

Braddock • King • Quaker Study

for the City of Alexandria, Virginia

Public Meeting



Vanasse Hangen Brustlin, Inc. 

Wednesday, October 8, 2008

Purpose of Meeting



- Summary of Comments from First Public Meeting
- Review Scope of Study & Schedule
- Present Concepts Developed to Date
- Obtain Feedback

Study Schedule



	April	May	June	July	August	September	October	November	December	January
Existing Conditions Analysis	■	■								
Future Alternatives Testing			■	■	■					
Conceptual Design					■	■	■	■	■	
Documentation									■	■
Public Meetings			1				2			3

Conceptual Build Alternatives



- Alternative 1 : Short term spot improvements
 - Braddock Rd, King St and Quaker Ln
 - King St, Dearing/Wakefield St
- Alternative 2 : Remove Braddock Rd segment between Quaker Ln and King St
- Alternative 3 : Remove Quaker Ln segment north of Braddock Rd and divert the traffic onto Radford St

Conceptual Build Alternatives



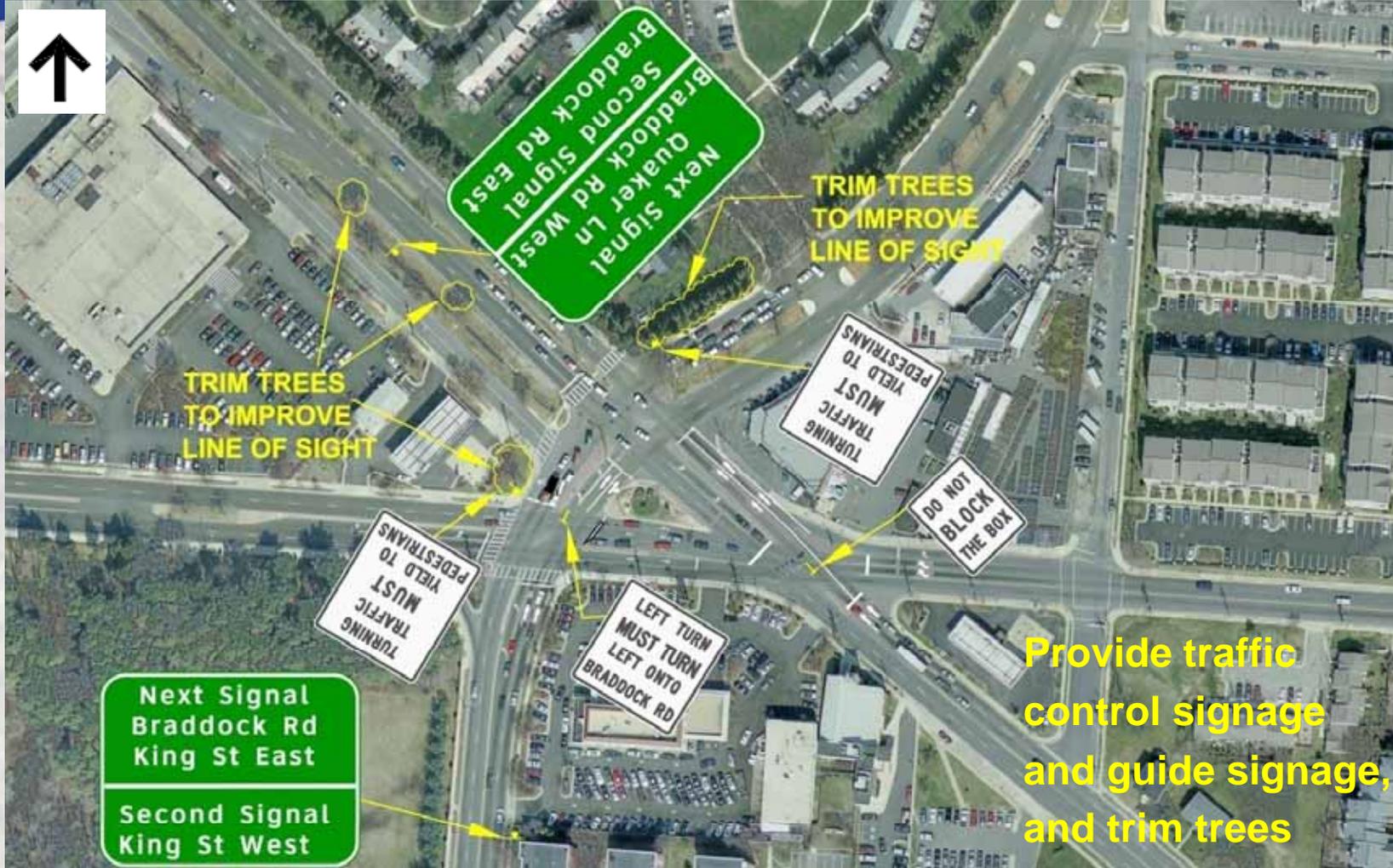
- Alternative 3b : Same as Alternative 3 with eastbound dual left at Braddock Rd and Radford St intersection
- Alternative 4 : Quaker Ln (southbound) and Radford St (northbound) functioning as one way pair
- Alternative 5a : Modified roundabout at King St, Braddock Rd and Quaker Ln

