



Sudley Road/ Centreville Road Roundabout Project

July 14, 2022

7:00-8:00pm



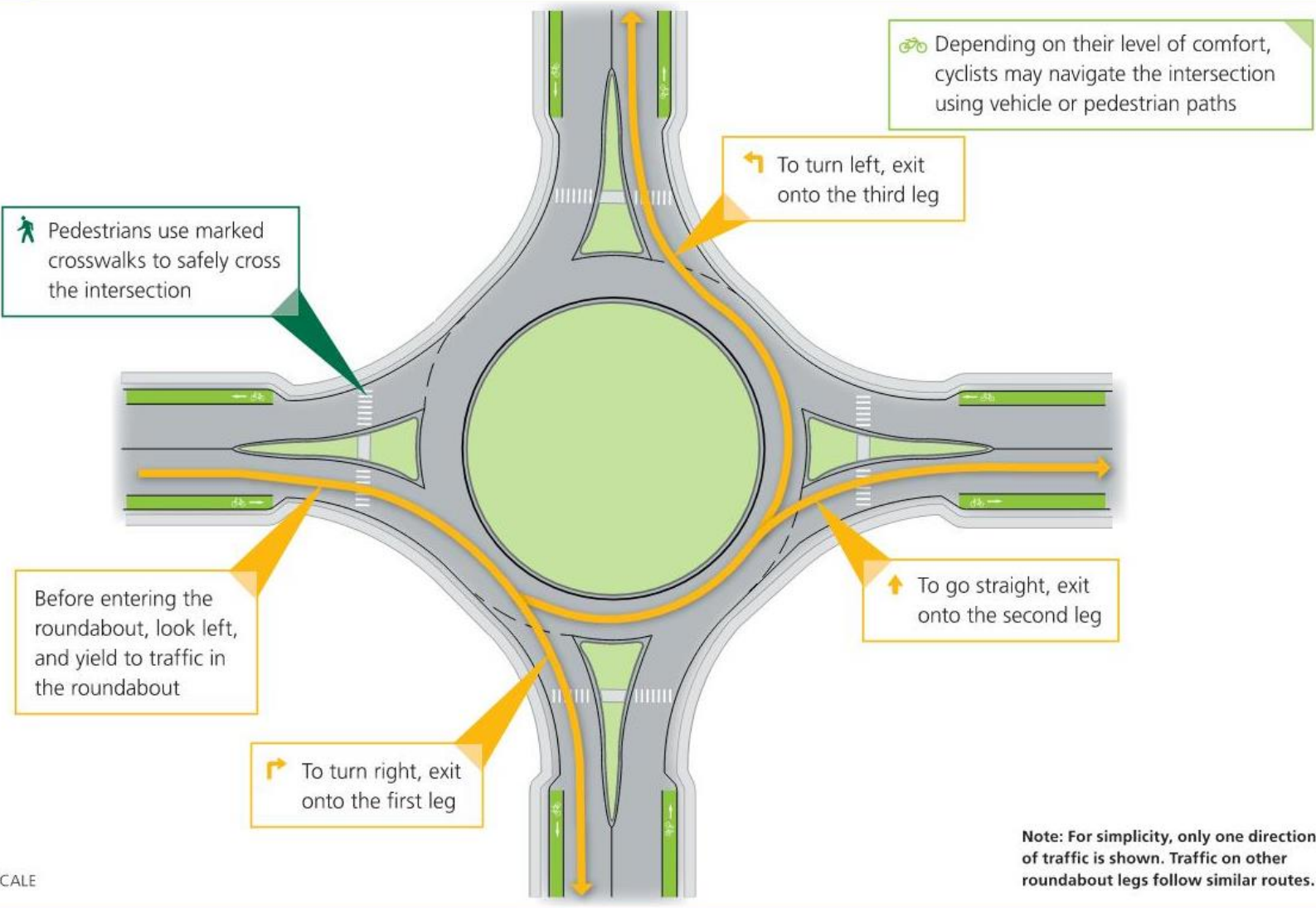
Meeting Agenda

- Project Background
- Mathis Avenue Improvement Project and Roundabout Project
- Project Goals
- Roundabout Design
- Environmental Investigations and Documents
- Sidewalk and Bike Connectivity
- Roundabout Design Goals
- Proposed Impacts to Parking and Right of Way
- Construction Phasing
- Roundabout Operations
- Project Funding and Schedule
- Public Feedback



INNOVATIVE INTERSECTIONS

Navigating a Roundabout

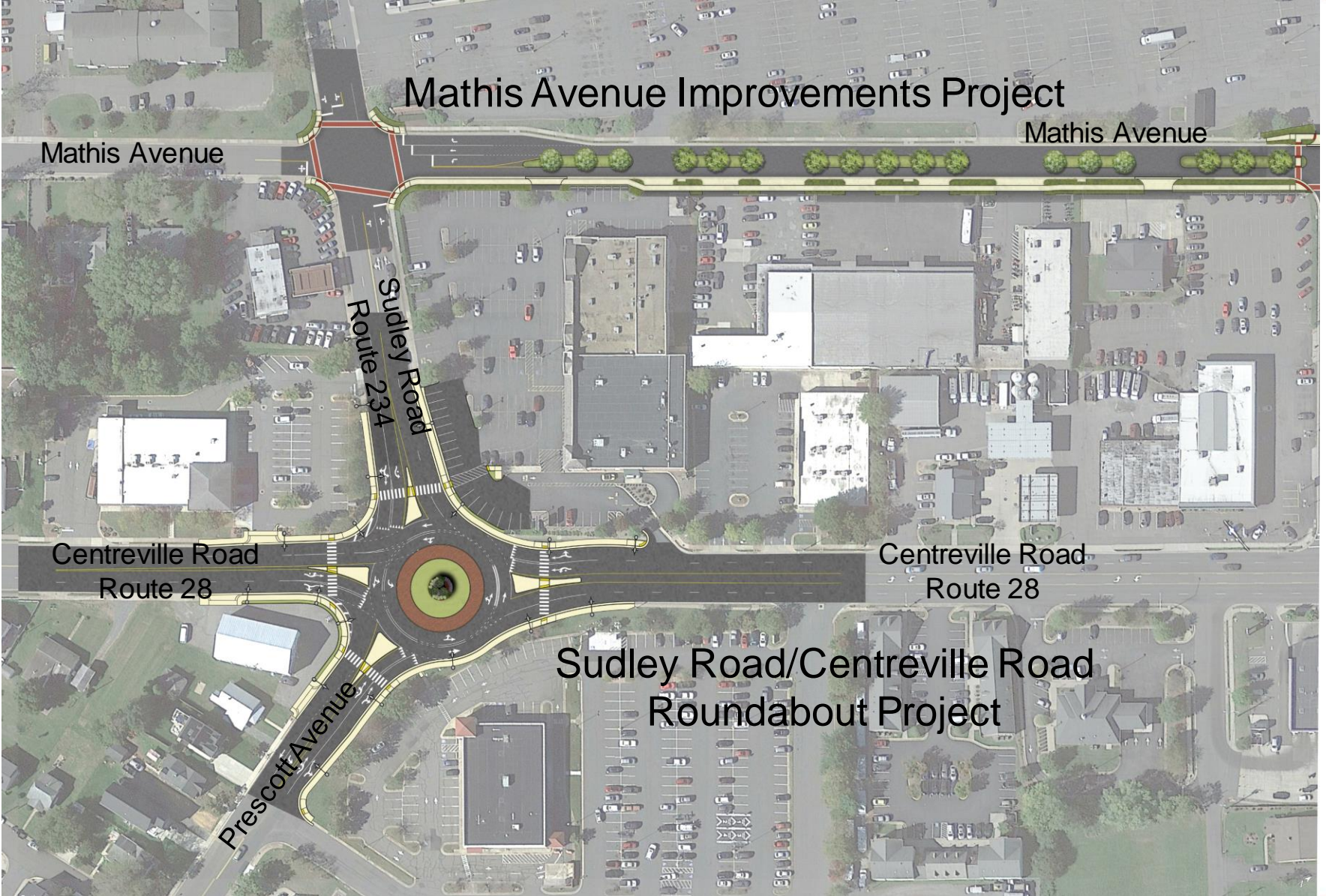


NOT TO SCALE

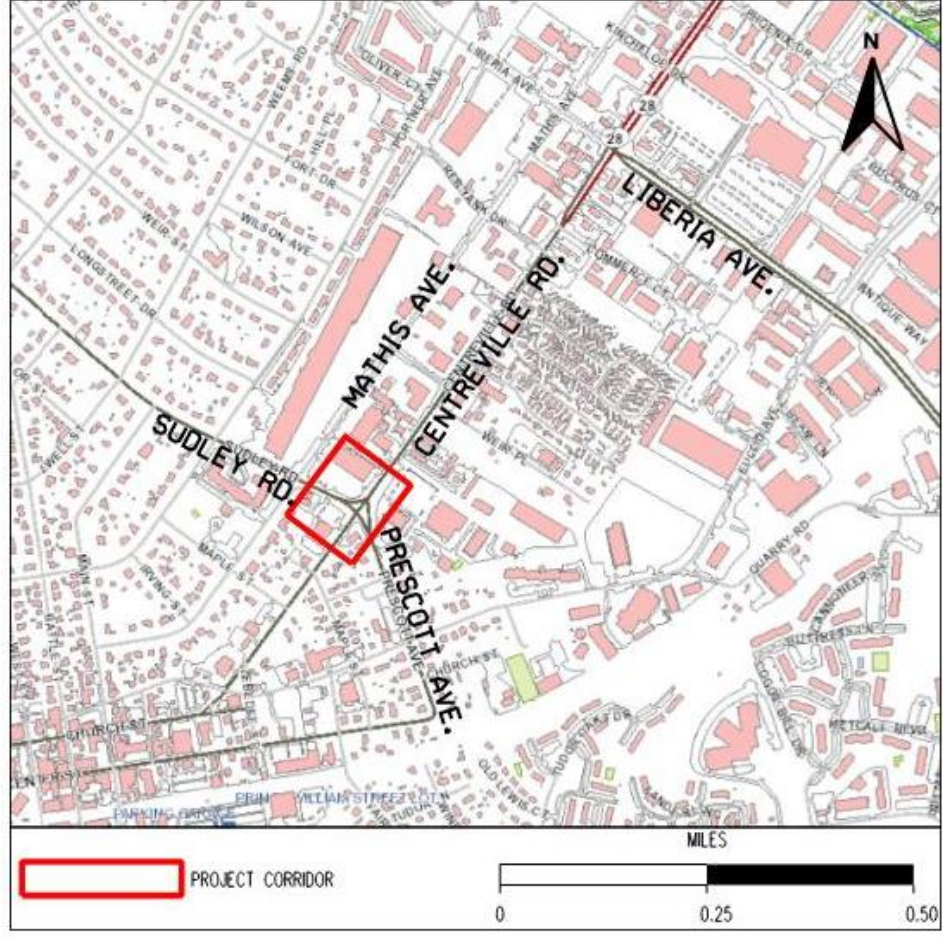
Note: For simplicity, only one direction of traffic is shown. Traffic on other roundabout legs follow similar routes.

