




Grant Circle  
Community  
Meeting

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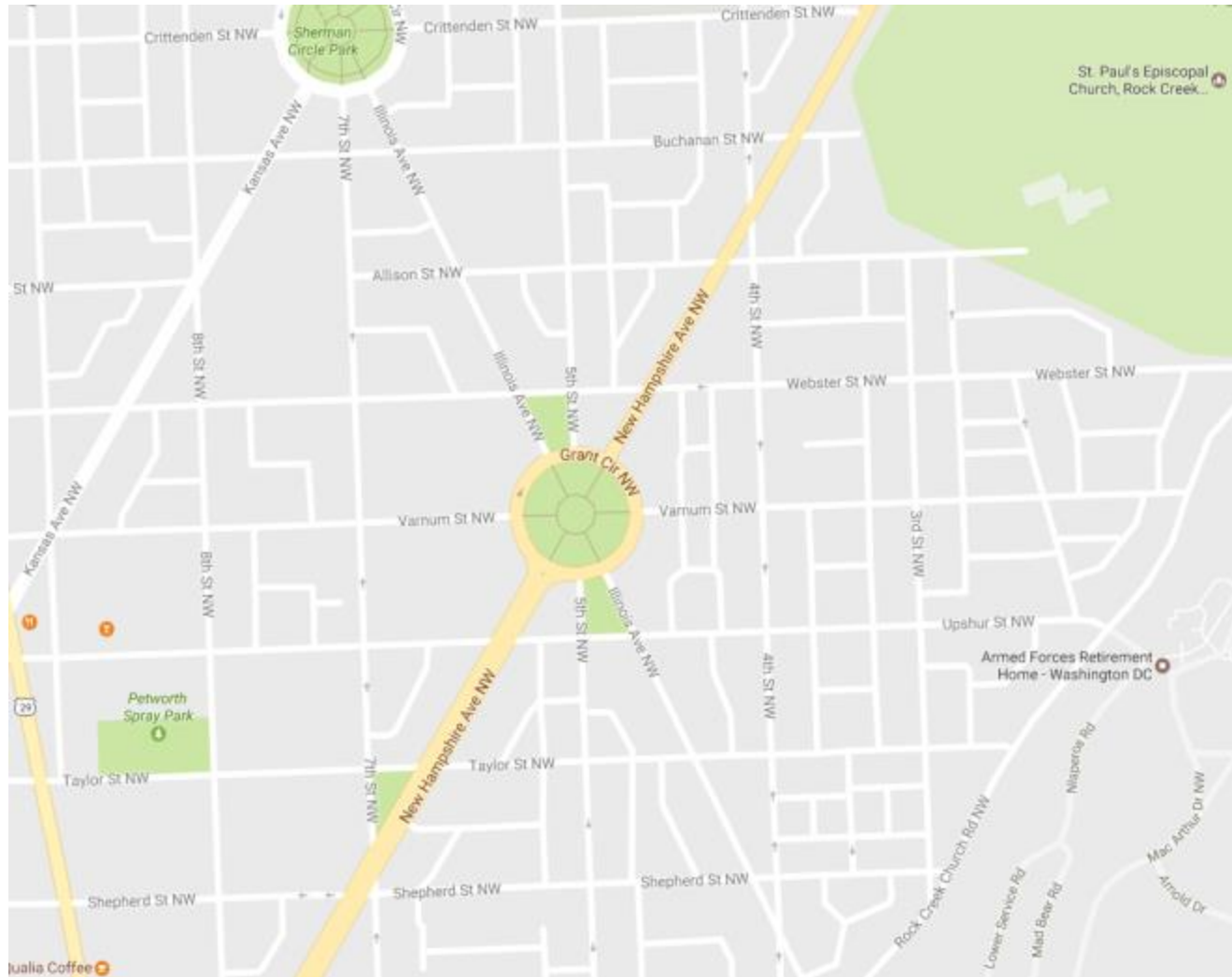
May 2, 2017

# Agenda

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- Introduction
  - Existing Conditions
  - Rock Creek East II Livability Study
  - Further Analysis
  - Next Steps
  - Q&A
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# Grant Circle




