

SHOCKOE VALLEY STREETS IMPROVEMENTS

Roundabout White Paper

Date: January 14, 2019

Oliver Hill Option 1 (June 2018)

Purpose and Need is to provide improved access to the neighborhood while calming traffic and providing improved pedestrian and bicycle facilities throughout the project area.

Option 1 is a one-lane roundabout with a bypass lane to bring I-95 off ramp traffic directly to Broad Street. The roundabout has three approach legs with center located near gore of the I-95 off ramp. A split in the off ramp allows I-95 exiting traffic to select the bypass lane to Broad Street or to enter the circulatory roadway with the ability to exit east on Venable, north on a new two-way Oliver Hill Way or to two-way 18th Street.

PROs:

- Provides bypass lane for I-95 off ramp.
- Provides access directly into the neighborhood.
- Curve radii for the bypass lane from the off ramp results correspond to a design speed of approximately 27 mph, at the lower end of allowable design speeds in VDOT Standard GS-R, but is still acceptable.
- Maintains the original street grid as closely as possible with the addition of roundabouts while converting one-way streets to two-way streets.

CONs:

- The roundabout requires partial to full takes of Lovings Produce, Commonwealth Martin Building (DPC owned) and the ROWVA Properties, as well as a required realignment of Venable Street west of 18th Street.
- Southbound Oliver Hill Way yields to the I-95 ramp spur into the roundabout, creating an unexpected merge condition (See Location A).

RIGHT OF WAY ACQUISITION COSTS:

- Total takes of Lovings Produce, the Commonwealth Martin (DPC) and ROWVA properties are possible. Anticipated cost of \$4,800,000 per the 01/01/2019 City of Richmond assessments.

RESULTS:

- Option was rejected for impacts of Lovings Produce, the Commonwealth Martin (DPC), and ROWVA properties.
- Option is potentially the most expensive due to three possible total takes.
- This Option is no longer under consideration.



Oliver Hill Option 2 (July 2018)

Purpose and Need is to provide improved access to the neighborhood while calming traffic and providing improved pedestrian and bicycle facilities throughout the project area.

Option 2 consists of a one-lane roundabout without a bypass lane for I-95 off ramp traffic. All I-95 exiting traffic must traverse a least half of a one-lane roundabout. The roundabout has three approach legs with center aligned with Venable Street and is located approximately 25-feet west of I-95 off ramp. Build 1 provides the traffic analysis supporting this option.

PROs:

- Provides access directly into the neighborhood.
- Curve radii for the bypass lane from the off-ramp results correspond to a design speed of approximately 27 mph, at the lower end of allowable design speeds in VDOT Standard GS-R, but is still acceptable.
- Minimal impacts to ROWVA Property and changes access to Commonwealth Martin (DPC). Total take required for the Lovings Produce property.
- Minor grading and/or retaining walls are required to match existing grade.
- Minimizes the risk to rail operations west of Lovings Property.
- Retains existing alignment of Venable Street in relation to the roundabout.

CONS:

