PUBLIC WORKSHOP

Route 123 and Braddock Road Conceptual Interchange and Interim Improvement Study

March 4, 2009
Agenda

- Purpose of Today’s Workshop
- Purpose of This Study
- Traffic Operations Summary
- Conceptual Interchange Options
- Interim Intersection Improvement Options
- Questions
Purpose of Today’s Workshop

 To solicit public comment on current study alternatives
  • To review existing and proposed traffic operations at the intersections within the study limits
  • To review / receive comment on the current interchange alternatives developed for the project
  • To discuss near-term improvement options to the Braddock Road and Rt. 123 intersection (with no required Right-of-Way)
  • To discuss future improvement options to the Braddock Road and Rt. 123 intersection (with required Right-of-Way)

 To provide information on funding options
  • No funding available for design and construction of the project
  • Project is not qualified for economic stimulus package

 To continue the public dialogue on this study
Purpose of This Study

- The Braddock Road/Route 123 intersection is currently failing and will only get worse in the future.
- An interchange at this location is included in the County Transportation Plan.
- As development pressures mount, preservation of Right-of-Way for an ultimate interchange configuration is needed.
- To preserve the “right” Right-of-Way, a preferred interchange configuration needs to be selected.
- This study is focused on selecting that preferred configuration.
- If feasible, near-term improvements to the intersection are identified, study possible implementation.
Existing Conditions
Traffic Operations Summary

Existing Traffic Conditions

- Traffic count data was collected in 2008
- Directional traffic flows:
  - Traffic is heavier going north and east during the morning
  - Traffic is heavier going south and west during the evening
- Route 123 / Braddock Rd. intersection operates at LOS F during peak periods
  - Morning peak delay: Wait more than 1 cycle to pass through the intersection
  - Evening peak delay: Wait 3+ cycles to pass through the intersection
- Braddock Rd. / Roanoke River Rd. intersection operates at LOS F during the evening peak
  - Need more than 2 cycles to pass through intersection
Year 2015 No Build Traffic

◆ Route 123 at Braddock Road Intersection:
  - Projected 15% increase in AM peak hour traffic volume
  - Traffic growth would result in 84% increase in AM peak hour delay
  - Projected 10% increase in PM peak hour traffic volume
  - Traffic growth would result in 44% increase in PM peak hour delay
  - Current PM peak hour delay is significantly worse than AM peak
  - Drivers would an additional cycle to pass through the intersection (AM / PM)

◆ Braddock Road at Roanoke River Road Road Intersection
  - Projected 24% increase in AM peak hour traffic (16% PM)
  - Growth would result in 21% increase in AM peak hour delay
  - PM peak congestion at Route 123 would queue traffic on Braddock Road WB beyond the Roanoke River Road intersection
Traffic Operations Summary

Year 2030 No Build Traffic

◆ Route 123 at Braddock Road intersection:
  - Projected 34% increase in AM peak hour traffic from 2008
  - AM peak hour delay would triple due to traffic growth
  - Projected 22% increase in PM peak hour traffic from 2008
  - PM peak hour delay would increase by 51% due to traffic growth

◆ Braddock Road at Roanoke River Road intersection:
  - Projected 50% increase in AM peak hour traffic (31% PM)
  - AM peak hour delay would increase by 30% due to traffic growth
  - PM peak congestion at Route 123 would queue traffic on Braddock Road WB beyond the Roanoke River Road intersection
Feasibility Study Design Criteria

- Route 123 design speed = 50 MPH (Posted 45 MPH)
- Braddock Road design speed = 45 MPH (Posted 40/45 MPH)
- Ramp design speed = 40 MPH
- Minimize uncontrolled access along corridor
- Improve traffic operations (LOS E or Better)
- Respect cultural / historic resources / utilities
- Minimize Right-of-Way acquisition
- Minimize utility relocations
- Minimize traffic impacts during construction
Feasibility Study Approach

