

## **TAKOMA JUNCTION TRAFFIC STUDY RECOMMENDATIONS**

### **TAKOMA PARK SAFE ROADWAYS COMMITTEE**

#### **Background**

As part of the redevelopment process for the city's Takoma Junction lot, the project developer NDC and SORG Architects agreed to fund a traffic study of the intersection. A traffic study is consistent with the Takoma Junction Task Force's goal of evaluating "current conditions in Takoma Junction...." Because of the importance of this intersection for all Takoma Park residents, the Safe Roadways Committee recommends that the City Council conduct a comprehensive traffic study even if it means sharing the cost with the developer.

It is important to develop a complete understanding of the transportation dynamics of the Takoma Junction area at present, as well as predictions for the future. While the City has access to general bus ridership and traffic count numbers (see appendix),



the City does not have accurate, recent counts of persons traveling by all transportation modes, nor has it considered prediction models of what changes will result from new development. Without this data, the city will be unable to best plan the Junction's infrastructure development to equitably serve all different users of the transportation network.

The Safe Roadways Committee recommends that the City include the following parameters in a comprehensive traffic study before developing the City Lot at the Takoma Junction:

#### **Recommended Traffic Count Parameters**

- Motor vehicle throughput at each intersection leg (including turn distribution) for each day of the week, including weekends;
- Bicycle counts for each day of the week, showing where bicycles enter and exit, whether or not they are on sidewalks, and whether or not the rider is presumably an adult or child;
- Total pedestrian counts for each day of the week, showing where pedestrians enter and exit the Junction, counts of crossings against signals or by jaywalking, whether they are adults or children, and the number of individuals using wheelchairs;
- A count of illegal passes by motor vehicles and a list of the locations of the illegal passing;
- A count of the number of bus passengers boarding and disembarking at the stops within the Junction for each day of the week, noting the bus route number

(this information can be provided by WMATA and Ride On and may not need to be counted by the traffic study contractor);

- A count of the number of buses and taxis for each day of the week;
- A count of the number of Capital Bikeshare users utilizing the station at the Junction for each day of the week, and a count of the number of Capital Bikeshare bicycles passing through the Junction (note that bike station usage data for traffic study periods could be requested from Capital Bikeshare and the City already receives monthly usage data);
- An hourly breakdown of traffic counts for all of the above listed modes of transportation;
- A count of the number of heavy load vehicles passing through the Junction daily;
- The study should be conducted when Montgomery County schools are in session to get an accurate and complete count of normal traffic conditions. Additionally, the study should be completed before the Carroll Ave. Bridge project begins to establish a baseline with normal traffic flow patterns unaltered by significant road construction.

The engineering firm that the City, NDC, and/or SORG Architects contracts with should have its own methodology for a traffic study. The Safe Roadways Committee also recommends utilizing the manual "[Conducting Bicycle and Pedestrian Counts](#)," which serves as an industry-standard blueprint for the methodology of conducting a traffic study for all users of a street. The Safe Roadways Committee requests that a scoping meeting with the contractor include Safe Roadways Committee personnel, and an exit interview similarly be included and Safe Roadways Committee personnel be allowed to participate.

### **Recommended Intersection Computer Simulations**

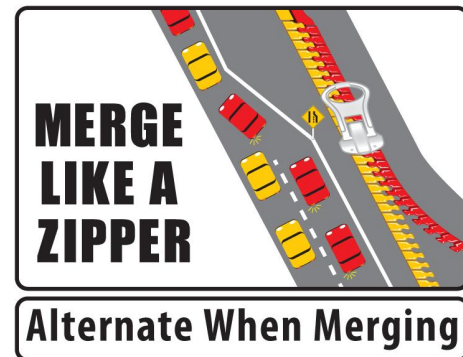
After traffic count data is collected, the contractor should establish baseline throughput numbers for the existing intersection configuration. Those numbers should be compared to simulations of alternative intersection configurations that have been previously proposed for the Junction, including:

