



Route 250 Bypass Interchange at McIntire Road Evaluation of Interchange Concepts May 1, 2006

Note: Additional study and evaluation will be required as traffic data collection and analysis is completed. All concepts will require evaluation for functionality and level of service for design year traffic volumes (2030). This analysis has not yet been completed.

Concept A (No-Build / Baseline): This concept reflects the proposed extension of McIntire Road (VDOT Project: U000-104-102, C-501) and serves as the baseline for consideration of all interchange concepts. The proposed improvements will provide a 17-lane signalized at-grade intersection at McIntire Road and the Route 250 Bypass.

Concept B: This concept provides a partial cloverleaf (parclo) with ramps and loops in the NW and SE quadrants with impacts to the rescue squad and the Vietnam Veterans Memorial. This option would also force eastbound traffic to Park Street to use the roundabout.

Concept B1: This concept modified Concept B by providing a diamond interchange on the south side of Route 250 resulting in somewhat more direct access for eastbound traffic to Park Street. In addition to the impacts noted for Concept B, this concept also impacts the wooded hillside in the SW quadrant. Pedestrian access under the SE ramp may be problematic due to grade issues. Direct access from Hillcrest Road to the Bypass would be eliminated.

Concept C: This concept provides a diamond interchange with two roundabouts and impacts all four quadrants (rescue squad, Vietnam Veterans Memorial, 2 wooded hillsides, stone wall in NE quadrant) and would require traffic to/from Park Street to use the roundabouts. Pedestrian access would be circuitous and require underpasses at all four ramps. Direct access from Hillcrest Road to the Bypass would be eliminated. This option may allow the rescue squad room to relocate on to the property currently occupied by the skate park.

Concept C1: This concept modifies Concept C by eliminating the spacing between the two roundabouts – resulting in a “figure eight” -type configuration. Anticipated impacts are similar to Concept C but the overall footprint of the interchange is reduced, direct access from Hillcrest Road to the Bypass would be eliminated. This option may allow the rescue squad room to relocate on to the property currently occupied by the skate park.

Concept C2: This concept is similar to Concept C but has shifted the alignment of McIntire Road to the east. This realignment improves constructability and slightly reduces impacts to the NW and SW quadrants but also increases impacts in the NE and SE quadrants. Room to relocate the rescue squad is reduced by the realignment of McIntire Road.

Concept D: This concept proposes a tight-urban-diamond type configuration with a single (larger) roundabout. This concept reduces the overall footprint of the interchange but will still impact all four quadrants and require

traffic to/from Park Street to travel through the roundabout (more directly than double roundabout concepts). This concept may allow the relocation of the rescue squad onto the current skate park location. Because of the tight diamond configuration the feasibility of pedestrian access under the ramps and the bypass is more of an issue than with other concepts and may require consideration of a pedestrian overpass in the vicinity of Hillcrest Road. Direct access to the Bypass from Hillcrest Road would be eliminated with this concept.

Concept D2: This concept is similar to Concept D except that McIntire Road has been realigned slightly to the east to facilitate construction of the proposed improvements. Impacts and issues are essentially the same as with Concept D, room to relocate the rescue squad is reduced by the realignment of McIntire Road.

Concepts E, E1 and E2: These concepts provide various iterations of a more traditional parkway type interchange.

Concept E proposes a parclo configuration with impacts in NW (Vietnam Veterans Memorial) and SE (rescue squad) quadrants and requires eastbound traffic to Park Street to use the roundabout. Pedestrian access is relatively simple and straight forward.

Concept E1 shifts the ramps and loops to the NE and SW quadrants to avoid the memorial and rescue squad but impacts the wooded hill sides. Eastbound traffic can access Park Street via the existing ramp but traffic from Park Street to westbound Route 250 will have to travel through the roundabout. Due to the realignment of McIntire Road in this concept the rescue squad will have to be relocated.

Concept E2 realigns McIntire Road to the east and places the interchange ramps and loops on the west side. Pedestrian access is relatively straight forward however would require a lengthy underpass to provide access under the Bypass on the west side of the interchange. Viability of the current rescue squad location is somewhat questionable with this concept but access may be possible at the southern roundabout.

Concept F: This concept proposes a signalized Single Point Urban Interchange (SPUI) which is similar to the tight-diamond interchange proposed in Concept D. Anticipated impacts and issues are similar with pedestrian access being the most critical concern.

Concept G: This is the only concept that proposes to take McIntire Road over the Bypass. This concept provides a tight-diamond design with signalized ramps above grade to McIntire Road. Impacts are to all four quadrants and access issues are similar to those outlined in similar concepts. There may be room to relocate the rescue squad to the current location of the skate park, the Vietnam Veterans Memorial would be impacted by the proposed ramp in the NW quadrant.