Project History & Development





Project Location



Existing Intersection



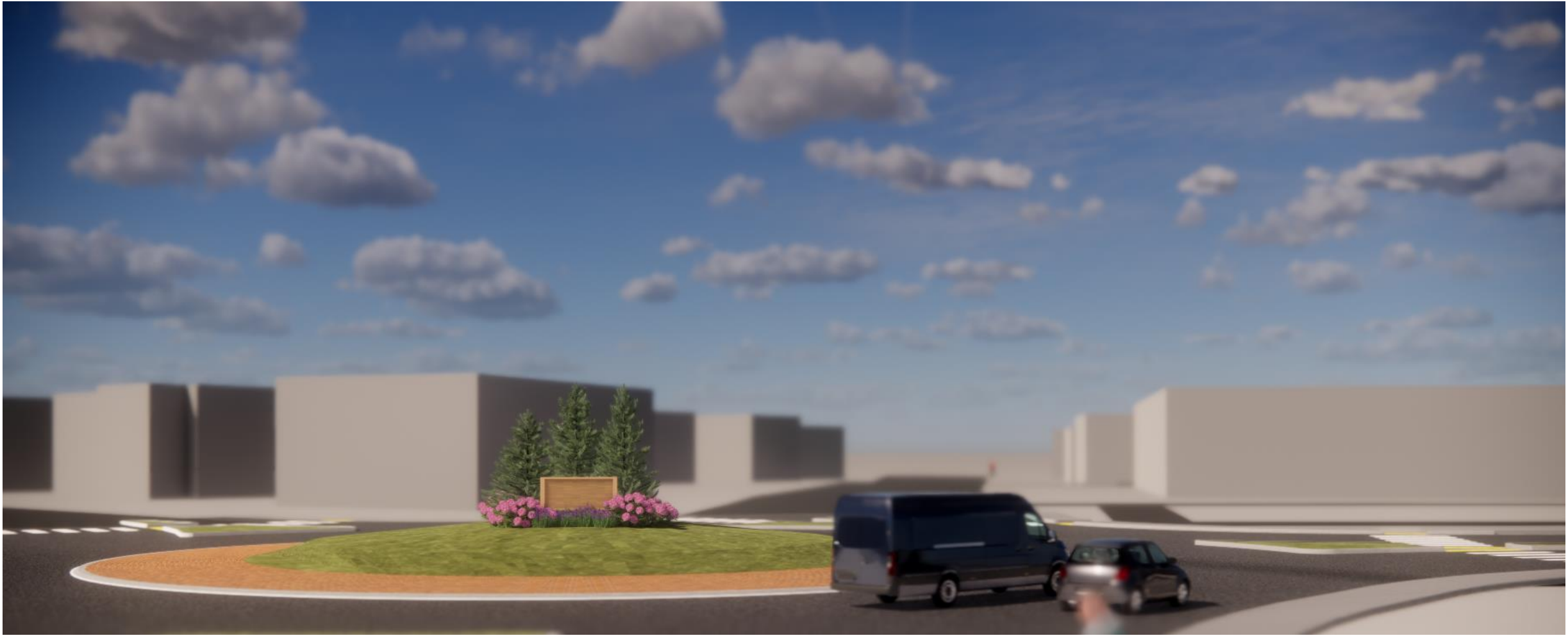
Proposed Intersection

Project Goals

- Reduce traffic congestion and delay
- Promote lower speeds and traffic calming
- Improve operational performance and efficiency
- Increase pedestrian safety with reduced vehicular speeds, refuge islands and push-button Rectangular Rapid-Flashing Beacons (RRFB's) at crosswalks
- Green benefit: reduce vehicle noise and emissions
- Improve streetlighting for better visibility
- Creating a Downtown gateway and resiliency
- Comply with TMP & CIP goals/City Comprehensive Plan



Existing Signalized Intersection



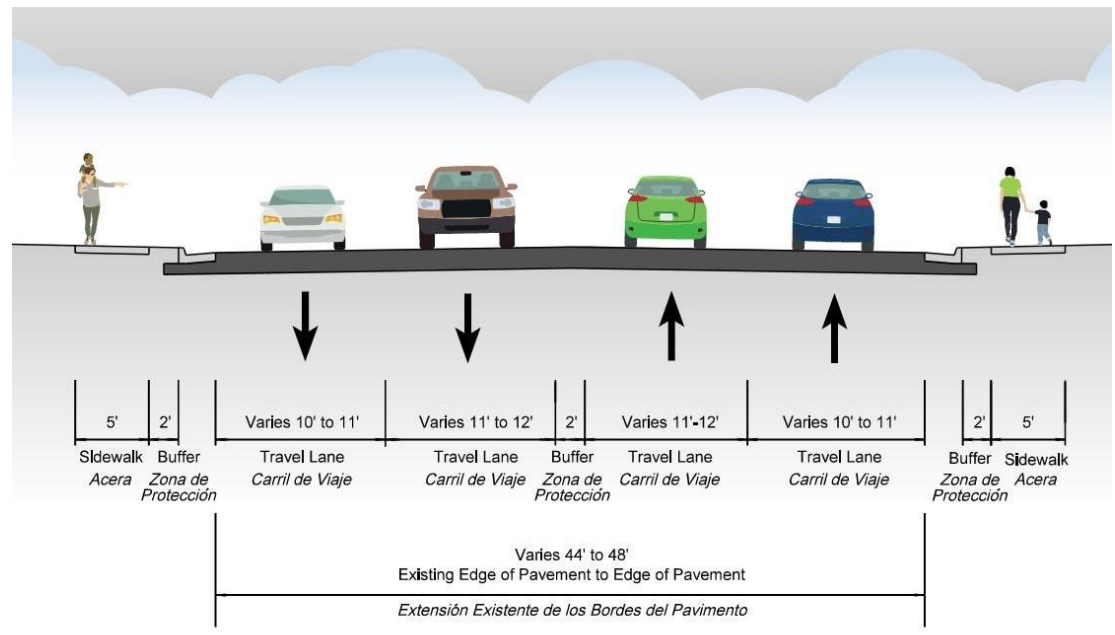
Proposed Roundabout

Roundabout Design

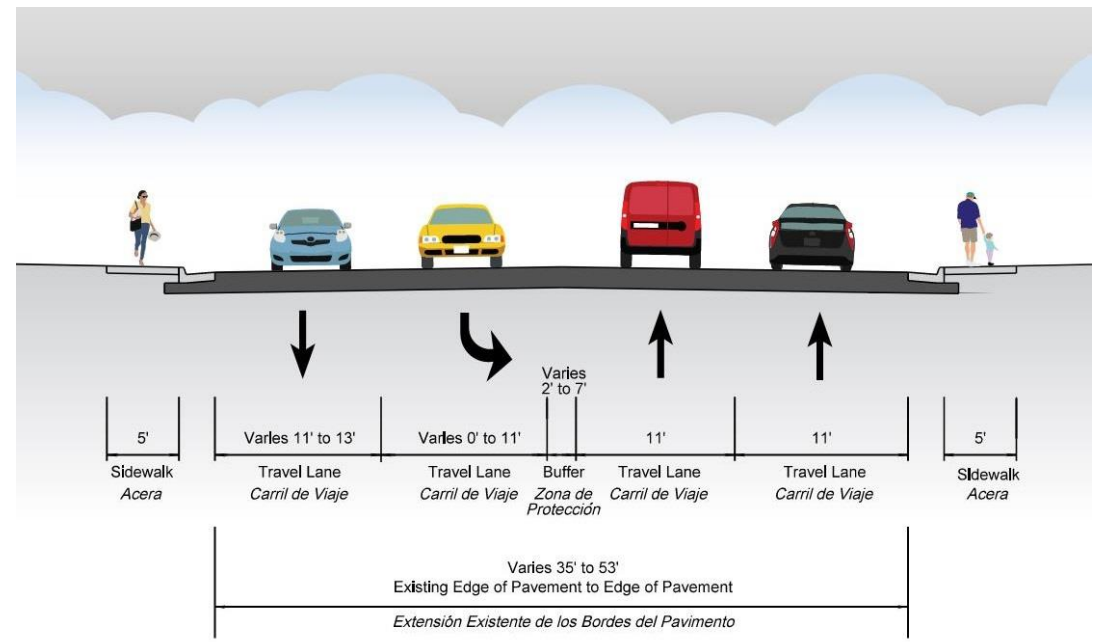
Environmental Investigation and Documents

- No Hazardous Materials Found
- Roundabout construction will have no impacts on existing wetlands or parks
- Documents completed and submitted to the City of Manassas:
 - EQ-429 Early Project Notification form
 - EQ-121 Hazardous Materials Due Diligence Certification form with Hazardous Materials Review letter attachment
 - EQ-555 Water Quality Permits and Natural Resource Due Diligence Certification/Checklist form
 - Waters of the US Review letter attachment
 - Threatened and Endangered Species Review attachment
 - ePIX submittal to Virginia Department of Historic Resources (VDHR) cultural resources review
 - Response from VDHR stating that no historic properties would be affected
 - Programmatic Categorical Exclusion (PCE)

Existing Corridor Typical Section



Existing
Centreville Road (Route 28)
And Sudley Road (Route 234)