# Existing Conditions

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- Average daily traffic volume at Grant Circle is 10,000 vehicles
  - All approaches to the circle are unsignalized and controlled by stop or yield signs
  - Five unsignalized crosswalks into the circle
  - 11 and 12 foot wide travel lanes, and one 17 foot wide parking and bus stop lane
  - New Hampshire Avenue has one travel lane in each direction north of the circle and two south of the circle
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# Issues

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- Speed
  - Safety for all users
  - Crash Data (2013 to 2015)
    - 14 total crashes
    - 8 injuries
    - Zero crashes involving pedestrians
    - 4 crashes involving bicyclists
    - Zero fatalities or disabling injuries
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# Rock Creek East II Livability Study

- Recommended reducing Grant Circle from two travel lanes to one
- Goal to slow drivers, improve pedestrian safety
- Extra space could be repurposed for a variety of uses (green infrastructure, bike lane, raised crosswalks, etc)
- Full implementation would take 4-8 years
- Next steps for Grant Circle could be similar for Sherman Circle


# Rock Creek East II Livability Study



\*Conceptual design, needs further study

# Overall Feedback

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- General support for livability study recommendation, but concern with implementation timeline
  - Concerns about the reduction in traffic capacity, and resulting increase in commuter traffic on local roadways
  - DDOT Director and staff attended site visit in November 2016 with ANC Commissioners and residents to observe Grant Circle traffic
  - Sherman Circle was also discussed and a site visit has been scheduled for Monday, May 15 at 10 AM at Sherman Circle
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# Conceptual Designs