Route 123 Typical Sections

Existing typical section

Proposed typical section (south of Braddock Road)
Feasibility Study Approach

Braddock Road Typical Sections

Existing typical section

Proposed typical section (east of Route 123)
Alternative Evaluation Criteria

- Right-of-Way impact
- Impact to existing access points
- Construction duration
- Traffic disruption during construction
- Estimated construction cost (2009 dollars)
Summary of Interchange Alternatives Considered

- Alternative 1 - Diamond Interchange
- Alternative 5 - Modified Diamond Interchange
- Alternatives 9 and 10 - Single Point Urban Interchange
- Alternative 9T - Tight Single Point Urban Interchange
Alternative 1 – Diamond Interchange

- Four ramps run along Route 123
- Provides non-stop flow for traffic on Route 123
- Route 123 raised to bridge over Braddock Road
- Braddock Road stays at existing elevation
- Two traffic signals located on Braddock at end of ramps
- Intersections operate at LOS C or better in the peak periods in 2030 with a delay of 20.3 sec/veh
- Moderate construction duration
Alternative 1 – Diamond Interchange
Similar Interchange Location

DIAMOND INTERCHANGE
Fairfax County Parkway over Leesburg Pike

PROJECT LOCATION
Rte. 123 at Braddock Road
Existing Diamond Interchange

Fairfax County Parkway over Leesburg Pike
Existing Diamond Interchange

Fairfax County Parkway over Leesburg Pike
Similar Diamond Interchange

Fairfax County Parkway over Leesburg Pike
Alternatives Considered

Alternative 1 - Diamond Interchange

North Hill Community

Braddock Forest Community

Ox Rd / Rte 123

Braddock Rd

GMU Hotel Site Under Construction

Rte 620

University Mall

Artist’s Rendering
Alternatives Considered

Alternative 1 – Diamond Interchange

Artist’s Rendering

PUBLIC WORKSHOP PRESENTATION - Route 123 and Braddock Road
Alternative 5 – Modified Diamond Interchange

- Similar to Alternate 1 Diamond – Northeast quadrant ramp modification
- Three ramps run along Route 123 and one loop ramp on GMU property
- Provides non-stop flow for traffic on Route 123
- Route 123 raised to bridge over Braddock Road
- Braddock Road stays at existing elevation
- Two traffic signals located on Braddock Road at end of ramps
- Intersections operate at LOS C or better in the peak periods in 2030 with a delay of 25.7 sec/veh
- Moderate construction duration
Alternative 5 – Modified Diamond Interchange

PUBLIC WORKSHOP PRESENTATION - Route 123 and Braddock Road
Alternative 9 – Normal Single Point Urban Interchange (SPUI)

- Four ramps run along Route 123
- Provides non-stop flow for traffic on Route 123
- Route 123 raised to bridge over Braddock Road
- Braddock Road stays at existing elevation
- One traffic signal located on Braddock at intersection of all four ramps
- Intersection operates at LOS C or better in the peak periods in 2030 with a delay of 25.5 sec/veh
- Shortest construction duration
Alternative 9 – Normal SPUI
Similar Interchange Location

PROJECT LOCATION
Rte. 123 at Braddock Road

NORMAL SPUI
Gallows Road over US 50
Existing Normal SPUI

Gallows Road over US 50
Similar Normal SPUI

Gallows Road over US 50
Similar Normal SPUI

Gallows Road over US 50
Alternatives 9T – Tight SPUI

- Four ramps run along Route 123
- Provides non-stop flow for traffic on Route 123
- Route 123 raised to bridge over Braddock Road
- Braddock Road stays at existing elevation
- One traffic signal located on Braddock at intersection of all four ramps
- Intersection operates at LOS C or better in the peak periods in 2030 with a delay of 25.5 sec/veh
- Shortest construction duration
Alternatives 9T – Tight SPUI
Similar Interchange Location