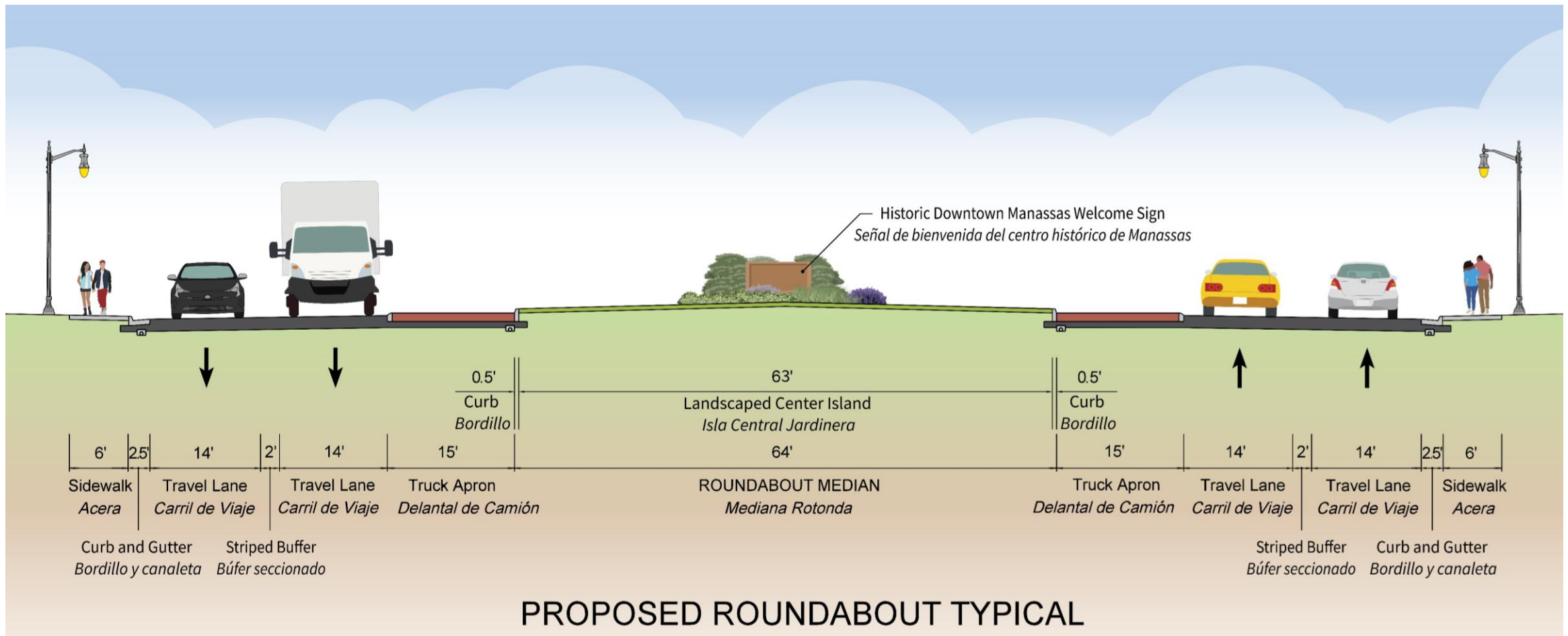


Existing
Prescott Avenue



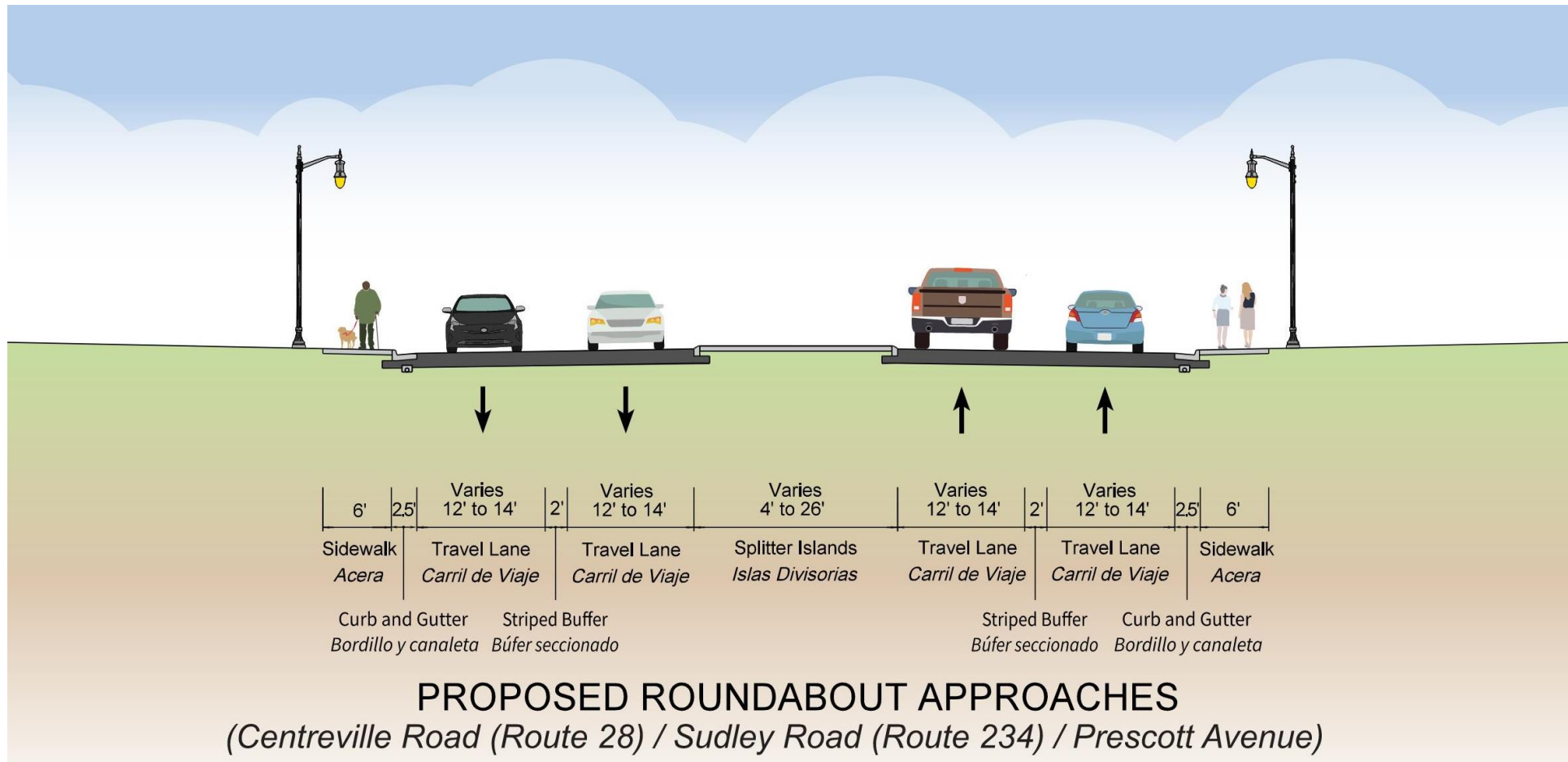
Existing Intersection

Proposed Typical Sections

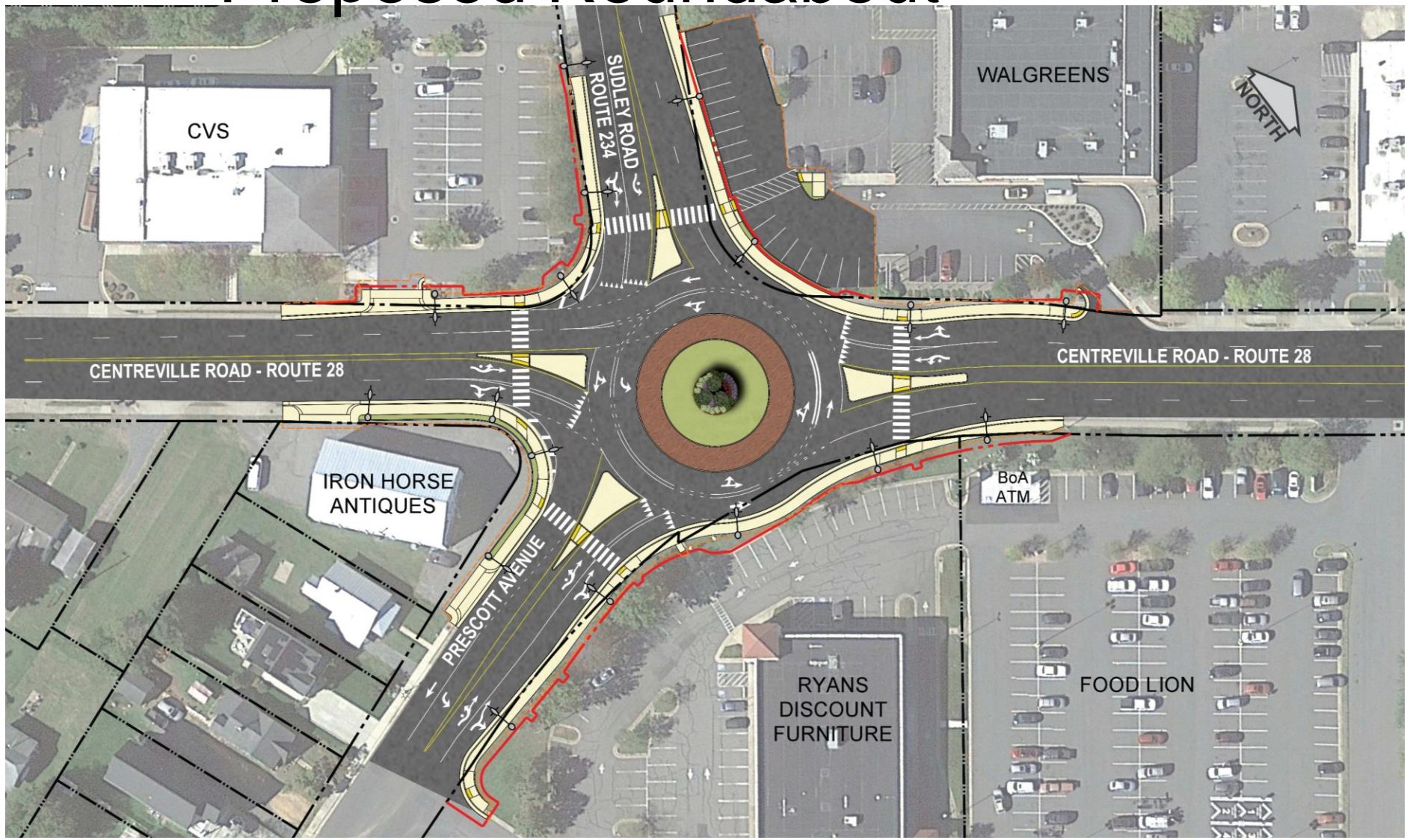


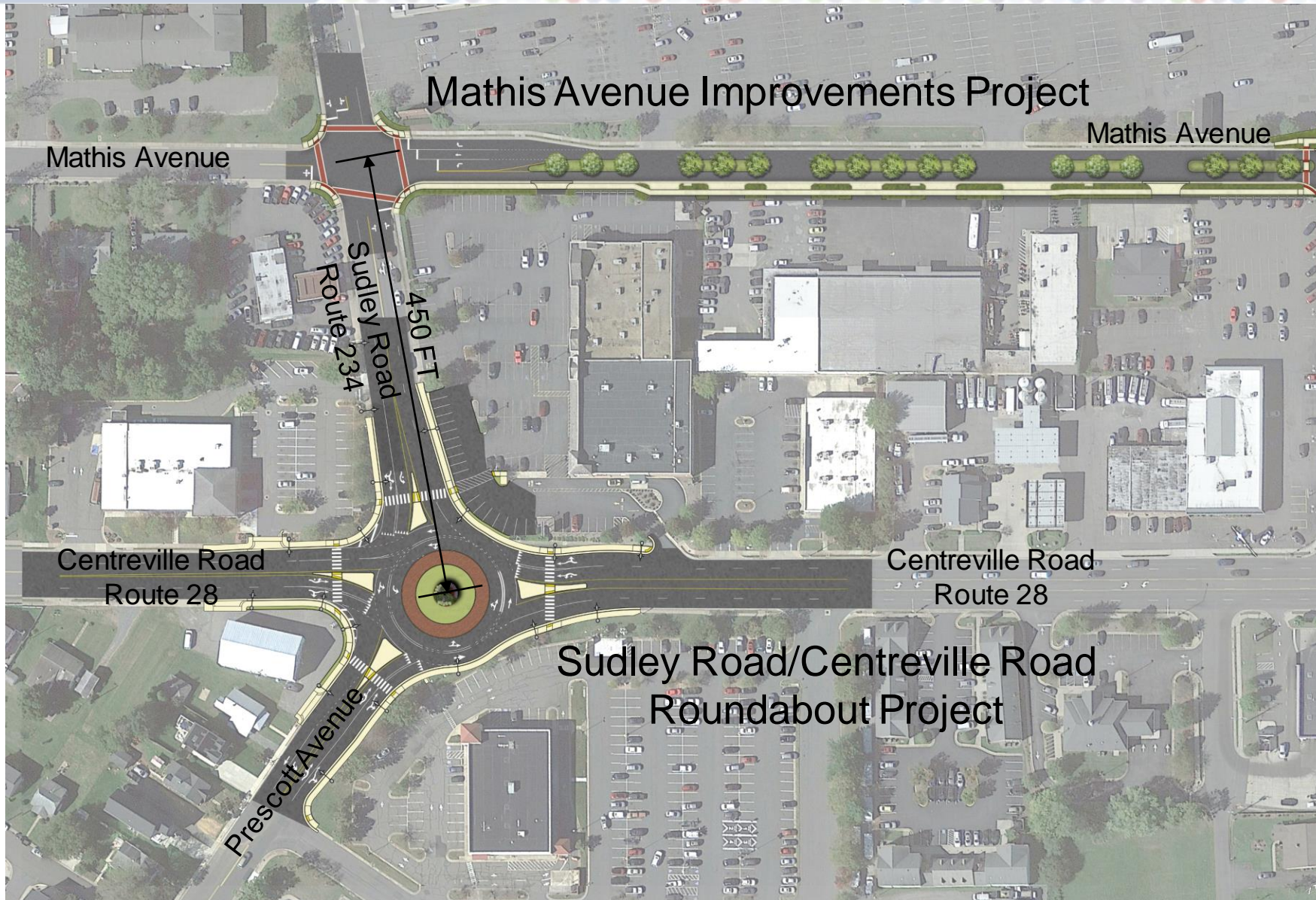
PROPOSED ROUNDABOUT TYPICAL

Proposed Typical Sections

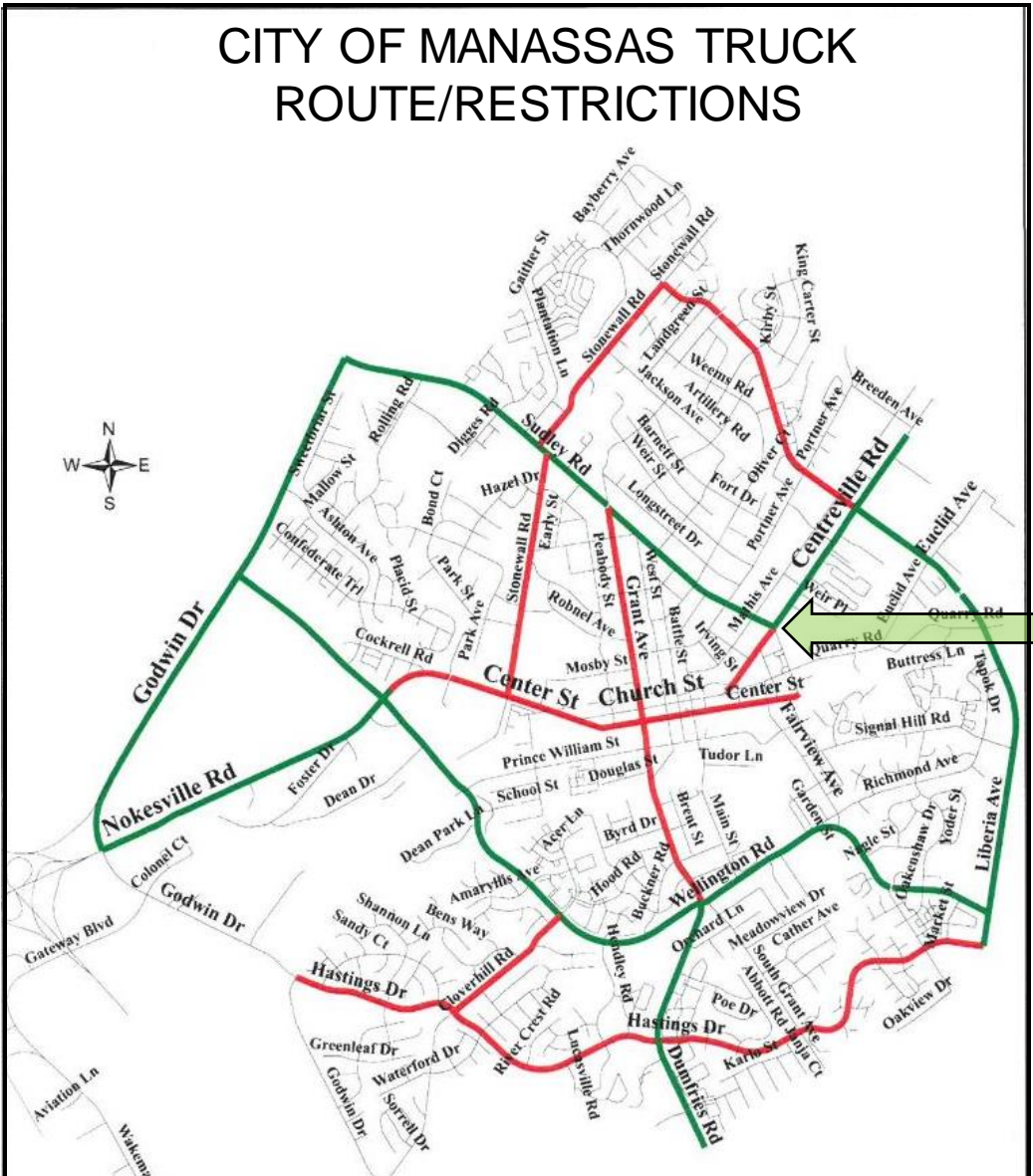


Proposed Roundabout





CITY OF MANASSAS TRUCK ROUTE/RESTRICTIONS



Legend

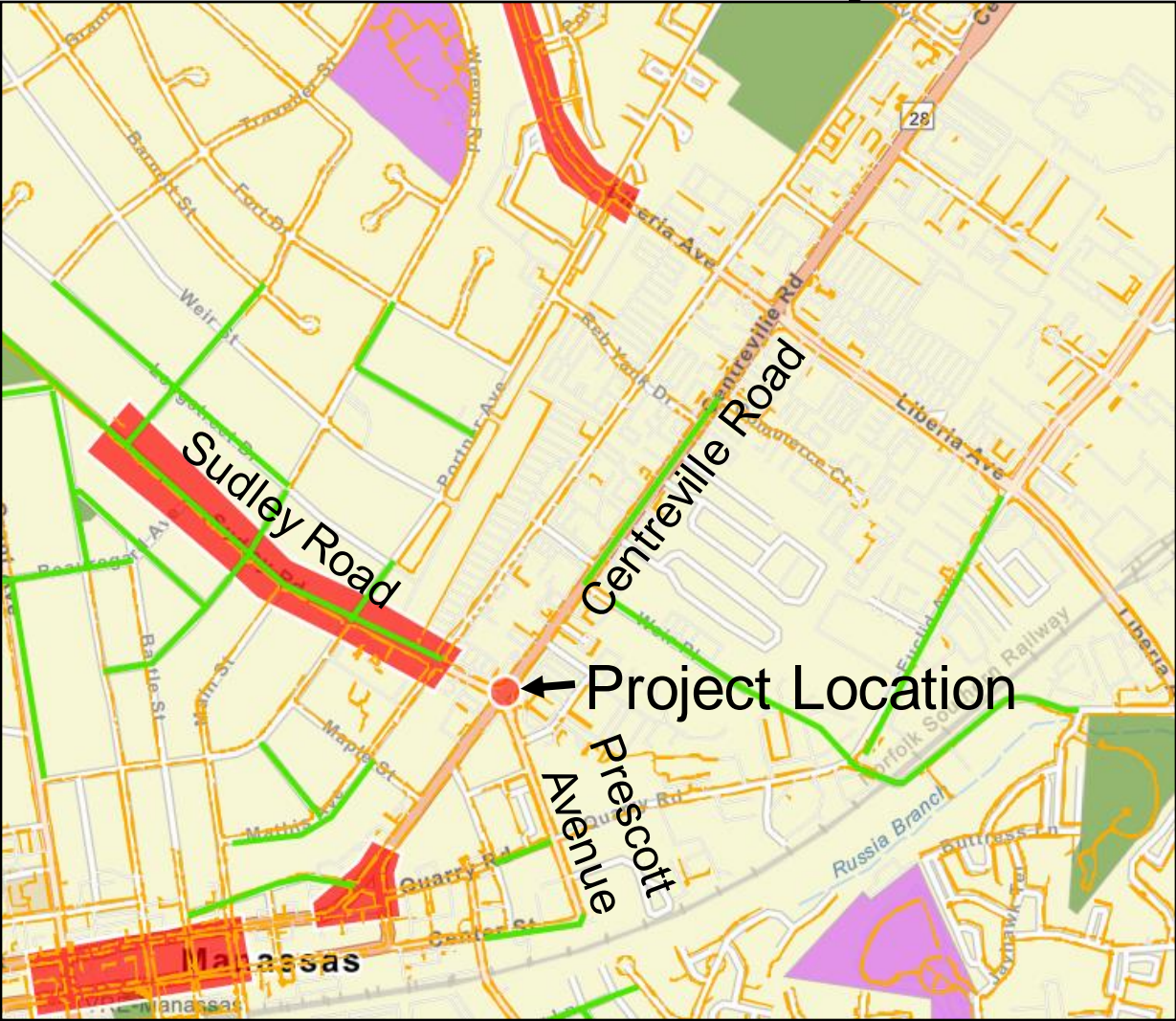
- Truck Route
- Truck Restriction
- Undesignated

Project Site

Truck Volume Percentages