- The [Carroll Avenue realignment](#) proposed by local architect Eric Saul (see page 6).
- The mini-roundabout proposed by Barbara Muhlbacher, member of the Takoma Junction Task Force (see pages 7 & 8). The mini-roundabout should be considered both with and without a pedestrian-crossing signal that would stop traffic at the roundabout. The roundabout center would be hardscape (likely



brick other elegant paving surface so that trucks with long trailers or long emergency vehicles may navigate the small roundabout. This design is common where sufficient space does not exist to create a full-sized roundabout. A larger roundabout, such as the one proposed about a decade ago by State Highways would require significant intersection reconfiguration and received significant community opposition.

- The current intersection alignment with elimination of all motor vehicle traffic controls (signals and stop signs). Simulation should only have stop lights that activate for pedestrian crossing. Other than that, all signals would be in yellow flashing mode in all directions with signs designed to encourage “zipper” traffic flow (see image at right).
- The current intersection alignment with stop signs at each intersection approach.
- The current intersection with various levels of increased traffic, representing possible future development scenarios, including the scenarios of (1) zero and (2) .5 space for each projected apartment in the new development, and (3) any increases in motor-vehicle, pedestrian and bicycle traffic based on the new development on the city lot. Traffic scenarios should represent lowest and highest number of parking spaces for City Lot development.



It is important for the City to understand all options for City Lot development, including possible alternative intersection configurations, alternate ingress and egress locations for the development, and the impacts on each leg of streets entering and exiting the intersection. When considering the above intersection configurations, the contractor should specifically study automobile traffic into and out of the proposed Junction parking lot development. Which entrance and exit configurations work best with each of the above intersection designs should also be considered. The contractor should consider entrances and exits both on the Ethan Allen/Carroll/Philadelphia side of the property, and car entrances and exits on the Columbia Ave. side of the property.

As part of these simulations, the impact on the immediate Takoma Junction intersection, as well as the intersection in front of the fire station (intersection of 410 and Carroll Ave.) should also be considered. The contractor should make recommendations on possible changes needed to that intersection if the Takoma Junction intersection were to change.

### **Recommendations of Info Required from Traffic Survey Contractor**

Once these simulations are completed, the contractor should issue the following recommendations:

- Any changes to the intersection design that would help improve the intersection for all users, specifying which sets of community members are benefited by which

improvements. Priority should be given, in descending order to: (1) people who walk; (2) people who bicycle; (3) transit users; and (4) drivers of motorized vehicles.

- The “best” intersection configuration(s) given the specified parameters, documenting the pros and cons of each intersection configuration specified above.

### **Conclusion**

The City should require, during negotiations for development, that the developers contract with a traffic engineer to conduct the study. The engineering firm hired must have software to simulate different intersection configurations, and the engineer should have expertise on the different intersections configurations being simulated. If the developer is unwilling or unable to conduct this study, the City itself should conduct or contract out the same project. Cost sharing with the developer may be necessary to ensure we receive comprehensive data that can be used for future Junction improvements.

With this complete traffic count study and set of recommendations in hand, the City will be able to prioritize transportation improvements for one of Takoma Park’s most crucial hubs for transportation and commerce.

Respectfully submitted,

Takoma Park Safe Roadways Committee

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Joe Edgell, Ward 2 (Chair)

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Sheryl Gross-Glaser, Ward 1

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## Appendix: Junction Traffic and Mass Transit Ridership Statistics

The Junction is served by the WMATA F4 bus, and Montgomery County Ride On bus routes 12, 13, and 16. These bus lines carry over 12,000 people on an average weekday. Capital Bikeshare added a station at the Junction in 2014, and numerous pedestrians frequent the area to get to destinations throughout Takoma Park. There are also 10,000 vehicles that pass through on Carroll Avenue and MD 410 daily.