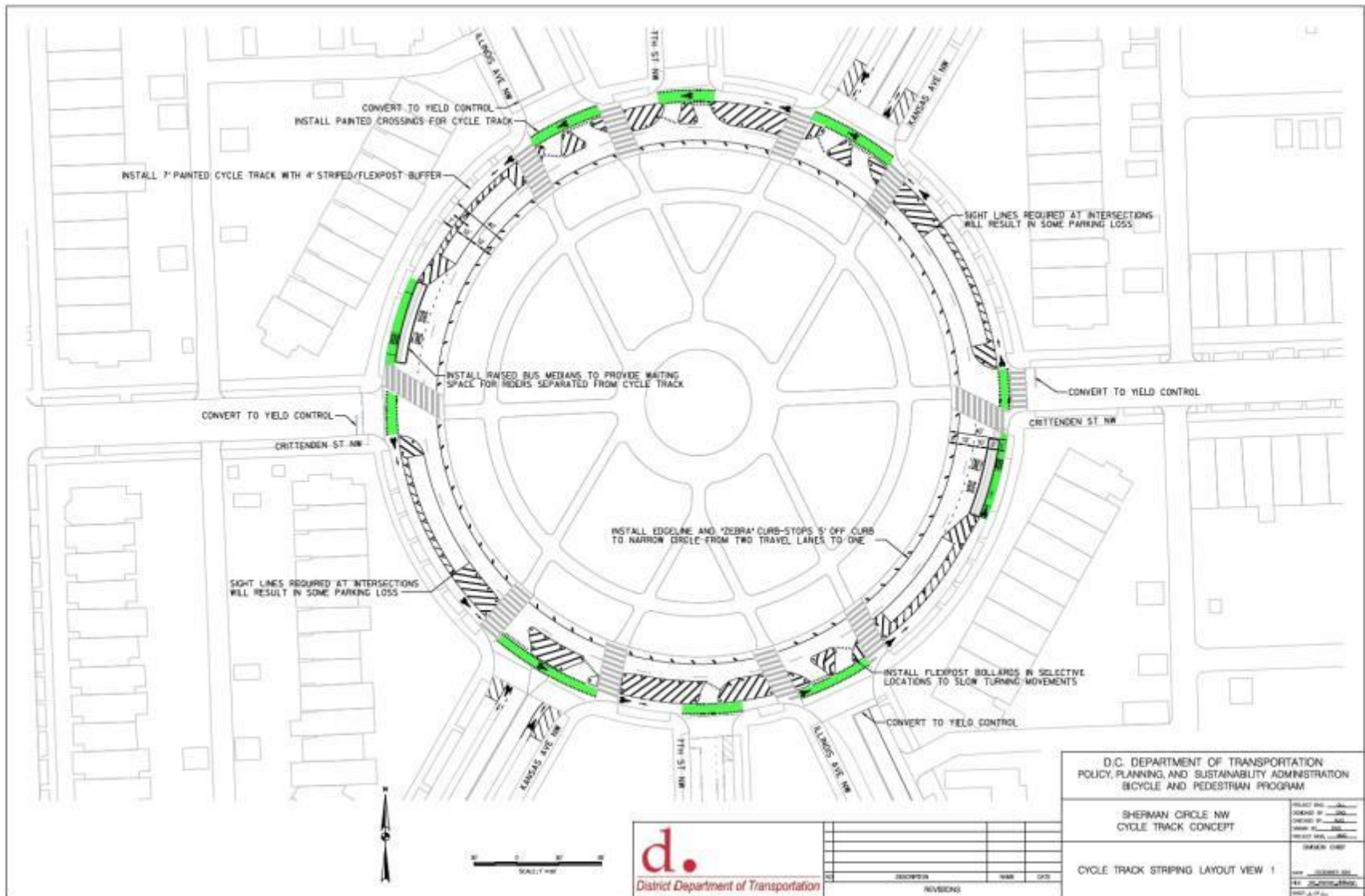
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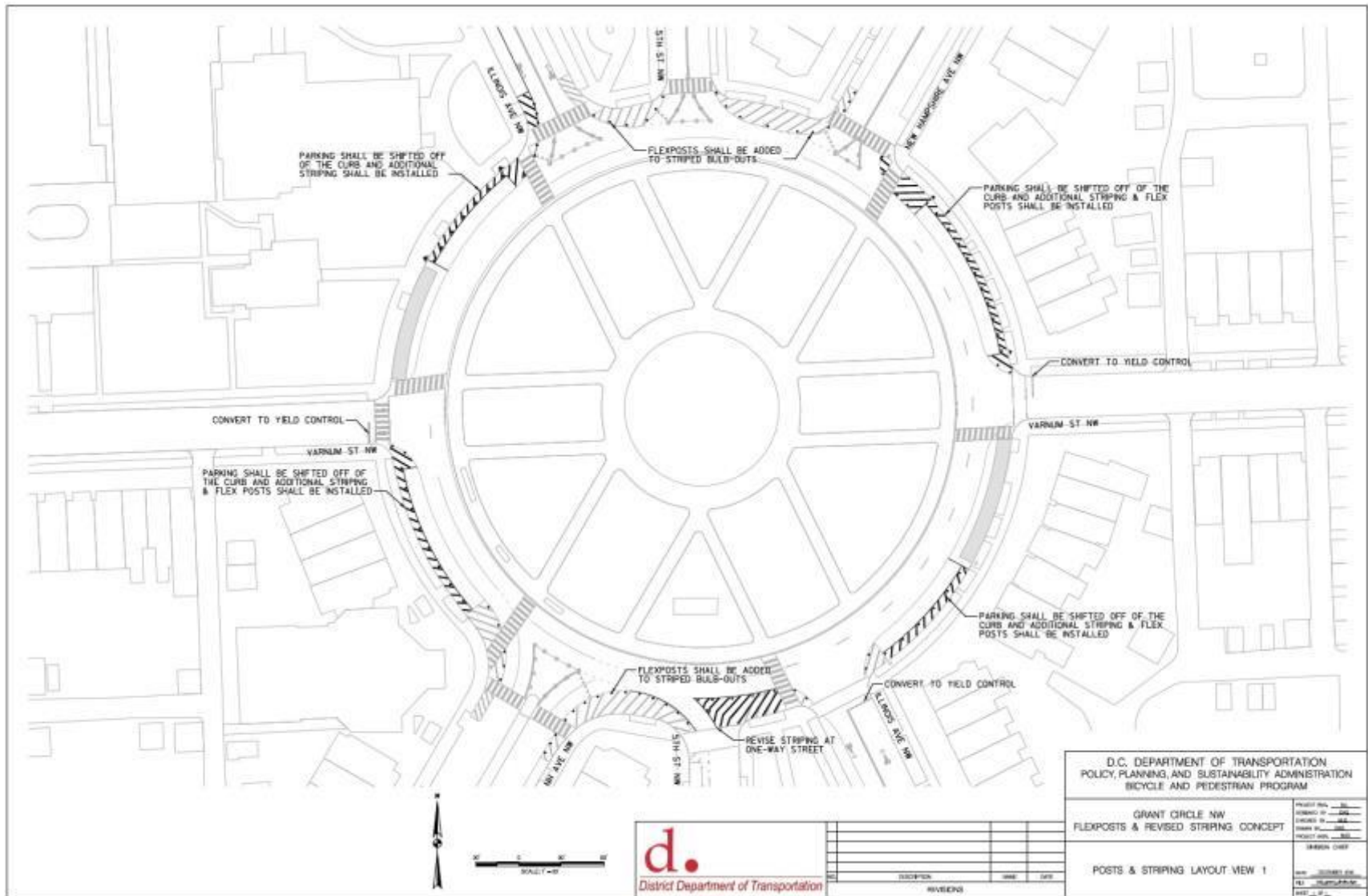
- DDOT drafted three concepts for Grant and Sherman Circles
  - One-Lane Design: Buffered Bike Lane – Narrows traffic operations in the circle to one lane, and adds a bike lane. Protected bike lane when not adjacent to parking. Circle crosswalks shortened from 40 feet to 20 feet.
  - One-Lane Design: Cycle Track Concept – Narrows traffic operations in the circle to one lane, and adds a cycle track. Crosswalks into the circle would be shorter. Bus stops moved off the curb.
  - Two-Lane Design: Flexposts and Revised Striping Concept – Does not eliminate a travel lane, and no bike lane is included. This concept uses flexposts and striping to shift parking off the curb.
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# One-Lane Design – Cycle Track