**TIGHT SPUI**
Fairfax County Parkway over Elden St. / Baron Cameron Ave.

**PROJECT LOCATION**
Rte. 123 at Braddock Road
Existing Tight SPUI

Fairfax County Parkway over Elden St. / Baron Cameron Ave.
Similar Tight SPUI

Fairfax County Parkway over Elden St. / Baron Cameron Ave.
Similar Tight SPUI

Fairfax County Parkway over Elden St. / Baron Cameron Ave.
Alternatives Considered

Alternative 9T - Tight SPUI
Alternatives Considered

Alternative 9T – Tight SPUI

Artist’s Rendering

Rt. 123

Braddock Rd.
Alternative 10 – Normal SPUI

- Four ramps run along Braddock Road
- Provides non-stop flow for traffic on Braddock
- Elevation of Braddock Road lowered
- Route 123 stays at existing elevation and bridges over Braddock Road
- One traffic signal located on Route 123 at intersection of all four ramps
- Intersection operates at LOS C or better in the peak periods in 2030 with a delay of 28.9 sec/veh
- Longest construction duration
Alternative 10 – Normal SPUI
Alternatives Considered

Alternative 10 - Normal SPUI

Braddock Forest Community

GMU Hotel Site Under Construction

Rte 620

North-Hill Community

Ox Rd / Rte 123

University Mall

Artist’s Rendering

PUBLIC WORKSHOP PRESENTATION - Route 123 and Braddock Road
Alternatives Considered

Alternative 10 - Normal SPUI
Summary of Interim Intersection Improvements

- Near-Term improvements with no Right-of-Way required
- Future improvements with Right-of-Way required
Near-Term Improvements (No Right-of-Way Required)

◆ Route 123 / Braddock Intersection
  • Add 2nd left turn lane on NB and combine right turn lane with thru lane
  • Add 2nd left turn lane along SB approach
  • Extend EB left turn storage area

◆ Braddock / Roanoke River Intersection
  • Add separate SB left turn lane
  • Provide separate NB left, thru, and right turn lanes
  • Extend EB left turn storage area
  • Close WB left turn into western-most mall entrance
Near-Term Improvements (No Right-of-Way Required)

- Route 123 at Braddock Road intersection:
  - Would still operate at LOS during AM & PM peak periods
  - Compared to No-Build,
    - AM peak hour delay reduced by 51%
    - PM peak hour delay reduced by 46%
    - During the AM peak, drivers would wait 5 minutes to pass through this intersection (PM peak 9 minutes)

- Braddock Road at Roanoke River Road intersection:
  - Would operate at LOS D during the AM peak and LOS F during the PM peak
  - Compared to No Build,
    - AM peak hour delay reduced by 15%
    - PM peak hour delay reduced by 72%
    - During the PM peak, drivers would wait about 5 minutes to pass through this intersection
Interim Improvements

Near-Term Improvements (No Right-of-Way Required)
Interim Improvements

Future Improvements (Right-of-Way Required)

- Route 123 / Braddock Intersection
  - Add 3rd thru lane on all approaches
  - Add 2nd left turn lane along NB, SB, and WB approaches

- Braddock / Roanoke River Intersection
  - Add 3rd thru lane on EB and WB approaches
  - Add 2nd left turn lane on WB approach
  - Add separate SB left turn lane
  - Provide separate NB left, thru, and right turn lanes
  - Close WB left turn into western-most mall entrance
Future Improvements (Right-of-Way Required)

- **Route 123 at Braddock Road intersection:**
  - Would operate at LOS D during the AM peak (LOS F during PM)
  - Compared to No-Build,
    - AM peak hour delay reduced by 93%
    - PM peak hour delay reduced by 89%
    - During both peak periods, most drivers would make it through the intersection in one cycle

- **Braddock Road at Roanoke River Road intersection:**
  - Would operate at LOS C during the AM peak (LOS F during PM)
  - Compared to No-Build,
    - AM peak hour delay reduced by 59%
    - PM peak hour delay reduced by 94%
    - During both peak periods, most drivers would make it through the intersection in one cycle
Interim Improvements

Future Improvements (Right-of-Way Required)