 (Existing % = Future %)

- Sudley Road (Rte. 234) – 2.3%
- NB Centreville Road (Rte. 28) - 3.5%
- SB Centreville Road (Rte. 28) – 2.7%
- Prescott Avenue – 2.2%

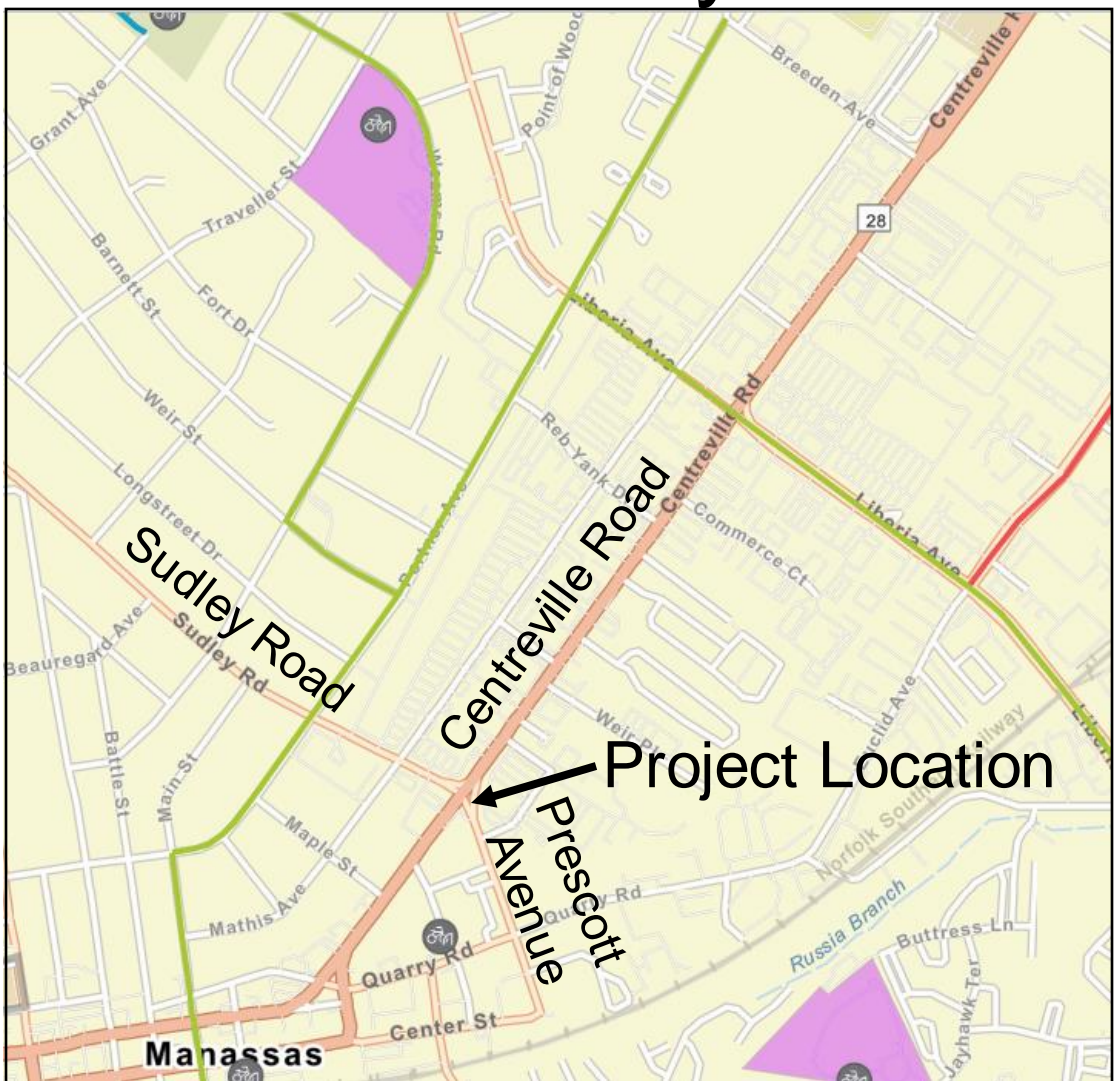
Sidewalk Connectivity



Legend

- Sidewalk Gap Connections
- Existing Sidewalks
- Safety Improvement
- Schools
- Parks

Bike Connectivity



Legend

- Signed Shared Road
- Existing Bike Lane
- Schools

Roundabout Design Goals

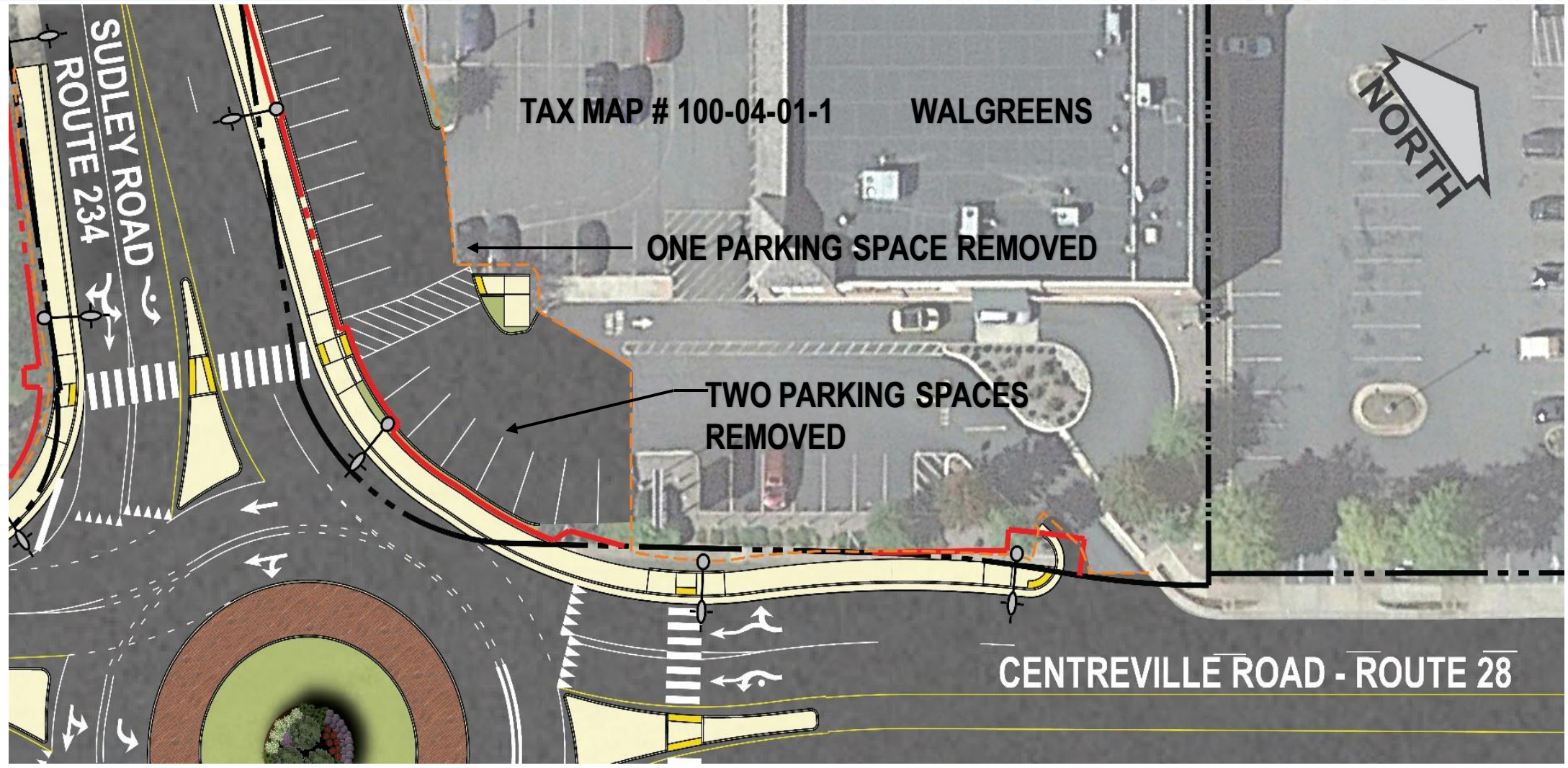
Improved Operational Performance and Increased Pedestrian Safety