# Two-Lane Design



# Further Analysis

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- DDOT performed additional analysis on what a reduction to one travel lane would mean for traffic operations at Grant Circle
  - Analysis focused on the performance of traffic entering the circle from New Hampshire and Illinois Avenue approaches
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# Grant Circle Traffic Analysis Focus



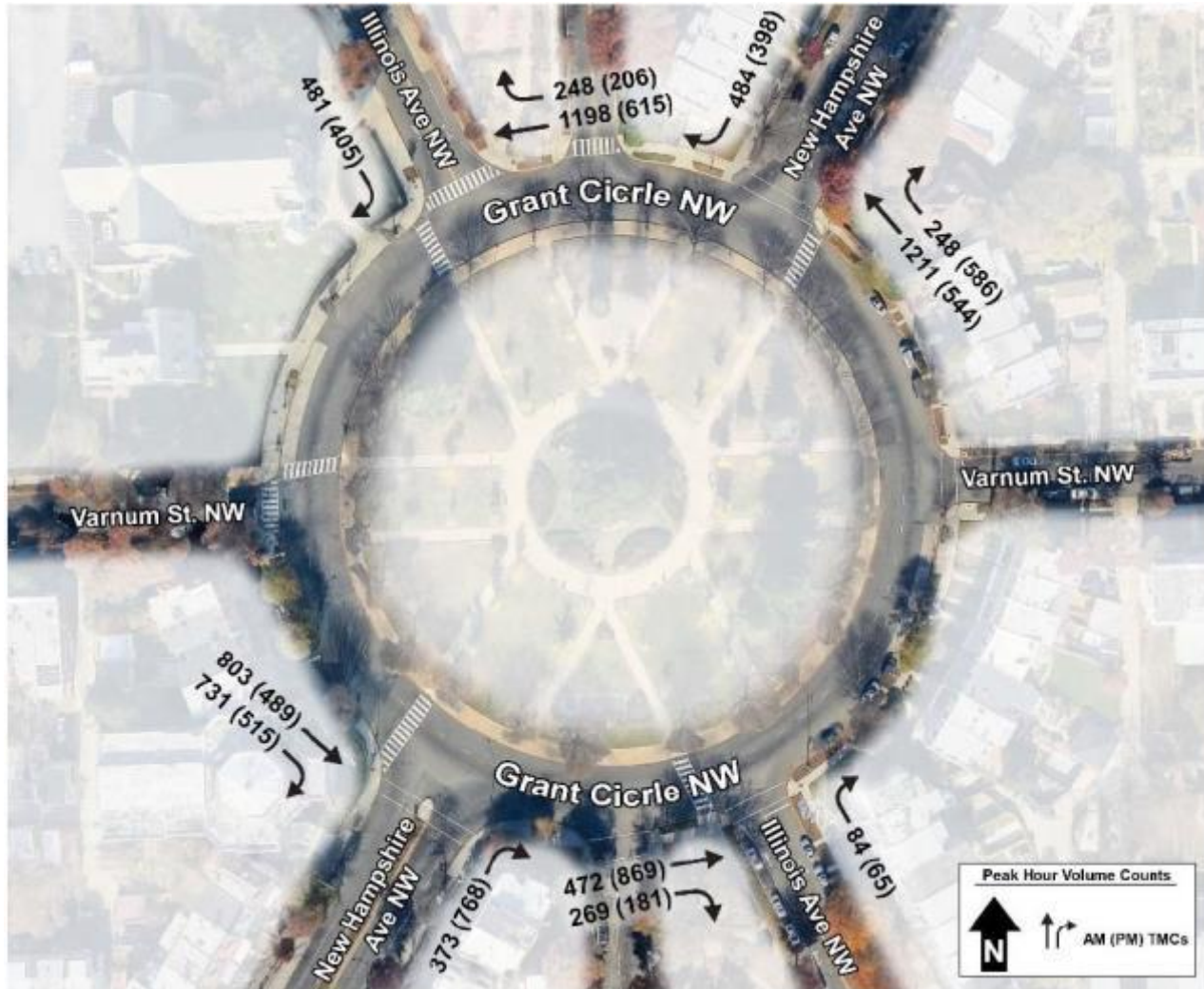
# Data Collection

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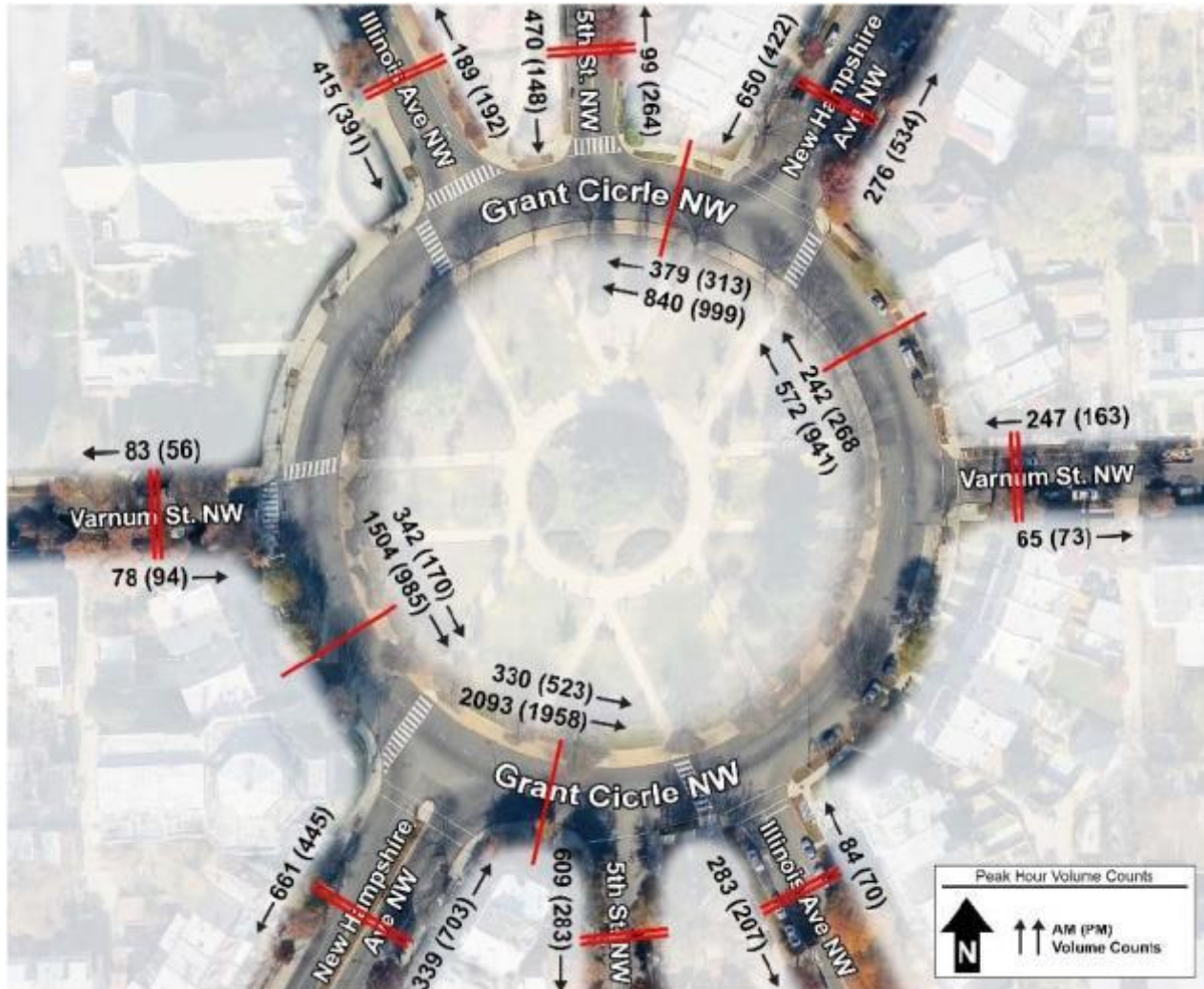
- Weekday AM and PM peak period turning movement counts were collected at the four focal intersections with the circle
  - Daily 24-hour circulatory volume counts by lane were collected on the circle at four midblock locations
  - Daily 48-hour directional inbound and outbound volume counts were collected at each of the eight intersecting legs
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# Turning Movement Counts