Conceptual Build Alternatives

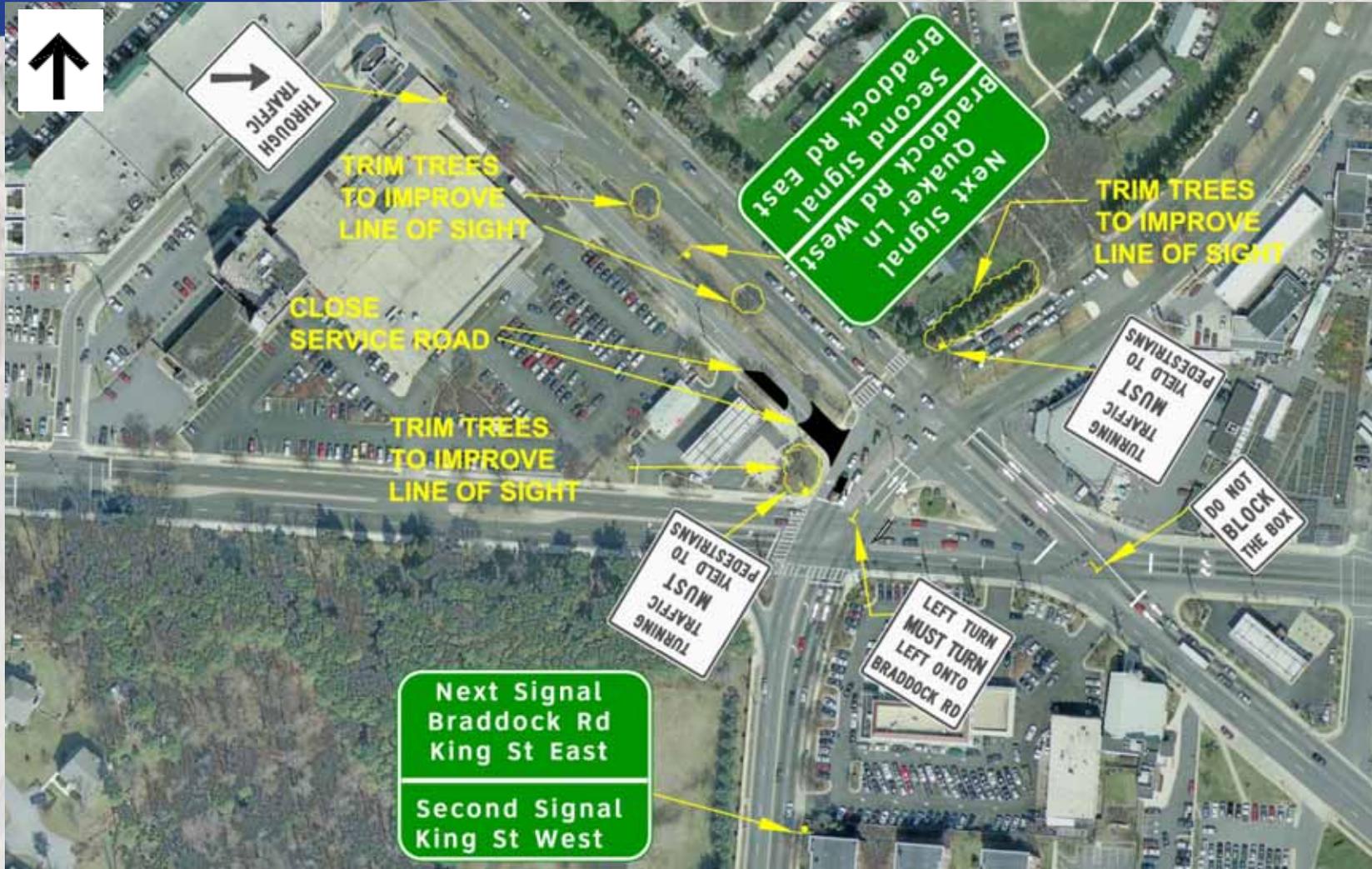


- Alternative 5b and 5c : Modified small and large circular roundabouts at King St, Braddock Rd and Quaker Ln
- Alternative 6 : Grade-separation, depress Braddock Rd under Quaker Ln and King St
- Transit Center
- Road Diet

Short Term Improvements (Service Rd Open)



Short Term Improvements (Service Rd Closed)



Short Term Improvements

- Improvements to Service Road at the intersection of King St at Dearing / Wakefield St
 - Relocate signage
 - Re-stripe roadway



2020 Baseline Conditions



Signalized Intersection Location	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
	LOS	Delay/veh (sec)	LOS	Delay/veh (sec)	LOS	Delay/veh (sec)
King Street/Taylor Street	B	18.2	B	18.4	F	85.7
King Street/Quaker Lane	E	78.9	F	212.2	F	92.2
King Street/Braddock Road	D	41.6	F	95.2	F	110.4
King Street/Kenwood Street	B	15.1	B	13.6	B	13.4
Braddock Road/Marlee Way	A	5.4	A	7.1	A	6.1
Braddock Road/Quaker Lane	F	85.8	E	70.6	D	45.2
Braddock Road/Kenwood Street	B	19.3	B	12.4	B	10.7
Quaker Lane/Seminary Road/ Janneys Street	F	82.8	E	78.7	C	27.8
Quaker Lane/Duke Street	D	51.3	D	44.2	C	28.7

Conceptual Alternative 2



Remove Braddock Rd segment between Quaker Ln and King St

Conceptual Alternative 2



- **Pros**

- Improves traffic operations during PM and Saturday peak hour conditions at intersection of King St/Quaker Ln and King St/Braddock Rd
- No ROW acquisition required and relatively easy to implementation
- Reconfiguration does not impede pedestrian mobility and safety
- Minor improvements would reduce number of movements which could improve vehicular safety