- Marked improvement in operational performance due to Level of Service (LOS) improvement to LOS B (built roundabout) compared to the existing LOS D (existing signal)
- Typical roundabout geometry promotes lower speeds, calming traffic
- 35% typical reduction in all crashes
- 76% typical reduction in injuries
- 90% typical reduction in fatalities
- 46% typical reduction in pedestrian crashes
- 10% typical reduction in bicycle crashes
- Pedestrian safety improved by addition of wider sidewalks, pedestrian curb ramps with marked crosswalks, raised refuge islands in the medians, and push-button Rectangular Rapid-Flashing Beacons (RRFB's) in all four quadrants of the intersection at crossing locations. The raised refuge areas in the median allow pedestrians to cross one direction of traffic at a time

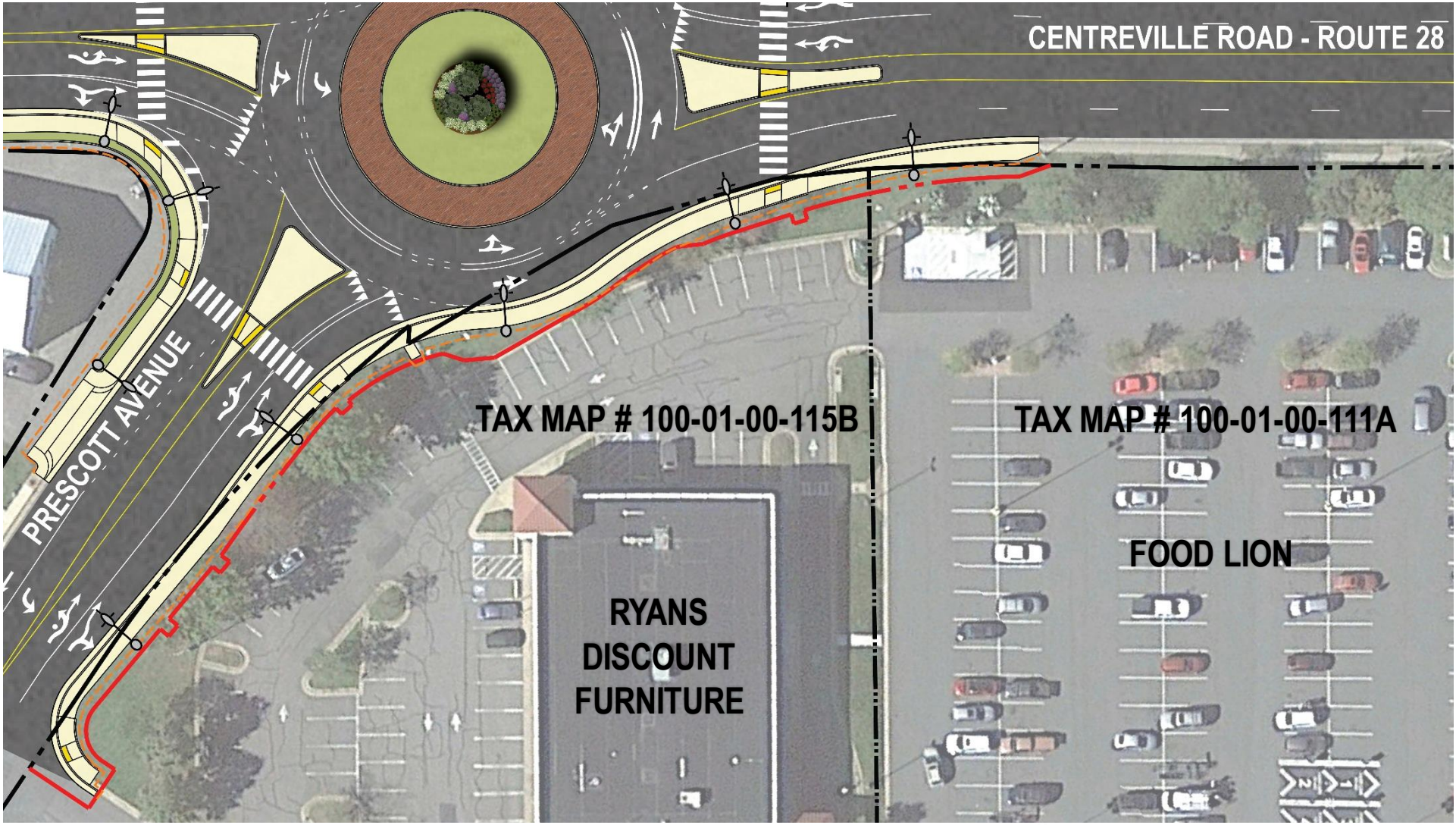
Reduction in Delays, Congestion, Noise, and Emissions

- Delays reduced by 16,000 hours per year in AM and PM peak hours (gets every car through the intersection 30 seconds more quickly during peak hours)
- Reduce delays result in reduced congestion and noise from idling, accelerating, and decelerating vehicles
- 40% typical reduction in greenhouse emissions from less cars idling at a traffic signal
- Based on the FHWA CMAQ Emissions Toolkit, the roundabout will reduce total daily emissions by 607 kg/day of carbon dioxide equivalent and total energy consumption by 8 MMBTU. This reduction in emissions is the equivalent of driving 550,000 fewer miles or saving 25,000 gallons of gas in one year.

