

City of Takoma Park TAKOMA JUNCTION REDEVELOPMENT PROJECT

Carroll Avenue (MD 195)

Ethan Allen Avenue (MD 410)



TRAFFIC ANALYSIS PRESENTATION



Project Overview

- Traffic Study for the Takoma Junction Redevelopment Project
- > Six (6) Tasks for Evaluation
 - > Task #1 Level of Cut-Through Traffic Determination (8 Intersections)
 - > Task #2 Intersection Capacity Analyses (4 Intersections)
 - > Task #3 Review Previous Intersection Design Concept Options Prepared by AMT
 - > Task #4 Intersection Reconfiguration Concept Designs
 - > MD 195 and Ethan Allen Avenue (MD 410)
 - > MD 195 and Grant Avenue
 - > Task #5 Preliminary Design Concepts for Bicycle and Pedestrian Safety Improvements
 - > MD 410 between Jackson Avenue and Sycamore Avenue
 - > MD 195 between MD 410 (Ethan Allen Avenue) and Columbia Avenue
 - > Task #6 Feasibility Study of Semi-Tractor Trailer Access along Sycamore Avenue and/or Columbia Avenue



Residential Cut-Through Traffic

Defined as "vehicular traffic passing through a residential area without stopping or without at least an origin or destination within the area."

-Code of Virginia (2012) by The State of Virginia



AMT

Task #1

TIME (Hourly)	EB	WB	
6:00AM	0	1	
7:00AM	0	0	28.
8:00AM	0	1	T R
9:00AM	0	0	
10:00AM	0	0	
11:00AM	0	0	4.55
12:00 Noon	1	0	
1:00PM	1	1	1
2:00PM	0	0	
3:00PM	1	0	
4:00PM	1	0	2
5:00PM	5	0	Te
6:00PM	1	1	
Total	10	4	

Google Earth

Winchester Ave MD 410 at Woodland Avenue MD 410 at Sycamore Avenue MD 410 at Jackson Ave al Sycamore Avenue imbia Aven Columbia Aven, e at Polar Avenue **Task 1: Cut-Through Intersections Studied** 1. MD 195 at Columbia Avenue Columbia Avenus at Hickory Avenue 2. Columbia Avenue at Pine Avenue MD 195 at Columbia Avenue 3. Columbia Avenue at Hickory Avenue Columbia Avenue at Pine Aven 4. Columbia Avenue at Polar Avenue 5. Columbia Avenue at Sycamore Avenue 6. MD 410 at Sycamore Avenue 7. MD 410 at Woodland Avenue 8. MD 410 at Jackson Avenue Cut-Through Route (EB & WB)

600 f



13-Hour Traffic Volumes along Columbia Avenue:





Critical Lane Volume Methodology

- Sketch Level Planning Tool Utilized by MDOT SHA and Planning Agencies
- Dependent Upon the Number of Approach Lanes and
 Opposing Left Turns
- Used for Level of Service Calculations on Isolated Intersections
- Based Upon a Volume to Capacity Ratio of
- > 1,600 Vehicles/Hour

> Urban Areas: Level of Service <u>D</u> is Acceptable





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Task #2



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Task #3

Review Previous Intersection Design Concepts

- > Eight (8) concepts studied as part of SHA D-3 traffic report submitted August, 2015, two (2) options were recommended:
 - > If MD 195 is not re-aligned, close Sycamore Avenue to traffic.
 - > If MD 195 is re-aligned, close Sycamore Avenue and Grant Avenue to traffic
- > Four (4) concepts studied as part of SHA D-3 traffic report submitted November, 2016, two (2) options were recommended:
 - > If MD 195 is not re-aligned, close Sycamore Avenue to traffic.
 - > If MD 195 is re-aligned, close Sycamore Avenue to traffic



- Task #4 Intersection Reconfiguration Concept Designs
 - > MD 195 and Ethan Allen Avenue (MD 410)
 - > MD 195 and Grant Avenue
- > Option 1: Grant Avenue closed to traffic
- > Option 2a: Re-align MD 195 opposite to Sycamore Avenue with Grant Avenue open to traffic
- > Option 2b: Re-align MD 195 opposite to Sycamore Avenue with left turns into Grant Avenue prohibited.
- Option 3: Re-align MD 195 opposite to Sycamore Avenue with no left turns into Grant Avenue and Sycamore Avenue and no exit from Sycamore Avenue

Note: All analysis conducted with the All-Red pedestrian phase.