- **Cons**

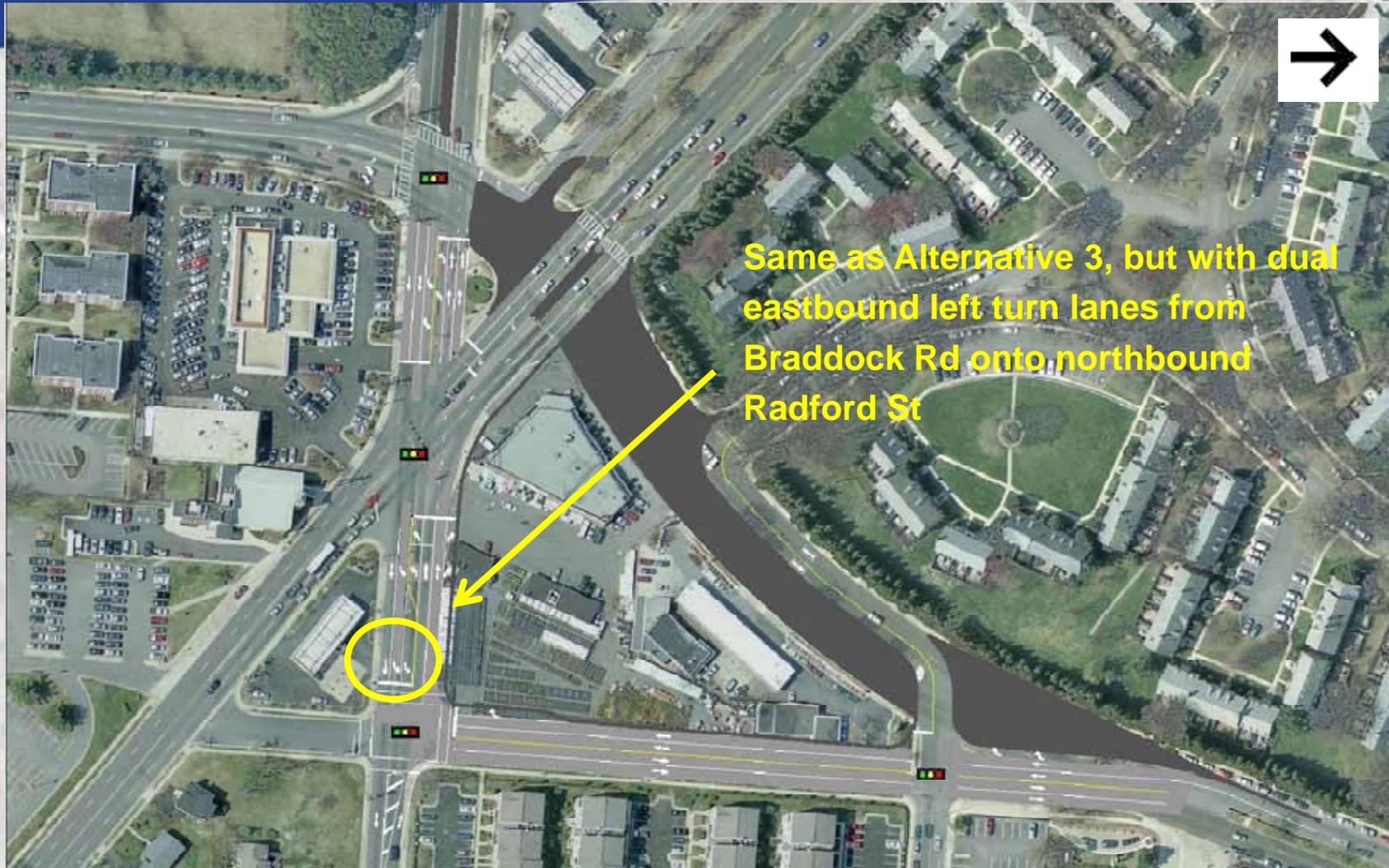
- Traffic operations at Braddock Rd/Quaker Ln would be set to hold traffic so that segment prior to King St will not block intersection – results in longer queue
- Potential spill-back at turn bays due to heavy diverted volume
- Reduces accessibility to the business affected by the section of Braddock Rd that is closed
- Rerouting could increase driver confusion due to multiple turn movements over a short distance

Conceptual Alternative 3



- Remove Quaker Ln segment north of Braddock Rd and divert the traffic onto a widened Radford St
- Additional signal required at Braddock Rd/Quaker Ln North (formerly Radford St)