The following table presents average daily ridership for the bus routes that operate through the Junction on either MD 410 or Carroll Ave. Note that average daily ridership exceeds 12,000 on weekdays. For reference, compare this number to SHA's traffic volume counts - average annual daily traffic on MD 410 is between 8,000 and 11,000 vehicles through the Junction, and average traffic on Carroll Avenue is between 10,000 and 12,000 vehicles. Note that in 2009 the National Household Travel Survey found that average vehicle occupancy for all types of trips was 1.67, so those cars carried between a minimum of 13,360 people on MD 410 and a maximum of 20,040 people on Carroll Avenue daily.

Bus Route	Average 2014 Weekday Ridership	Average 2014 Saturday Ridership	Average 2014 Sunday Ridership
WMATA F4	7283	5040	3014
Ride On 12	1771	1250	1226
Ride On 13	250	n/a	n/a
Ride On 16	3338	3101	2379
Total Ridership	12642	9391	6619
Note: the WMATA F4 ridership numbers average data from May 2014 alone; the Ride On data are 2014 annual averages.			

Note that these ridership numbers do not guarantee an accurate count of the number of persons that actually travel through the Junction on buses. Many individuals could complete their bus trips on these routes without passing through the area; however, the Junction is a major node at roughly the center of all four routes, so these numbers are indicative of the bus traffic through the area. As the Junction develops, it has an two excellent advantages due to this high bus network density: visibility on already well-traveled bus routes, and great accessibility for employees.

### Sources:

Montgomery County Ride On bus ridership:

[http://www.montgomerycountymd.gov/council/Resources/Files/agenda/cm/2015/150424/20150424 TE1.pdf](http://www.montgomerycountymd.gov/council/Resources/Files/agenda/cm/2015/150424/20150424_TE1.pdf)

WMATA bus ridership: <http://www.wmata.com/pdfs/planning/2014-05%20Bus%20Ridership.pdf>

MD SHA traffic counts: [http://sha.maryland.gov/Traffic\\_Volume\\_Maps/montgomery.pdf](http://sha.maryland.gov/Traffic_Volume_Maps/montgomery.pdf)

Conducting Bicycle and Pedestrian Traffic Counts:

[http://media.metro.net/projects\\_studies/call\\_projects/images/metroscag\\_bikepedcounttrainingmanual.pdf](http://media.metro.net/projects_studies/call_projects/images/metroscag_bikepedcounttrainingmanual.pdf)