# Volume Counts




# Operational and Capacity Analysis

- Study compares existing two lane condition to a single lane configuration
- Traffic volumes were used to run operational analysis of AM and PM peak periods
- Analysis evaluated impacts to delay for vehicles entering the circle, as well as queuing on approaches leading to the circle

# Queuing Analysis

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- AM Peak Hour – Significant queuing impacts projected for southbound New Hampshire and Illinois Avenues, and queues likely to impact other intersections
  - PM Peak Hour – Queues projected to increase on all approaches, but with only slight impacts on other intersections
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# Limitations of Analysis


- DDOT conducted limited planning-level analysis to address potential major impacts or red flags before moving forward
- Analysis works best for traditional four-leg intersections, and has some limitations when working with circles
  - Limitations mainly related to short segments in the circle roadway between intersecting streets
  - Complex roadway design of Grant Circle introduces additional variables
  - Other available modeling tools either don't include queuing analysis, or are more appropriate for future phases

# Conclusions of Analysis

- Results of analysis indicate a negative impact on traffic flow if circle is reduced to a single travel lane
  - At peak times, New Hampshire approaches and southbound Illinois approach currently operate with volumes near or exceeding available capacity
  - Reducing to one lane will increase delays and queues, especially north of the circle during AM peak
  - Volumes on several approaches would further exceed available capacity
  - Drivers would likely find other routes that divert away from Grant Circle

# Next Steps

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- Because the traffic modeling software has limitations when working with traffic circles, and given the safety concerns, DDOT wants to test one-lane design in real time
  - DDOT will test out one-lane configuration for one week (week of May 22)
  - DDOT will post concrete barriers to block off one travel lane in Grant Circle
  - Concrete barriers will also be posted in New Hampshire Avenue south of the circle so drivers can only enter from one lane
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# One Lane Design During Trial Period