Conceptual Alternative 3b



Same as Alternative 3, but with dual eastbound left turn lanes from Braddock Rd onto northbound Radford St

Conceptual Alternative 3 & 3b



- **Pros**

- Reconfiguration does not impede pedestrian mobility, reduces number of cross walks by one, improves safety
- Reducing access to service road would reduce number of crashes

- **Cons**

- Does not improve traffic operations at most of the study intersections during all three peak hours
- Minor ROW acquisition to allow for widening of Radford St
- Wayfinding somewhat confusing for the diverted traffic that used to travel along Quaker Ln especially trips using 36th St since they have to divert to Radford St
- Some traffic's travel distance increase to access Radio Shack Building

Conceptual Alternative 4



Quaker Ln (southbound) and Radford St (northbound) functioning as one way pair

Conceptual Alternative 4



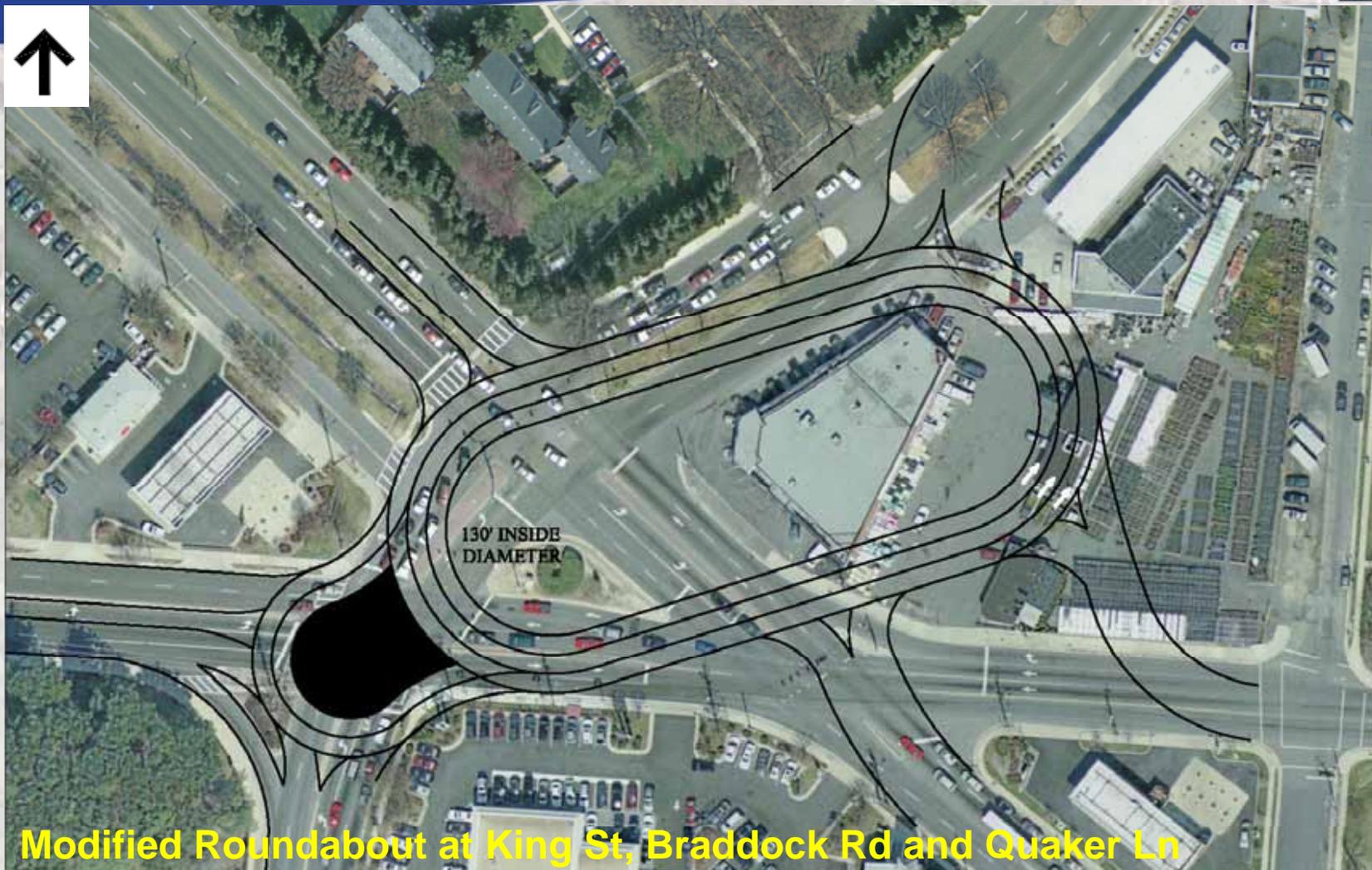
- **Pros**

- Improve traffic operations at most of the study intersections during all time periods except at King Street/Braddock Road during AM Pk Hr conditions
- Less potential conflict points due to one way operations at some streets
- Reconfiguration would provide shorter crosswalks therefore improving mobility and safety for pedestrians

- **Cons**

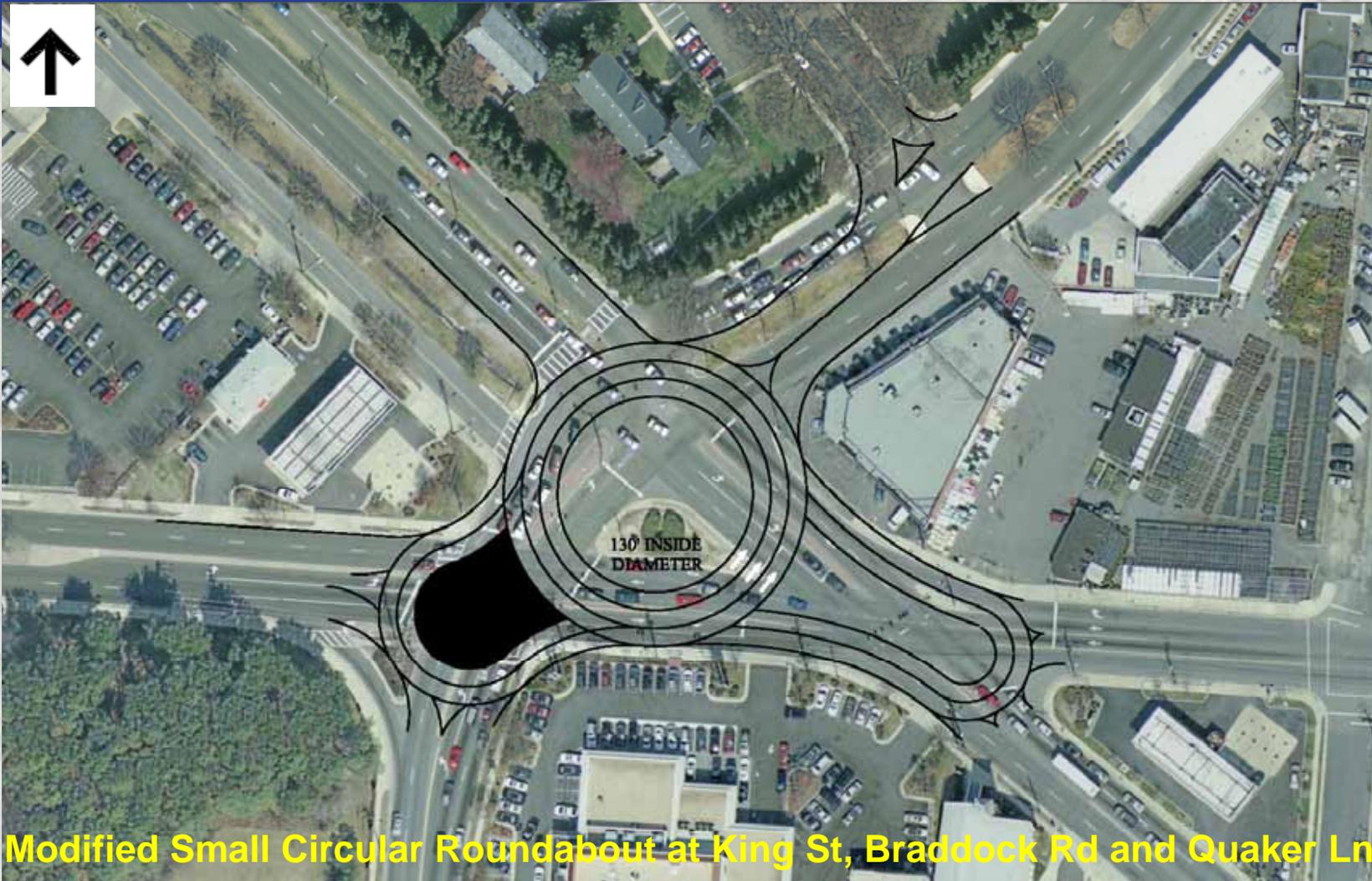
- Increased travel distance for some vehicles to reach some landuse
- Wayfinding could be confusing to traffic that is rerouted due to one-way operations. Additional signage will be needed.
- Minor ROW acquisition to allow for widening of Radford St
- Potential impacts to property use at school