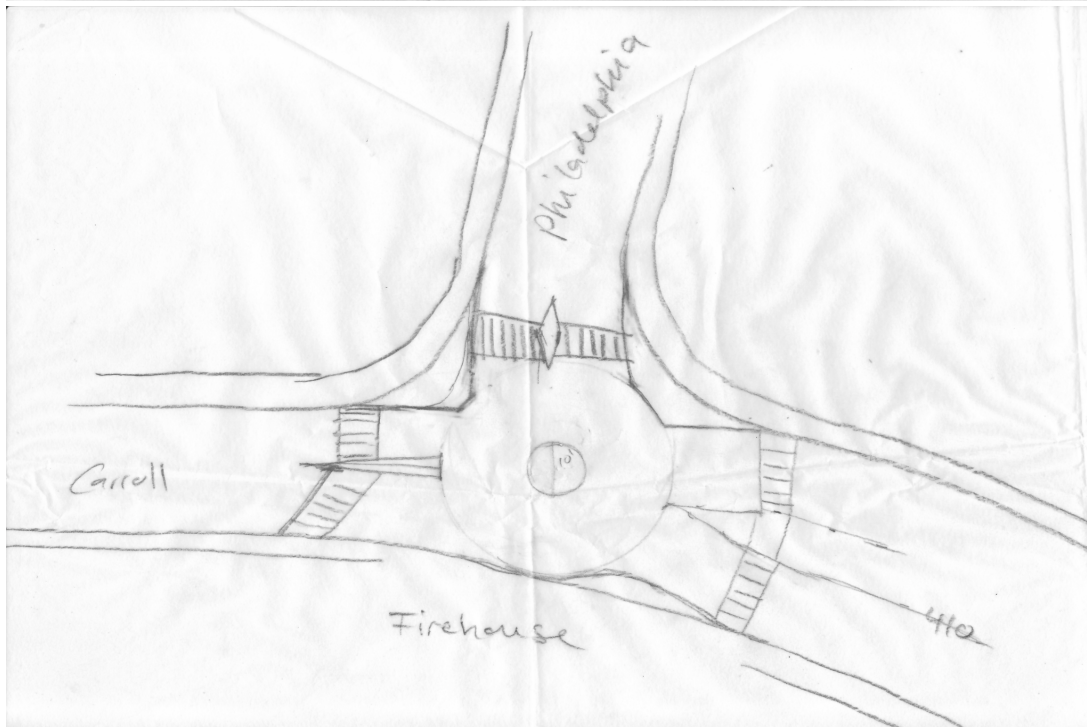
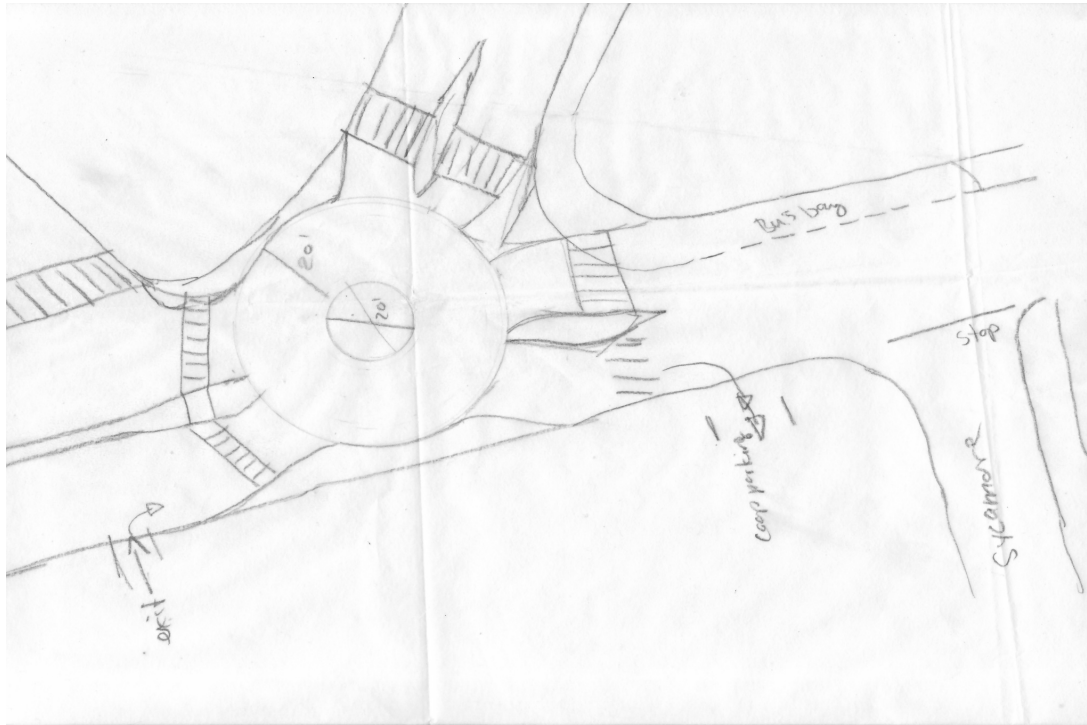
Average Vehicle Occupancy data: <http://nhts.ornl.gov/2009/pub/stt.pdf>

## Alternative Intersection Configurations

### *Architect Eric Saul's Reconfiguration*



**Barbara Muhlbacher's (Takoma Junction Task Force) Mini-Roundabouts**





Google

To see all the details that are visible on the screen, use the "Print" link next to the map.

## Mini-roundabout option

