces wait time compared to stopping or waiting for green-light
- Eliminates maintenance and electricity costs associated with traffic signal

### Roundabouts in Virginia (one or two-lane)

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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<tbody>
<tr>
<td>Number of Planned Roundabouts</td>
<td>90</td>
</tr>
<tr>
<td>Number of Constructed Roundabouts</td>
<td>179</td>
</tr>
<tr>
<td>Total</td>
<td>269</td>
</tr>
</tbody>
</table>

Source: VDOT & FHWA
Agenda Item 5: Transportation Update

Alternative Concept – Two Lane Roundabouts

- Always Yield to vehicles in roundabout
- Always Yield to pedestrians who may be crossing on your approach
- Left turn or U-turn
  - Use approach left lane and stay in lane throughout roundabout
  - Signal turn past the exit prior to your desired exit
- Right-turn
  - Use approach right lane and veer right
  - Signal prior to entering roundabout

Source: VDOT & FHWA
Agenda Item 5: Transportation Update – Scenario 1 Improvements

What’s Changed:

- Grade Separation at US 29 & Hydraulic Rd.
- Roundabouts at Hillsdale Dr. and District Ave. on Hydraulic Rd.
- Grade Separations at Zan Rd. and Angus Rd.
- Relocation of EB 250 ramps to connect with Hillsdale Dr.
**Agenda Item 5: Transportation Update – Scenario 1 Improvements**

### Travel Time Comparison

<table>
<thead>
<tr>
<th>Route</th>
<th>AM Peak</th>
<th>PM Peak</th>
<th>Percent Change</th>
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<tbody>
<tr>
<td></td>
<td>Existing Travel Time (min)</td>
<td>Scenario 1 Travel Time (min)</td>
<td>AM</td>
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<tr>
<td>A to C</td>
<td>3.4</td>
<td>4.0</td>
<td>5.2</td>
</tr>
<tr>
<td>A to E</td>
<td>4.1</td>
<td>4.0</td>
<td>5.6</td>
</tr>
<tr>
<td>B to C</td>
<td>3.6</td>
<td>3.7</td>
<td>4.9</td>
</tr>
<tr>
<td>B to E</td>
<td>4.8</td>
<td>4.3</td>
<td>5.9</td>
</tr>
<tr>
<td>C to A</td>
<td>3.4</td>
<td>2.9</td>
<td>4.4</td>
</tr>
<tr>
<td>C to B</td>
<td>4.4</td>
<td>4.4</td>
<td>6.1</td>
</tr>
<tr>
<td>C to D</td>
<td>2.9</td>
<td>2.5</td>
<td>3.9</td>
</tr>
<tr>
<td>D to C</td>
<td>2.3</td>
<td>2.4</td>
<td>3.6</td>
</tr>
<tr>
<td>D to E</td>
<td>2.9</td>
<td>2.8</td>
<td>4.6</td>
</tr>
</tbody>
</table>

- 5% Decrease or more
- 5% Increase or more

*Multiple ways to get to the same place.*
### Agenda Item 5: Transportation Update – Scenario 1 Improvements

#### Intersection Delay Comparison

<table>
<thead>
<tr>
<th>Intersection</th>
<th>AM Existing Delay (sec)</th>
<th>AM Scenario 1 Delay (sec)</th>
<th>PM Existing Delay (sec)</th>
<th>PM Scenario 1 Delay (sec)</th>
<th>AM % Change</th>
<th>PM % Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>US 29 &amp; Greenbrier</td>
<td>21.3</td>
<td>23.9</td>
<td>28.1</td>
<td>27.8</td>
<td>12.2%</td>
<td>-1.1%</td>
</tr>
<tr>
<td>US 29 &amp; District</td>
<td>3.2</td>
<td>4.6</td>
<td>8.4</td>
<td>12.6</td>
<td>43.8%</td>
<td>50.0%</td>
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<tr>
<td>US 29 &amp; Seminole</td>
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<td>12.4</td>
<td>21.4</td>
<td>20.6</td>
<td>181.8%</td>
<td>-3.7%</td>
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<td>US 29 &amp; Hydraulic</td>
<td>30.4</td>
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<td>70.1</td>
<td>13.7</td>
<td>-54.3%</td>
<td>-80.5%</td>
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<tr>
<td>US 29 &amp; Angus</td>
<td>12.8</td>
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<td>17.4</td>
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<tr>
<td>Hydraulic &amp; US 250</td>
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<td>40.7</td>
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<td>109.5%</td>
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<td>11.8</td>
<td>8.1</td>
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<td>22.6</td>
<td>16.3</td>
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<td>-10.4%</td>
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<tr>
<td>Hydraulic &amp; Georgetown</td>
<td>19.2</td>
<td>26.7</td>
<td>82.9</td>
<td>30</td>
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<td>23.6</td>
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<td>16.1</td>
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<td>-50.0%</td>
<td>1.9%</td>
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Source: CalTrans

#### Graphical Representation:

- **20% Decrease or more**
- **20% Increase or more**

**Level of Service**
- **A**: ≤10
- **B**: 11-20
- **C**: 21-35
- **D**: 36-55
- **E**: 56-80
- **F**: >80

**Delay per Vehicle (seconds)**

Source: CalTrans
Agenda Item 5: Transportation Update – Scenario 1 Improvements

**Intersection Delay Comparison**

<table>
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<tr>
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</table>

**Legend**

- **A**: ≤10 seconds
- **B**: 11-20 seconds
- **C**: 21-35 seconds
- **D**: 36-55 seconds
- **E**: 56-80 seconds
- **F**: >80 seconds

Source: CalTrans

**20% Decrease or more**

**20% Increase or more**
Agenda Item 5: Transportation Update – Scenario 1 Improvements PM
Agenda Item 5:  Transportation Update – Scenario 1 Improvements AM
### Agenda Item 5: Transportation Update – Example Alternative Evaluation

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<tr>
<th>Project Alternatives</th>
<th>Basis of Comparison</th>
<th>Change in Inter-Section Delay AM/PM</th>
<th>Potential R/W &amp; Utility Needs</th>
<th>High Level Project Cost</th>
<th>Connectivity Across US 29</th>
<th>Percent Build Out Supported</th>
<th>Environmental Impacts</th>
<th>Business Access Impacts</th>
<th>Bike/Ped &amp; Transit Mobility</th>
<th>Safety</th>
<th>Additional Pros</th>
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<tr>
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Agenda item 6: Review of Upcoming Phase 1 and 2 Tasks

To be complete by:

**Phase 1**

FINAL SMALL AREA PLAN  SEP 29
PROJECT ABSTRACT  SEP 29

**Phase 2**

REFINE SCENARIO 1 VISSIM MODEL  OCT 12
AGREE ON MODAL SHARE ASSUMPTIONS  OCT 12
TEST ADDITIONAL MULTI-MODAL SCENARIOS  OCT 26
Agenda Item 7: Panel open discussion and request for future agenda items

Potential Future Meeting Dates (2\textsuperscript{nd} and 4\textsuperscript{th} Thursdays)

<table>
<thead>
<tr>
<th>Date</th>
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<tr>
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<td>Mar. 8, 2018</td>
<td>July 26, 2018</td>
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Agenda Item 8: New business and wrap up

Agenda item 9: Adjourn
Rt 29 Solutions Hydraulic Planning Advisory Panel

September 28, 2017