Conceptual Alternative 5a



Modified Roundabout at King St, Braddock Rd and Quaker Ln

Conceptual Alternative 5b



Modified Small Circular Roundabout at King St, Braddock Rd and Quaker Ln

Conceptual Alternative 5c



Modified Large Circular Roundabout at King St, Braddock Rd and Quaker Ln

Conceptual Alternative 5



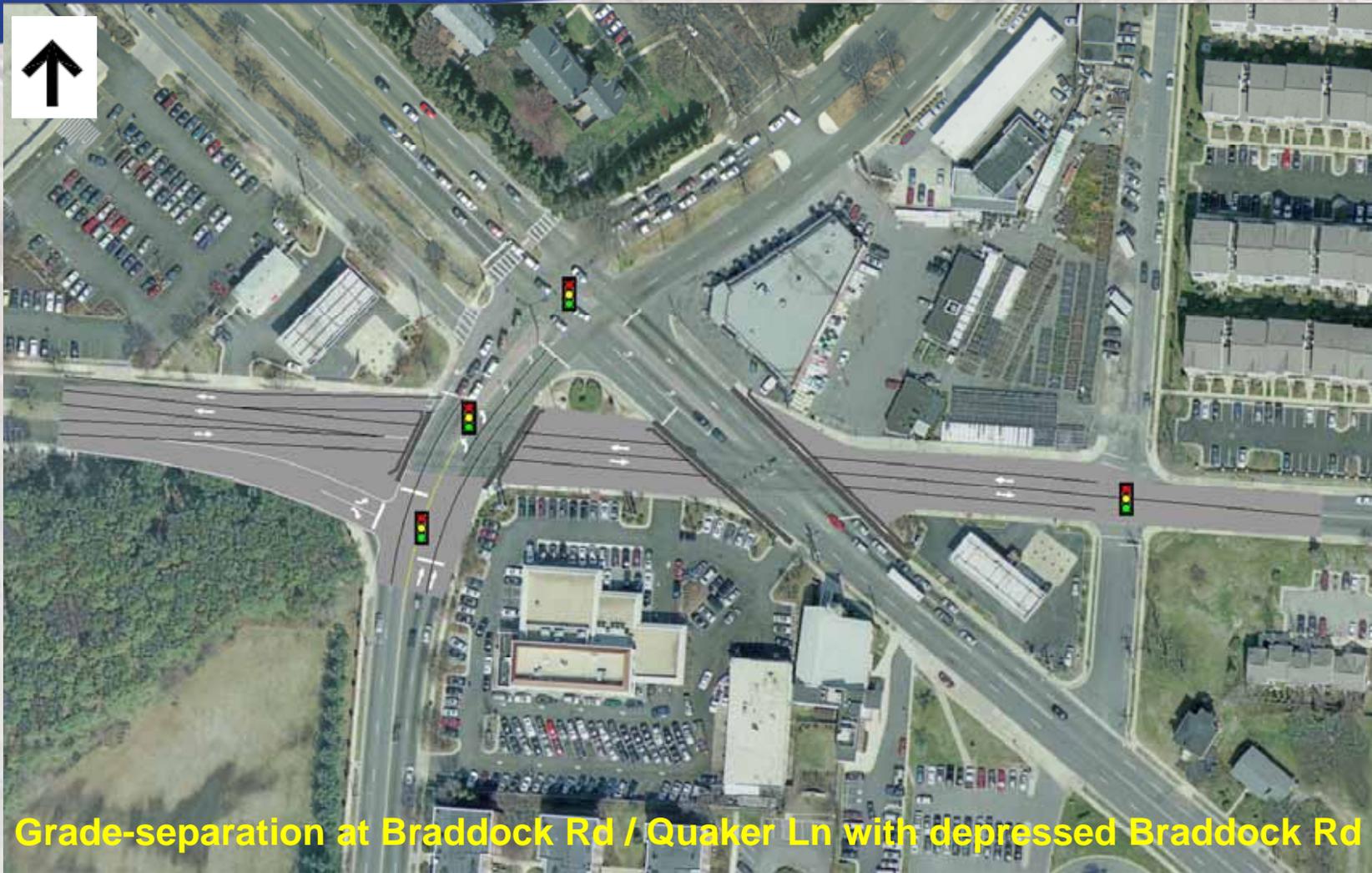
- **Pros**

- Eliminates need for signalized intersections

- **Cons**

- With the anticipated heavy traffic along the roundabout, yielding merge maneuver would experience increased delay
- Extensive ROW acquisition and complete reconfiguration of the BKQ area would be required
- Wayfinding would be confusing and potential risk of increase in number of crashes with the roundabout configuration
- Pedestrian flow would be negatively impacted since there will be no protective pedestrians phases, and increase travel distance around roundabouts

Conceptual Alternative 6



Grade-separation at Braddock Rd / Quaker Ln with depressed Braddock Rd

Conceptual Alternative 6



- **Pros**

- Improvement in traffic operations is limited
- Reducing number of intersections would improve vehicular safety

- **Cons**

- Reduces accessibility to business affected by the depressed section of Braddock Rd
- Could impact Radford St depending on final configuration, including bus operation from school
- Reconfiguration would require relocation of crosswalks along Quaker Ln and could add confusion to pedestrians

Conceptual Alternative 7



Conceptual Alternative 7



- **Pros**

- Would slow traffic down
- Roadway widths will be reduced for pedestrians and this would provide shorter crosswalks

- **Cons**

- Negative impact for traffic operational performance as travel distance and travel time would increase
- Add confusion to drivers, as vehicles have longer complex routing patterns and introduces weaving areas
- Unsafe at some locations

Transit Center and Service Road Improvement



Road Diet: Before



Augusta Drive, Loudoun County



Road Diet: Proposed



Augusta Drive, Loudoun County



Summary of Findings



- Among the five mid to long term Conceptual Alternatives, Conceptual Alternative 4 would benefit most in terms of reducing delay at multiple intersections at Braddock Rd, King St, and Quaker Ln
- Improvements to the transit system would need to be made in conjunction with any proposed changes to the roadway geometry

Next Steps



- Detail Analysis
 - Operating Analysis
 - Cost Analysis
- Complete Report
- Public Meeting #3