

Chandler St – May St

Intersection and Roadway Improvements



The City of
Worcester

Department of
Transportation & Mobility



Project Team



The City of
Worcester



- Department of Transportation & Mobility (DTM)

- Stephen Rolle, P.E., Commissioner
- Todd Kirrane, Assistant Director
- Brian Pigeon, Senior Transportation Planner

- Department of Public Works

- John Westerling, Commissioner
- Sean Divoll, P.E., Assistant Commissioner – Water & Sewer

- Amanda Bazinet, P.E., Project Manager
- Sam Greelis, P.E., Project Engineer
- Christine Champeau, P.E., Deputy Chief Engineer



Meeting Overview

- Introduction
- Project history and timeline
- Why roundabouts?
- Chandler St – May St design details
- What to expect during construction
- Q&A



Introduction

- Location:
 - Chandler St and May St in the vicinity of Worcester State University.
- Traffic characteristics

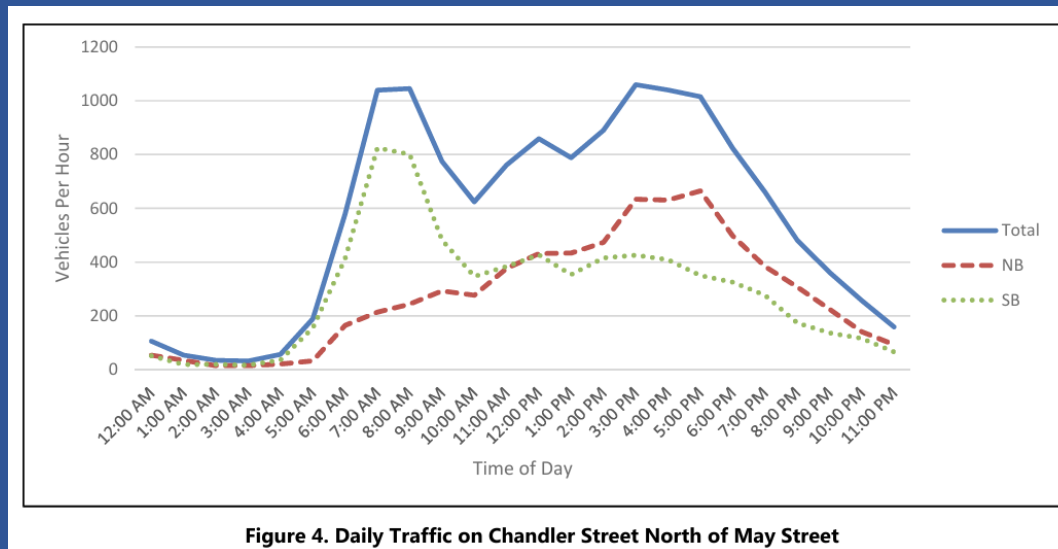


Figure 4. Daily Traffic on Chandler Street North of May Street



Project Introduction

- Components:
 - Roundabouts at both May St intersections.
 - Resurface and reconfigure roadway to reduce excessive width.
 - Replace and expand sidewalks and shared use paths.
 - Provide additional crosswalks.
 - Provide on-street parking on both sides of the street.
 - Streetscape and landscaping improvements.



Project purpose

- Safer and easier turns at May St intersections
 - LOS F conditions for left turning movements at both May St intersections during peak periods
 - Northerly intersection previously identified by MassDOT as a high crash cluster (2015-17).
 - 46% of crashes involved left turning traffic.
 - 50% of crashes occur between 8 am and Noon.
 - 64% of crashes at the southerly May St intersection involved left turns.



Project purpose

- Manage Speeding
 - Speed limit is 20 mph in school zones during school hours and 25 mph at other times.
 - Average corridor speed is 30 to 33 mph
 - 15 percent of traffic is traveling 38 mph or faster.



Project purpose

- Safe, convenient and comfortable pedestrian accommodations
 - Pedestrian fatality in 2019.
 - Pedestrians cross both directions of Chandler St without a center median refuge.
 - Excessive crosswalk lengths.
 - High speed right turns from Chandler St.
 - High proportion of rear-end crashes at crosswalks.
 - Gaps in network.



Project purpose

- Restore pavement condition and improve streetscape
 - Current Pavement Condition ranges from 46 to 72 pci.
 - Sidewalks in fair to poor condition.
 - Excessive amount of pavement currently.
 - Highway-style street lights with some gaps in coverage.