Option 1: Grant Avenue closed to traffic (AM Peak Hour)



LOS (Delay)

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Option 1: Grant Avenue closed to traffic (PM Peak Hour)



LOS (Delay)



Option 1: Pros and Cons



Pros:

> Does not involve geometric changes and impacts to existing ROW.

Cons:

> Vehicles wanting to access Grant Avenue will have to detour to neighboring roads which will increase their travel time.

Option 2a: Realign MD 195 (AM Peak Hour)



LOS (Delay)

AMT

Option 2a: Realign MD 195 (PM Peak Hour)



TASK#4



Option 2a: Realign MD 195



Pros:

- > This creates a more traditional 4-legged intersection.
- > Approx. 9,400 S.F of green space will be available on the northwest corner of the realigned intersection.
- > The same number of metered on-street parking will be provided with the proposed alignment.

Cons:

- Involves geometric changes which will impact existing ROW and may involve relocation of existing utilities and bus stops
- Parcel on the NW quadrant will be impacted. GIS Parcel data shows 6,072 S.F. Estimated impact will be approx. 3,320 S.F



Option 2b: Realign MD 195+LT into Grant prohibited (AM Peak Hour)





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Option 2b: Realign MD 195+LT into Grant prohibited (PM Peak Hour)



LOS (Delay)

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Option 2b: Realign MD 195+LT into Grant prohibited (PM Peak Hour)



Pros:

- > This creates a more traditional 4-legged intersection.
- > Reduces no. of signalized intersections from three (3) to two (2).
- > Approx. 9,400 S.F of green space will be available on the northwest corner of the realigned intersection.
- > The same number of metered on-street parking will be provided with the proposed alignment.

Cons:

- Involves geometric changes which will impact existing ROW and may involve relocation of existing utilities and bus stops
- Parcel on the NW quadrant will be impacted. GIS Parcel data shows 6,072 S.F. Estimated impact will be approx. 3,320 S.F
- > With left turns into Grant Ave. closed, vehicles will have to detour to neighboring roads.



Option 3: AM Peak Hour



LOS (Delay)

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Option 3: PM Peak Hour





Option 3: PM Peak Hour



Pros:

- > The EB and WB traffic on MD 410/MD 195 is no signalized reducing delays and queues.
- > The number of signalized intersections is being reduced from three (3) to two (2).
- > The SB RT turning traffic, heavy volume in AM peak hour, will be free flow reducing queues and delays.
- > The same number of metered on-street parking will be provided with the proposed alignment.

<u>Cons:</u>

- Involves geometric changes which will impact existing ROW and may involve relocation of existing utilities and bus stops.
- > Parcel on the NW quadrant will be impacted.
- > Exit from and left turns onto Sycamore Ave. as well as, left turns into Grant Ave will be closed resulting in vehicles detouring into neighborhood roads resulting in more travel time.



Task #5:

Pedestrian and Bicycle Safety:

- Develop design concepts for the incorporation of bicycle and pedestrian safety improvements along Ethan Allen Avenue (MD 410) between Jackson Avenue & Sycamore Avenue and along MD 195 between Ethan Allen Avenue (MD 410)and Columbia Avenue
- Identify options for possible relocation of existing bus stops along MD 410 and MD 195









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Task #6:

Evaluate Truck Accessibility:

 Investigate the feasibility of trucks (semi-tractor trailers) to be able to access Sycamore Avenue and/or Columbia Avenue to perform their deliveries for the future Takoma Park Food C-op located along the south side of MD 410 just west of Sycamore Avenue.























Proposed Bus Stop Relocation – Existing Conditions





Proposed Bus Stop Relocation – Realigned Conditions



- Approx. 9400 S.F. of green space will be available with MD 195 realignment.
- The parcel is 6072 S.F. based on GIS Parcel data. Estimated impact will be approx. 3320 S.F.
- The same number of metered on-street parking will be provided with the proposed alignment as in the existing conditions.



Questions?