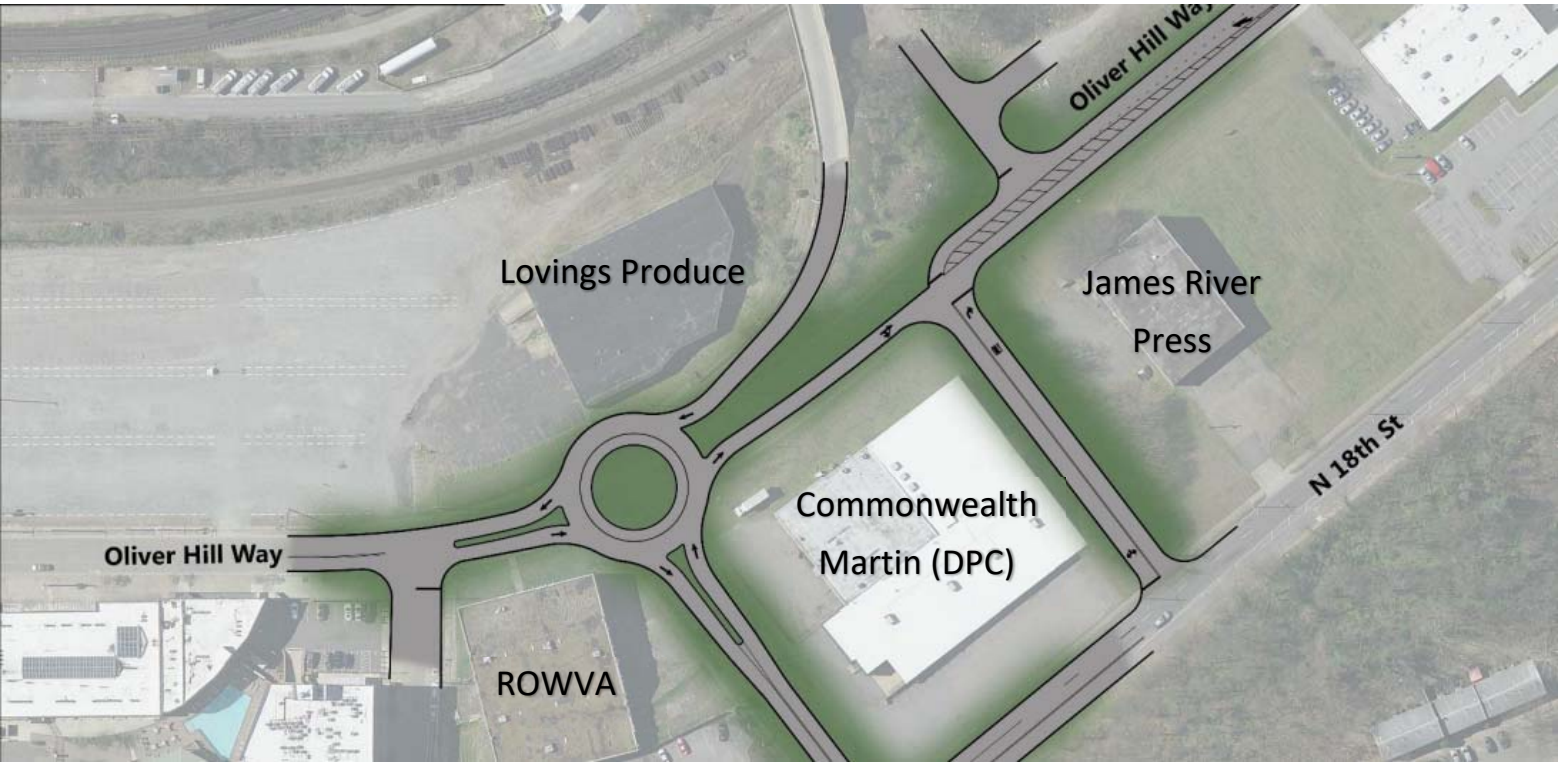
- To accommodate traffic conditions throughout the entire street network, the single-lane ramp entry to the roundabout is insufficient to accommodate traffic demand, and traffic backs up onto I-95.
- Median between roundabouts at Oliver Hill Way and 18th Street reduces accessibility of the ROWVA and Commonwealth Martin (DPC) properties.
- Diverts from the traditional street grid in this neighborhood by severing Oliver Hill Way and reducing the neighborhood feel as desired by the users.

RIGHT OF WAY ACQUISITION COSTS:

- Total takes of Lovings Produce is anticipated. Anticipated cost of \$879,000 per the 01/01/2019 City of Richmond assessments.

RESULTS:

- Option was rejected due to traffic backing up onto I-95, which is an unacceptable condition.
- New access street between Oliver Hill Way and 18th Street causes disconnect for Oliver Hill Way through traffic and awkward access to points towards Broad Street.
- Option is potentially the least expensive due to a total take of Lovings Produce, which is the property appraised at the lowest value. Very minimal impacts on the Commonwealth Martin (DPC) and ROWVA properties.
- This Option is no longer under consideration.



Oliver Hill Option 3 (September/October 2018)

Purpose and Need is to provide improved access to the neighborhood while calming traffic and providing improved pedestrian and bicycle facilities throughout the project area.

This option is a one-lane roundabout with five approach legs and is paired with a hybrid one-lane/ two-lane roundabout at Venable Street and 18th Street. It maintains the existing ramp as a bypass lane (see Location A) for I-95 off ramp traffic directly onto Broad Street. A split in the off ramp allows I-95 exiting traffic to select the bypass lane to Broad Street or to enter the circulatory roadway with the ability to exit east on Venable, north on a new two-way Oliver Hill Way or to two-way 18th Street. Build 2 provides the traffic analysis supporting this option.

PROs:

- Minimizes risk of traffic backing up onto I-95 main line.
- Provides access directly to the neighborhood.
- Eliminates impacts on ROWVA and Lovings properties.
- The resulting green space from the elimination of existing Venable Street provides opportunity for landscaping and a neighborhood feel.
- Operates more efficiently than Option 1 and Option 2.

CONs:

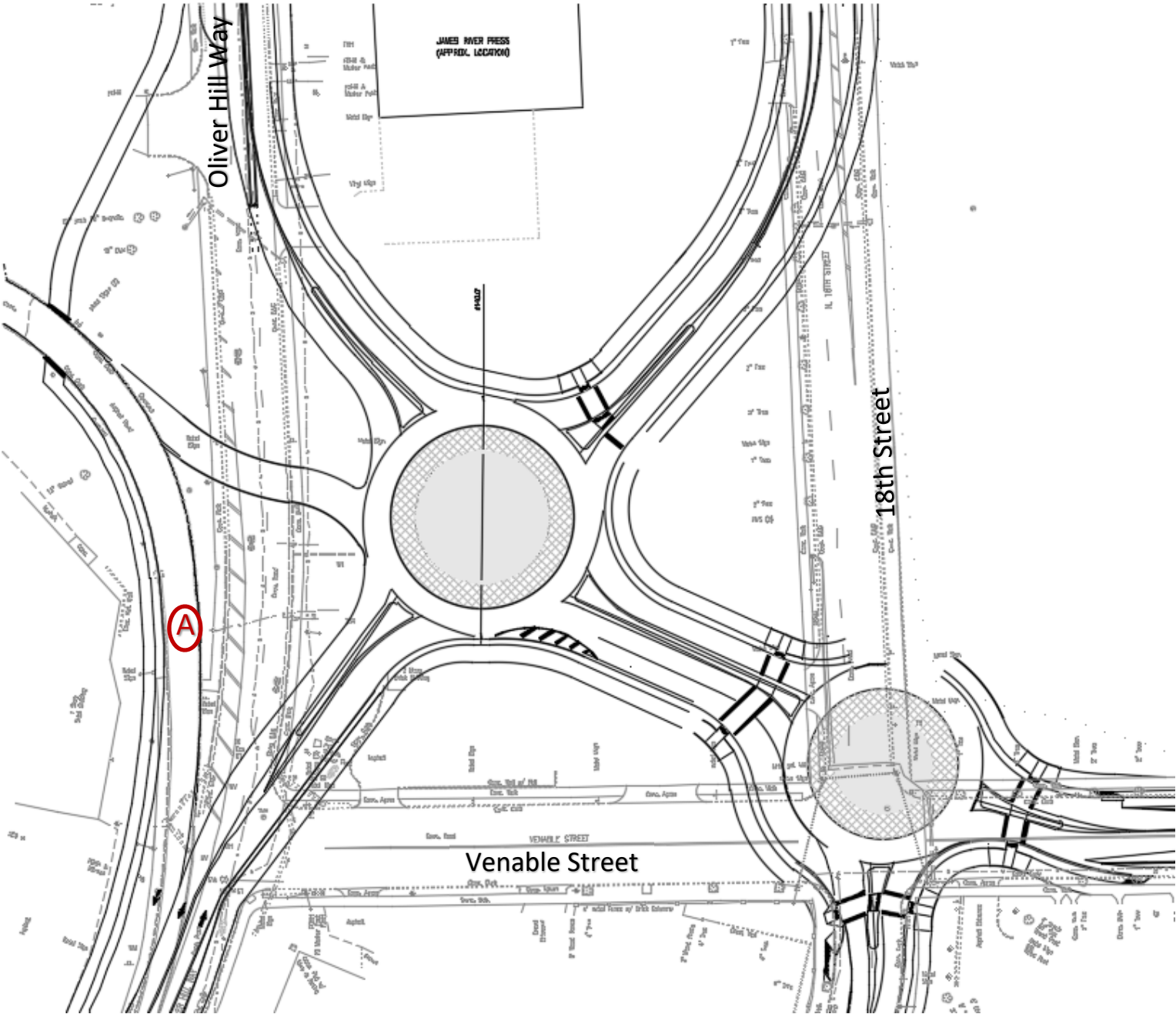
- Complex roundabout with five approaches and several closely spaced entries and exits.
- Full take of Commonwealth Martin (DPC) warehouse property.
- Partial take of James River Press property to provide access to Oliver Hill Way.
- Configuration results in a change to the existing street grid and vehicular access at this location.

RIGHT OF WAY ACQUISITION COSTS:

- Total take of Commonwealth Martin (DPC) property is required. Anticipated cost of \$2,497,000 per the 01/01/2019 City of Richmond assessments.

RESULTS:

- Option is total take of only the Commonwealth Martin (DPC) property and has very minimal impacts to the Lovings Produce and ROWVA properties.
- Satisfies the project goals without a negative impact to I-95 traffic.
- This Option is no longer under consideration.



Oliver Hill Option 3A (November 2018)

Purpose and Need is to provide improved access to the neighborhood while calming traffic and providing improved pedestrian and bicycle facilities throughout the project area.

Same as Option 3 except for reducing the roundabout at Venable / 18th Street to a single-lane in all quadrants (See Location B). This Option further refines the Build 2 Option to remove the second lane in the Venable Street/ 18th Street roundabout.

PROs:

- Same as Option 3, plus;
- At the Venable Street/18th Street roundabout, this Option was reduced to a single lane roundabout with one entry and exit in all directions, improving pedestrian and bicycle mobility through the area.
- This refinement of Build 2 maintains acceptable operations within the network.

CONS:

- Same as Option 3

RIGHT OF WAY ACQUISITION COSTS:

- Total take of Commonwealth Martin (DPC) property is required. Anticipated cost of \$2,497,000 per the 01/01/2019 City of Richmond assessments.

RESULTS:

- Option is currently active and in development.
- Provides a single lane roundabout at Venable Street and 18th Street.
- Option is total take of only the Commonwealth Martin (DPC) property and has very minimal impacts to the Lovings Produce and ROWVA properties.
- Satisfies the project goals without a negative impact to I-95 traffic.