Proposed Impacts to Existing Parking and Right of Way

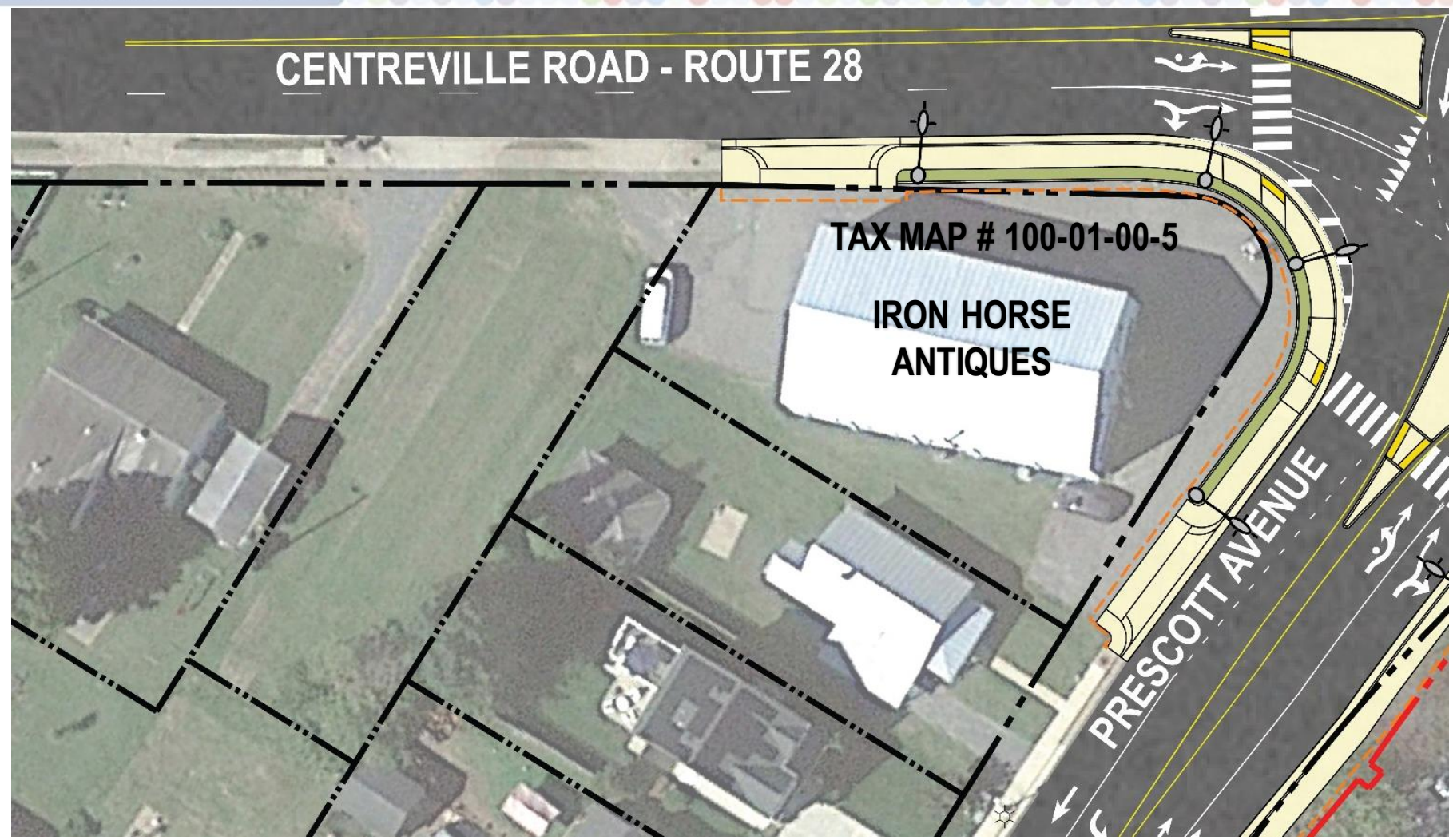


TAX MAP # 100-04-01-1 (WALGREENS, MANASSAS CORNER)
PROPOSED ROW TAKE = 2332 SF

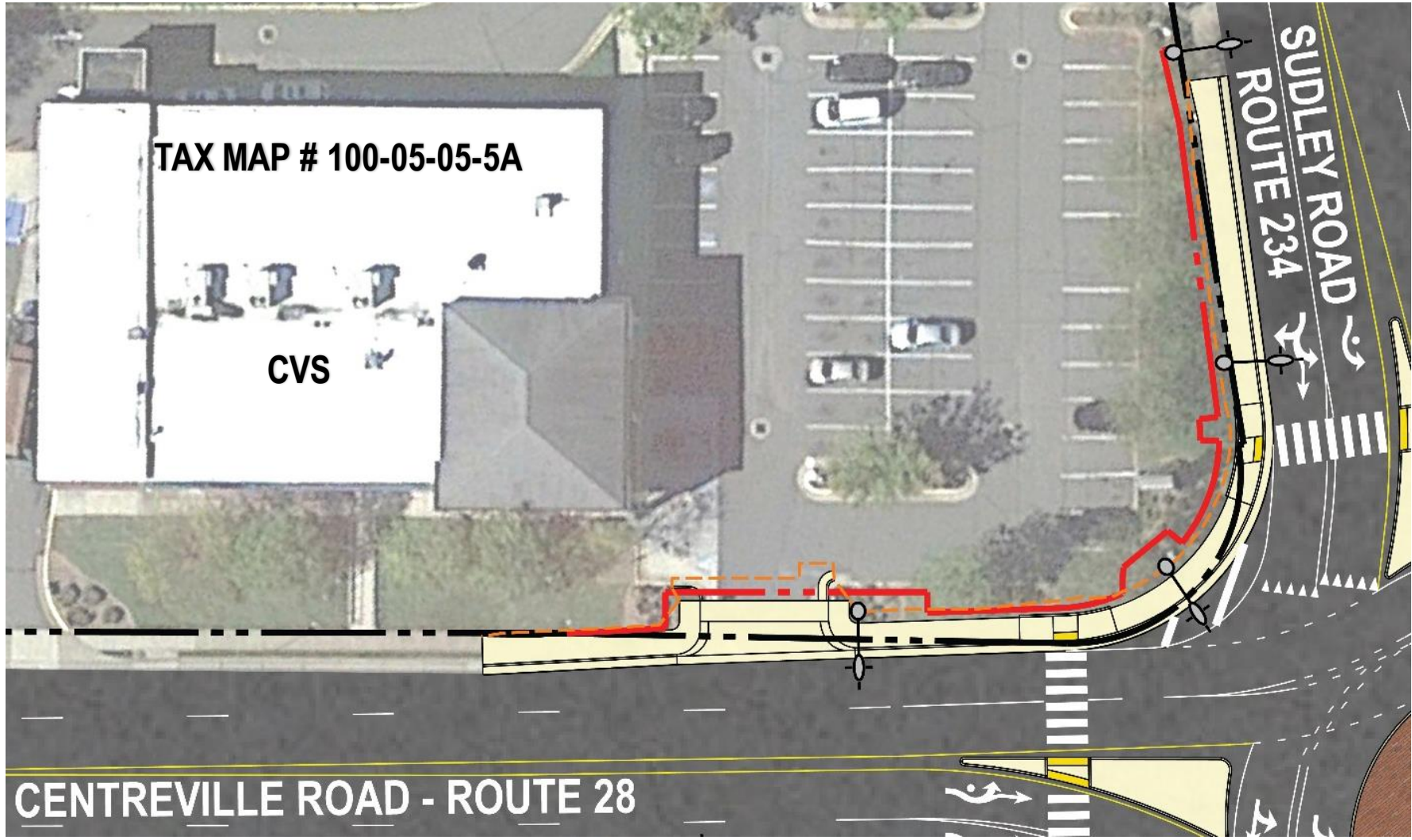


**TAX MAP # 100-01-00-115B (RYANS DISCOUNT FURNITURE)
PROPOSED ROW TAKE = 4975 SF**

**TAX MAP # 100-01-00-111A (FOOD LION)
PROPOSED ROW TAKE = 357 SF**



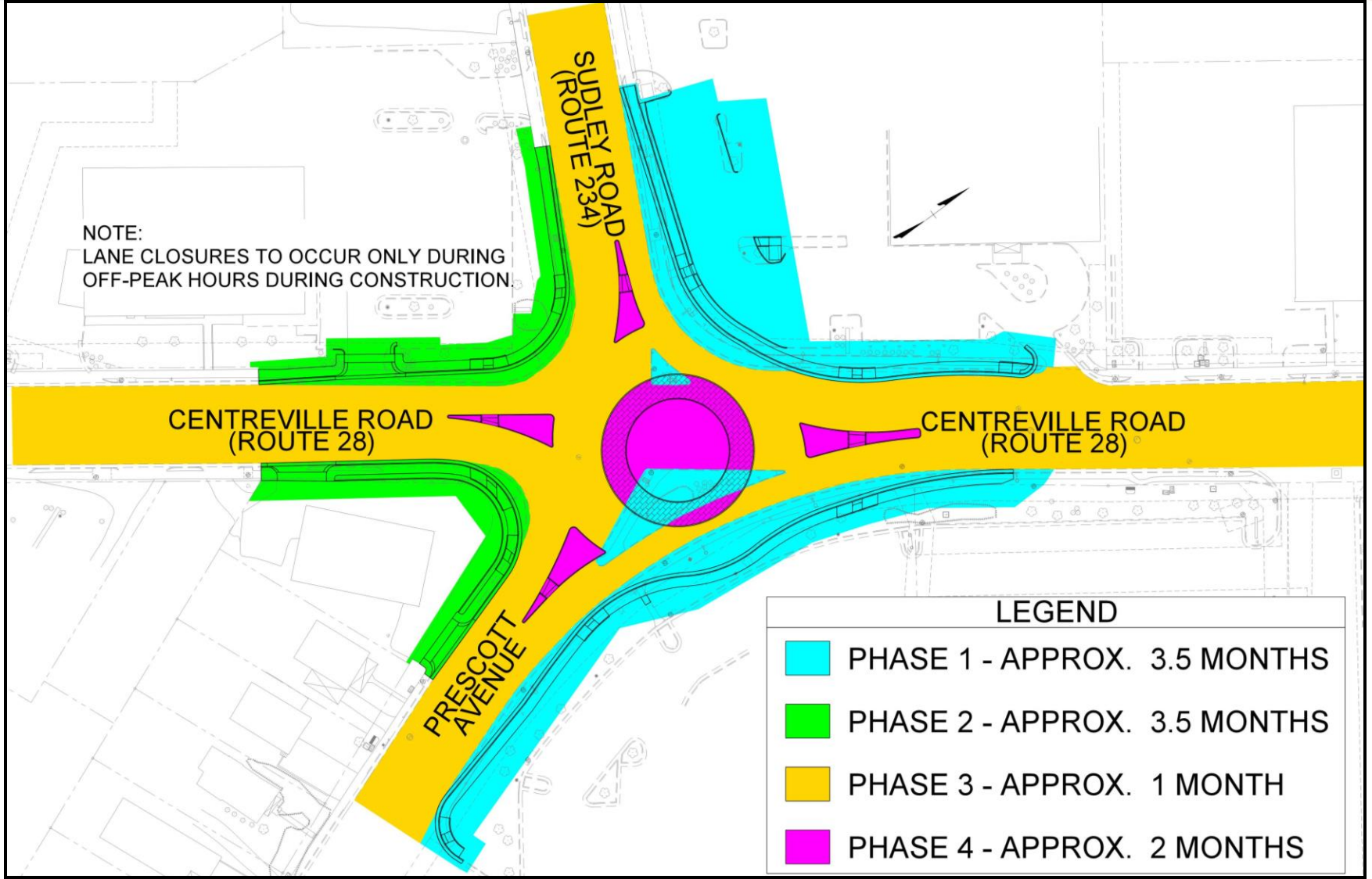
TAX MAP # 100-01-00-5 (IRON HORSE ANTIQUES)
PROPOSED ROW TAKE = NONE (NO PARKING IMPACTS)



CENTREVILLE ROAD - ROUTE 28

**TAX MAP # 100-05-05-5A (CVS)
PROPOSED ROW TAKE = 2025 SF**

Construction Phasing



CONSTRUCTION PHASING

Roundabout Operations

"Personally, I love them, and I'll tell you why. You only have to stop one lane of traffic, then go to the middle and wait. The cars can't go much faster than 20 mph through the roundabout so the crossing aspect is great."

Denise Haltom

School Crossing Guard, Suamico, Wisconsin
Green Bay Press-Gazette
February 6, 2001

"We have had a lot of people not very happy about the idea of roundabouts, but after they are constructed, those fears mostly go away."

Brian Walsh

Washington State Department of Transportation
Seattle Times
June 5, 2002

"We all know people speed up to get through a yellow light. But at the roundabout, all the vehicles have to slow down ... we have almost 50 roundabouts now, we have a lot [fewer] personal injuries. We have fewer fatalities."

James Brainard

Mayor, City of Carmel, Indiana
www.nbc17.com
November 8, 2007

Education is key.

Education is vital to the acceptance and success of a roundabout. Navigating a roundabout is easy. But because people can be apprehensive about new things, it's important to educate the public about roundabout use.

There are just a few simple guidelines to remember when driving through a roundabout:

1. Slow down.
2. If there's more than one lane, use the left lane to turn left, the right lane to turn right, and all lanes to go through, unless directed otherwise by signs and pavement markings.
3. Yield to pedestrians and bicyclists.
4. Yield at the entry to circulating traffic.
5. Stay in your lane within the roundabout and use your right-turn signal to indicate your intention to exit.
6. Always assume trucks need all available space — don't pass them!
7. Clear the roundabout to allow emergency vehicles to pass.

Visit safety.fhwa.dot.gov to learn more about roundabouts



Design standards for roundabouts continue to evolve, and not all features of existing roundabouts meet current recommended practice. Please refer to FHWA's web site for recommendations on current design practice.

Original source photo by Lee Rodgerdtz. Photo has been altered to illustrate roundabout and updated signage.

Roundabouts A Safer Choice



00-0876



What is a roundabout?

A roundabout is a type of circular intersection with yield control of entering traffic, islands on the approaches, and appropriate roadway curvature to reduce vehicle speeds.

Modern roundabouts are different from rotaries and other traffic circles. For example, roundabouts are typically smaller than the large, high-speed rotaries still in use in some parts of the country. In addition, roundabouts are typically larger than neighborhood traffic circles used to calm traffic.

A roundabout has these characteristics:

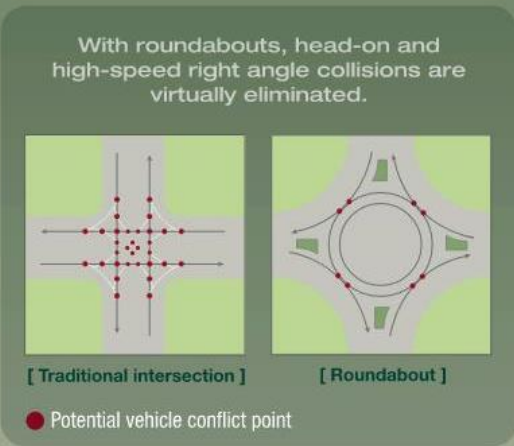


Why consider a roundabout?

Compared to other types of intersections, roundabouts have demonstrated safety and other benefits.

Roundabouts:

- > **Improve safety**
 - More than 90% reduction in fatalities*
 - 76% reduction in injuries**
 - 35% reduction in all crashes**
 - Slower speeds are generally safer for pedestrians



- > **Reduce congestion**
 - Efficient during both peak hours and other times
 - Typically less delay
- > **Reduce pollution and fuel use**
 - Fewer stops and hard accelerations, less time idling
- > **Save money**
 - Often no signal equipment to install, power, and maintain
 - Smaller roundabouts may require less right-of-way than traditional intersections
 - Often less pavement needed
- > **Complement other common community values**
 - Quieter operation
 - Functional and aesthetically pleasing

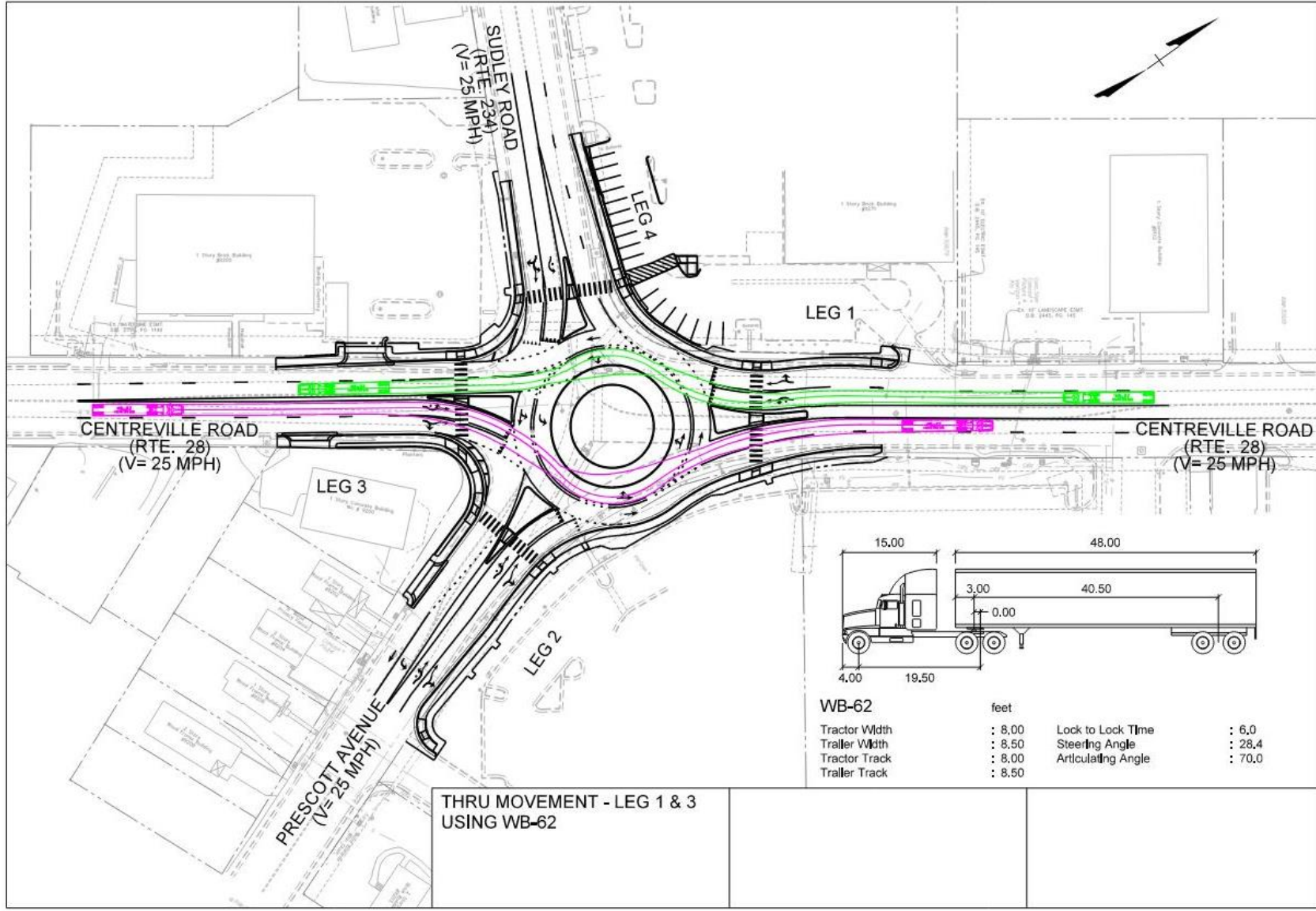


Source: Roundabouts: An Informational Guide. Federal Highway Administration, Washington, D.C., latest version, except as noted.