# Evaluation

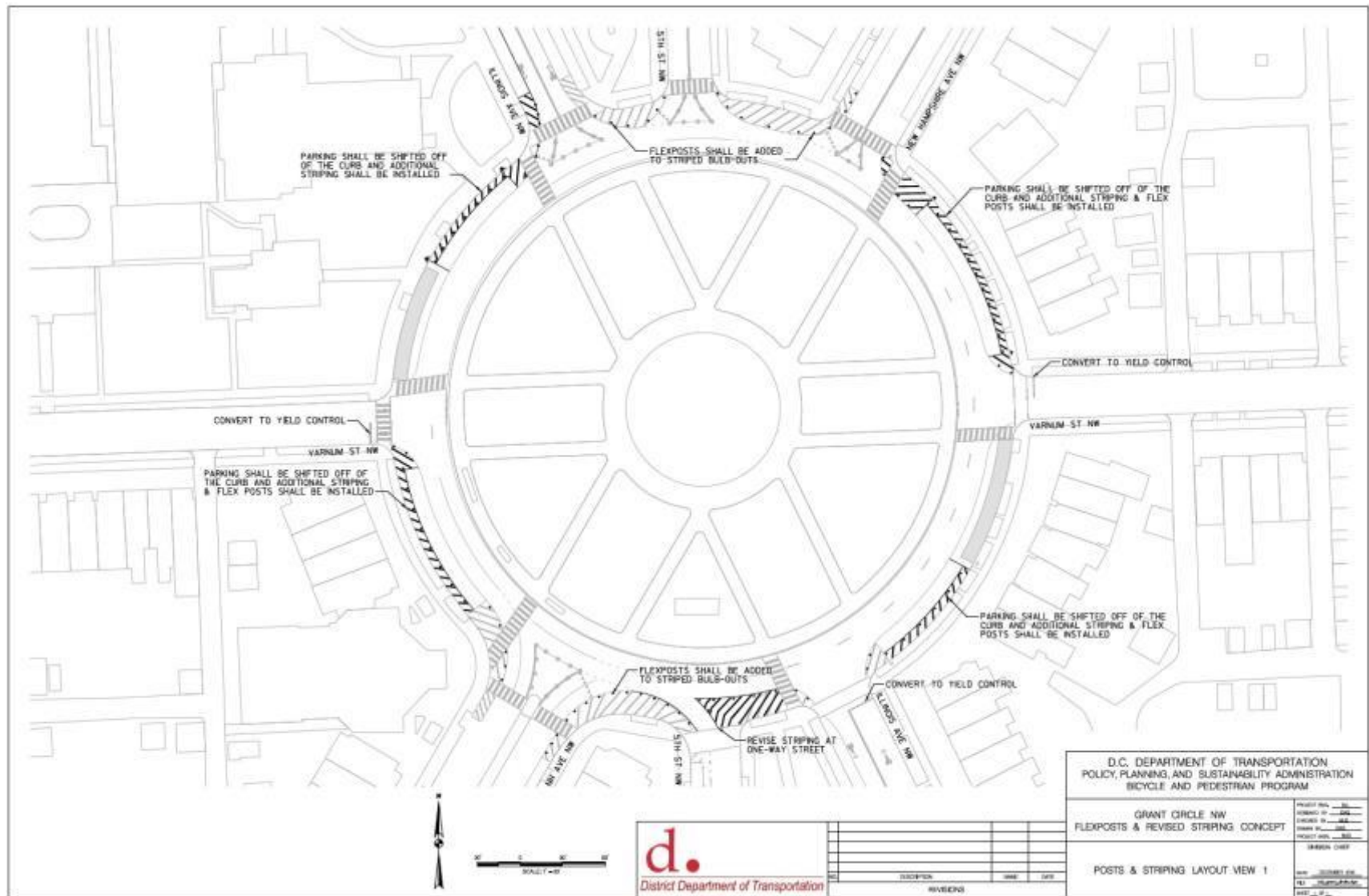
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- DDOT will collect data and conduct field observations during trial period, analyze data, and report back to community
  - Evaluation will be based on changes to traffic operations, volumes, and queuing
  - Focus areas
    - Increased congestion at Grant Circle, particularly at intersections with New Hampshire and Illinois Avenues
    - Queues on southbound New Hampshire and Illinois Avenues during AM peak
    - Increases in commuter volumes
    - Pedestrian and bicycle safety
  - Two outcomes
    - If one-lane configuration works well during trial period, DDOT will retain this option in future plans
    - If one-lane configuration does not work well, DDOT will move forward with a two-lane design option only
  - We also intend to analyze and create design concepts for Sherman Circle at a later date
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# Two-Lane Design



# Two-Lane Design

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- Will retain two lanes of traffic around the circle
  - Variety of treatments will be considered
    - Narrowing of existing travel and parking lanes
    - Increased striping and flex posts
    - Shorter pedestrian crosswalks into the circle
    - Tighter turning radii
    - Single lane entrance/exit at New Hampshire Avenue
    - Buffered bike lane
    - Raised crosswalks
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Send feedback to:

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