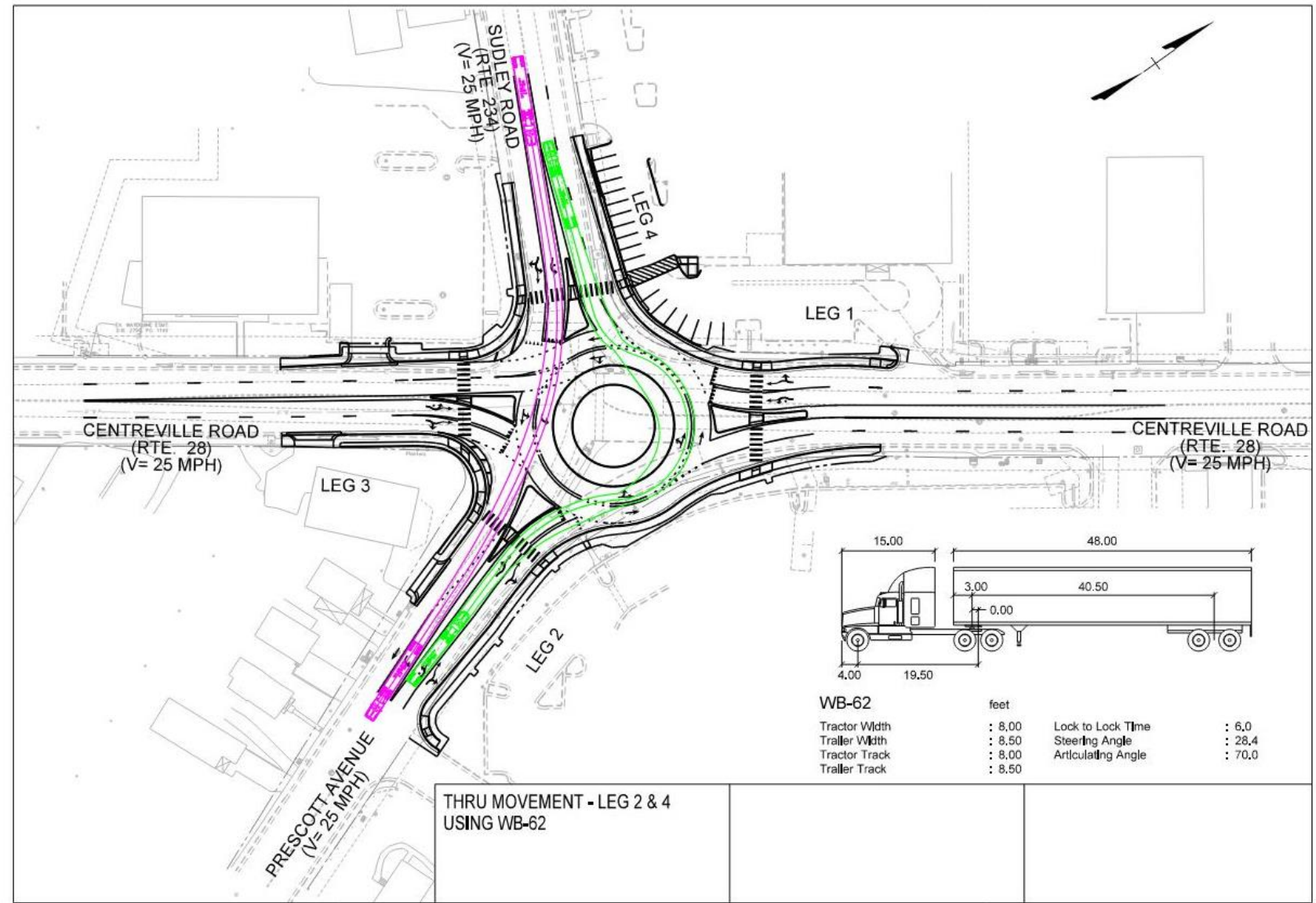
*"Safety Effect of Roundabout Conversions in the United States: Empirical Bayes Observational Before-After Study," Transportation Research Record 1751, Transportation Research Board (TRB), National Academy of Sciences (NAS), Washington, D.C., 2001.

** NCHRP Report 572: Roundabouts in the United States. National Cooperative Highway Research Program, TRB, NAS, Washington, D.C., 2007.

AUTOTURN AT ROUNDABOUT

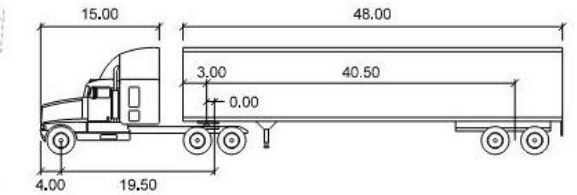
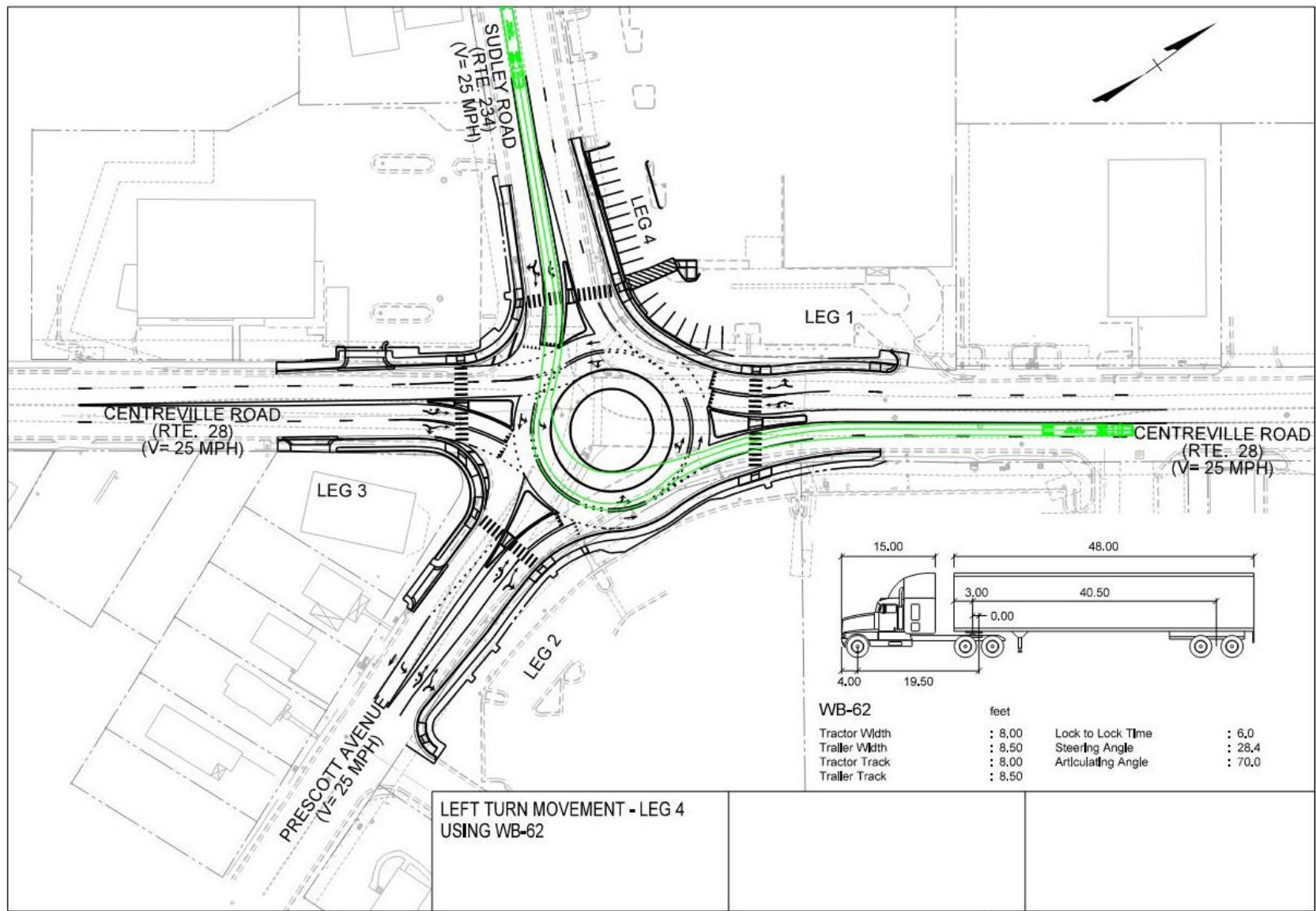


AUTOTURNAT ROUNDABOUT



THRU MOVEMENT - LEG 2 & 4
USING WB-62

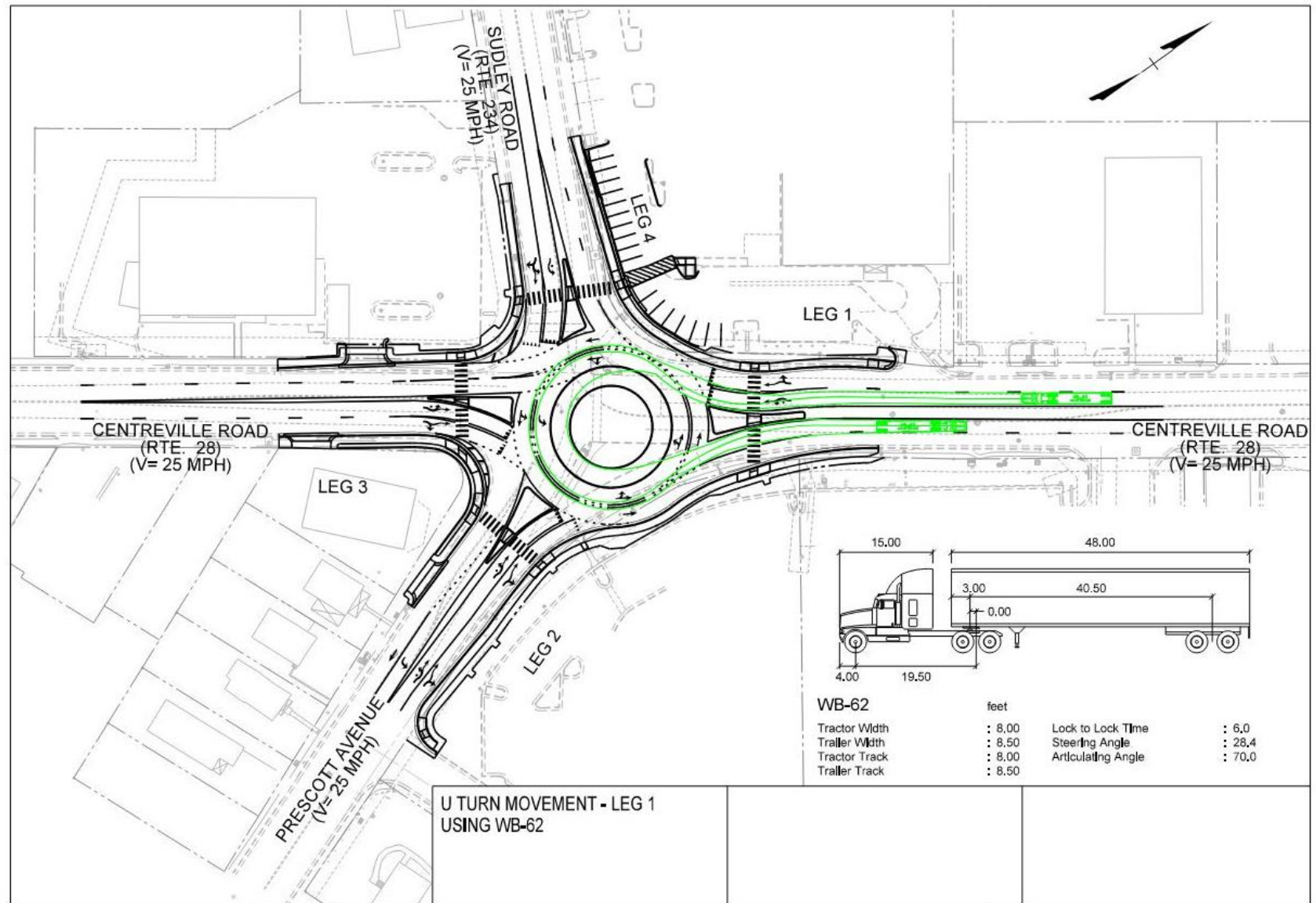
AUTOTURN AT ROUNDABOUT



WB-62		feet	
Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 70.0
Trailer Track	: 8.50		

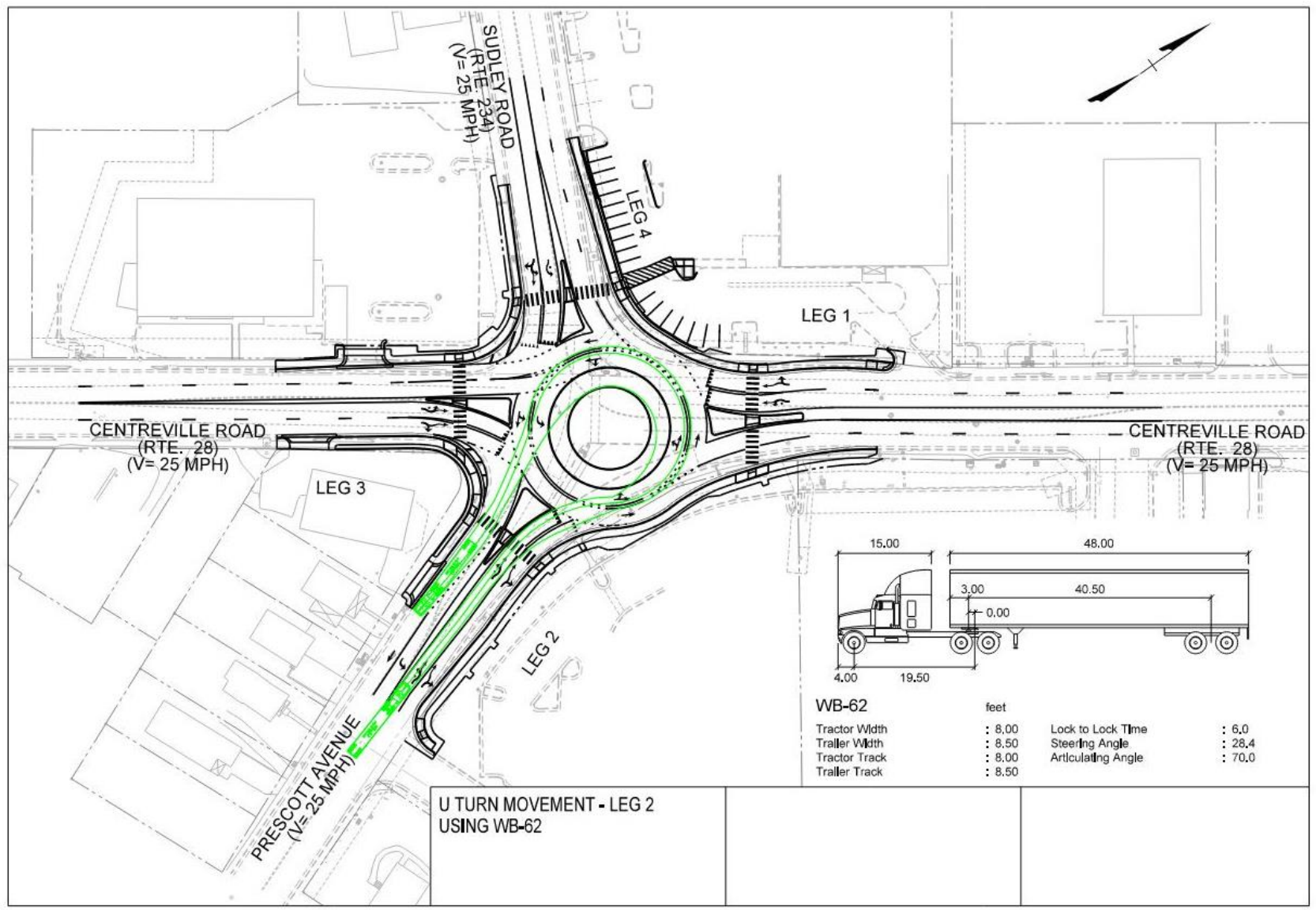
LEFT TURN MOVEMENT - LEG 4
USING WB-62

AUTOTURN AT ROUNDABOUT



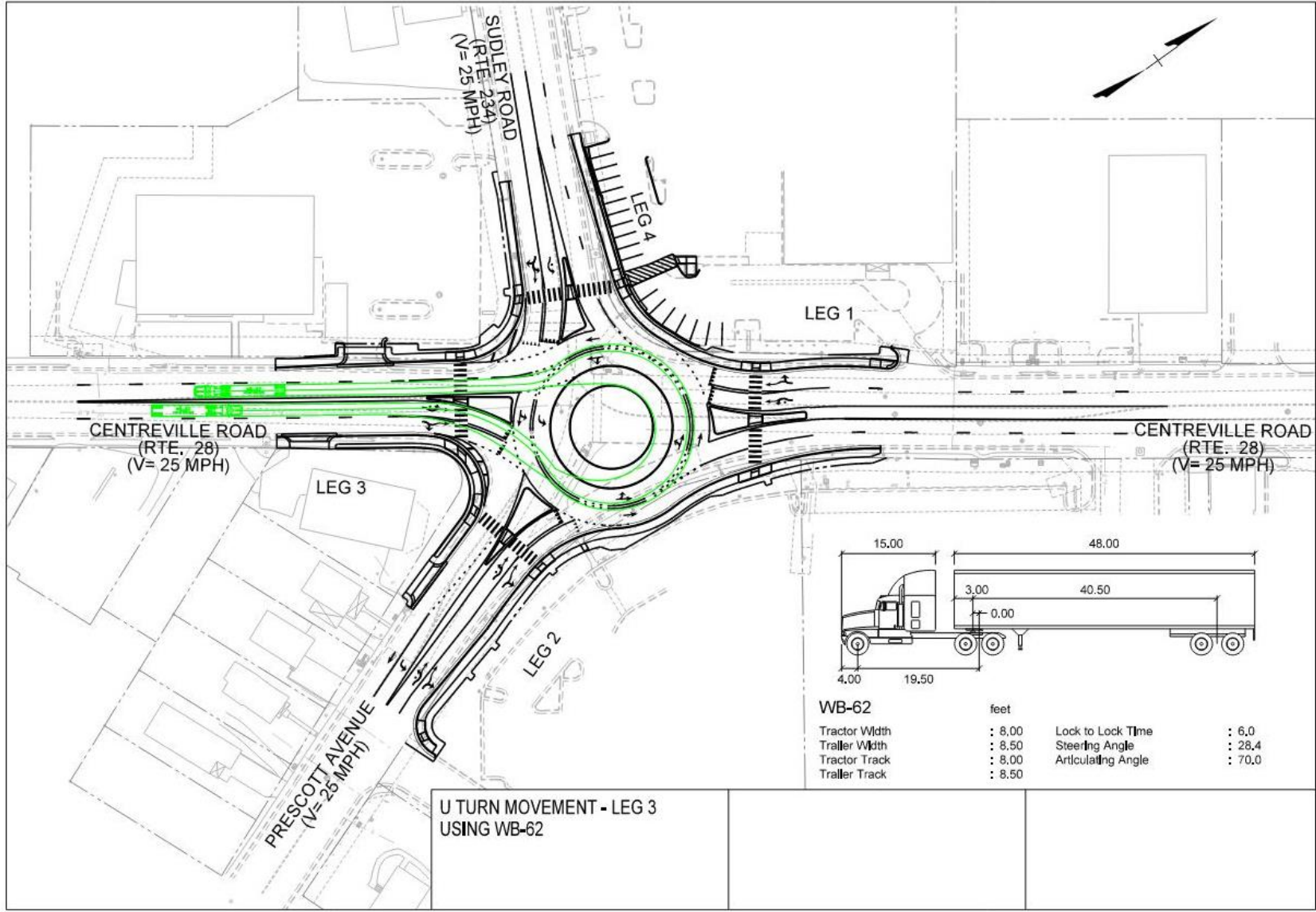
U TURN MOVEMENT - LEG 1
USING WB-62

AUTOTURN AT ROUNDABOUT



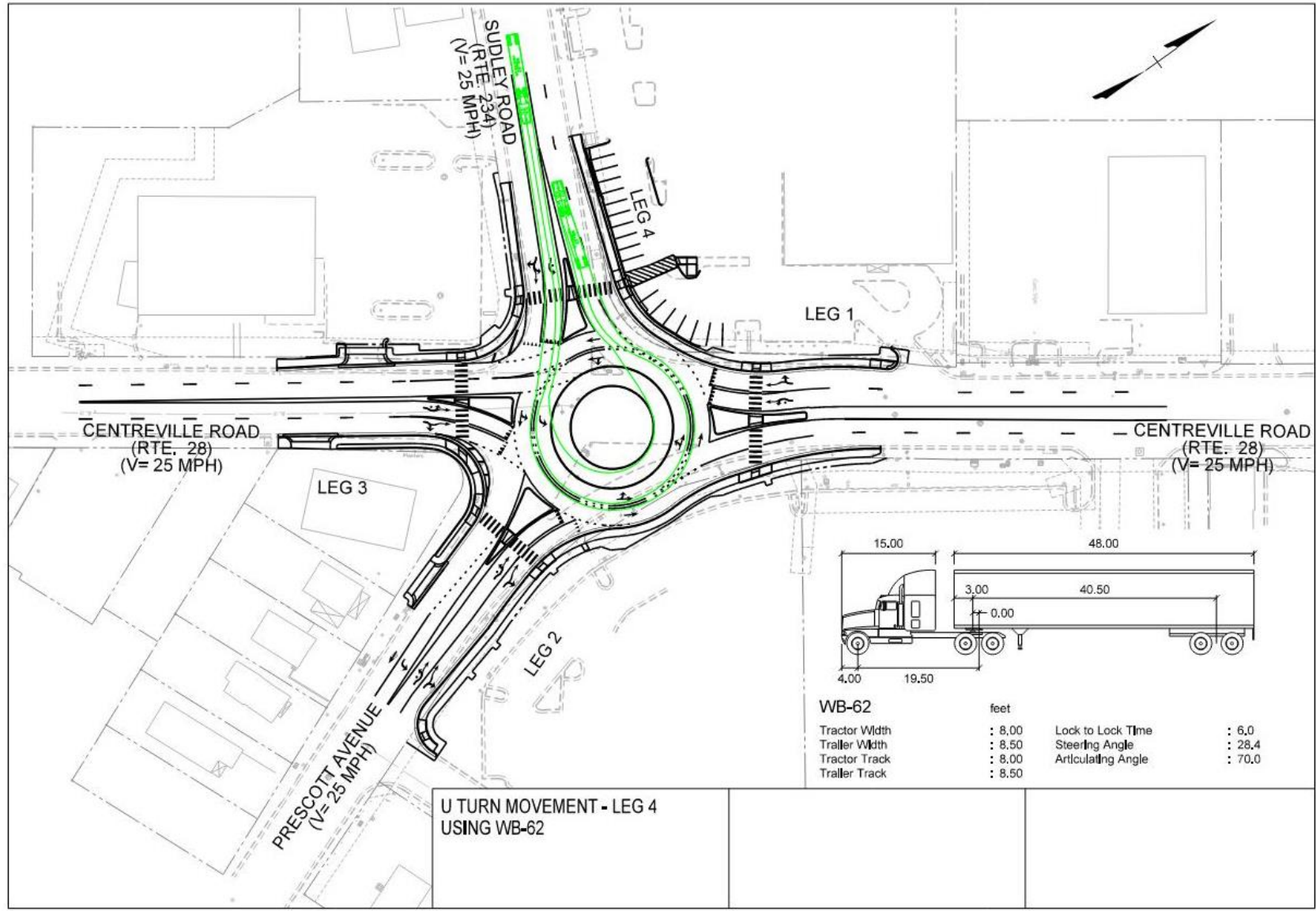
U TURN MOVEMENT - LEG 2
USING WB-62

AUTOTURN AT ROUNDABOUT



U TURN MOVEMENT - LEG 3
USING WB-62

AUTOTURN AT ROUNDABOUT



U TURN MOVEMENT - LEG 4
USING WB-62

Project Funding and Schedule

Project Funding

- Currently, the project is partially funded in the City of Manassas FY 2023 Capital Improvement Program (CIP). The project is estimated to cost \$3.8M
 - 80% Federal Funds Anticipated
 - 20% Local Funds (NVTA)
- Federal funds are being sought to fully fund this project. A RAISE grant application was submitted in April 2022

Proposed Schedule

- Collect & Respond to Public Feedback
- Complete Pre-Final Design (90%) – Winter 2022
- Acquire Right-of-Way and Easements – Summer 2023
- Complete Final Design – Fall 2023
- Construction Letting and Award – Winter 2023
- Complete Construction – Winter 2024

Note: Schedule is based on funding availability and assumes federal funds are awarded.

Public Feedback

Comments or Questions?

- Please visit the City of Manassas website project page to upload any comments or questions regarding the proposed project: www.manassasva.gov/roundabout

THANK YOU