Project history and timeline

- 2015** Initial site visit and community meeting.
- 2016** DPW&P communication to City Council recommends pursuit of TIP funding for improvements to Chandler St in vicinity of WSU and implementation of interim traffic safety improvements in the near-term.
- 2017** City Council concurs with DPW&P recommendation concerning TIP project and interim improvements.
Chandler St - May St project approved for inclusion in the CMMPO TIP.
- 2018** Interim lane marking and crosswalk safety improvements implemented.
TIP project initiated with engineering firm VHB.
- 2020** Road Safety Audit completed.
- 2021** 10% Design completed for double roundabout preferred alternative.
Functional Design report completed.
- 2022** City launches project website.
Design public hearing (June 2022) held on 25% Design plans.
- 2023-24** Ongoing coordination and design refinements with WSU.
- 2025** 75% Design plans completed.
- 2026** 100% Plans. Specifications & Estimates completed.
City initiates right-of-way process.
- 2027** Anticipated construction bid and start of construction



TIP – Transportation Improvement Program

- 5-yr capital improvement program that allocates USDOT transportation funding statewide.
- Administered by MassDOT and the Central Massachusetts Metropolitan Planning Organization (CMMPO).
- \$159 million in roadway funding allocated in Central Massachusetts region (2027-2031).



TIP – Transportation Improvement Program

- City of Worcester is responsible for design and right-of-way acquisition costs.
 - \$980,000 expended to date.
- Federal and State funding pays for construction.
 - \$10.1 million construction cost estimate.
- City of Worcester oversees the design process with participation by MassDOT and subject to state and federal policies.
- MassDOT will manage construction.



Roundabouts vs. Rotaries

Roundabout



Rotary



Why roundabouts?



Millbury, Massachusetts



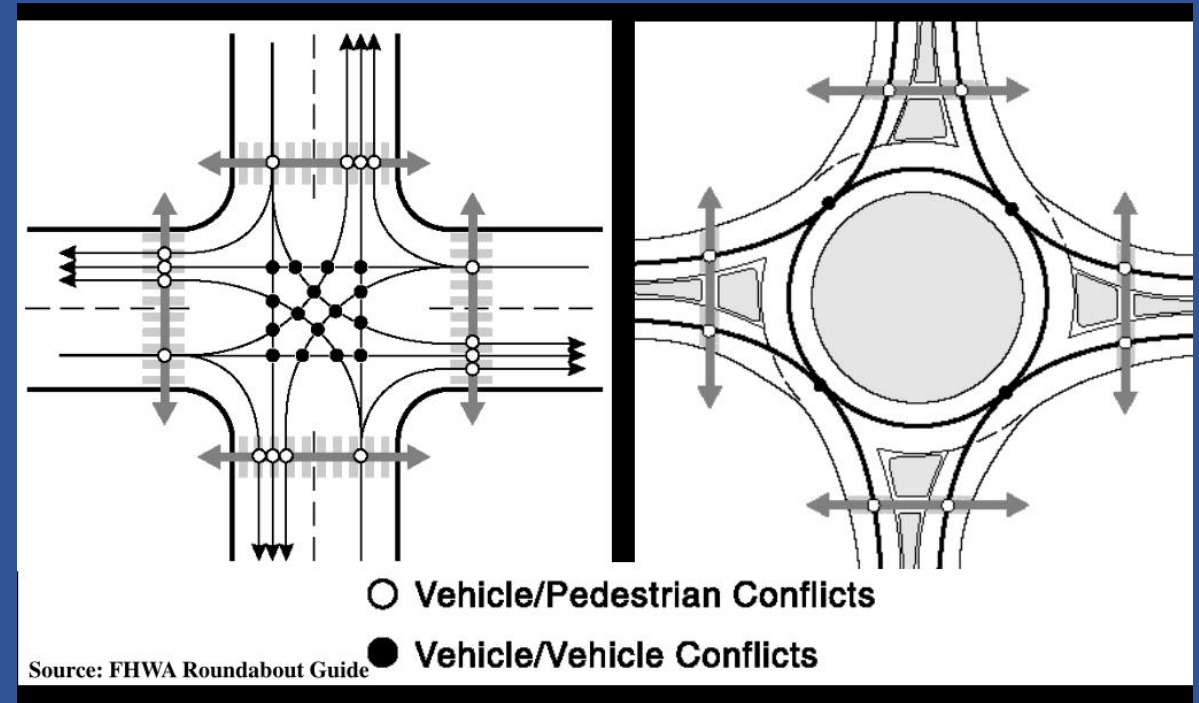
Why Roundabouts?

- “Roundabouts are a safer alternative to traffic signals and stop signs.” - *Insurance Institute for Highway Safety (IIHS)*
- “Roundabouts are not only a safer type of intersection; they are also efficient in terms of keeping people moving.” – *Federal Highway Administration (FHWA)*
- “Roundabouts are more efficient than stop-controlled intersections and eliminate wasted time waiting at red-lights at traffic signals. Roundabout vehicle queues waiting to enter the intersection generally keep moving and can be shorter than at traffic signals.” - *MassDOT*
- “The physical characteristics of a well-designed modern roundabout reduce the frequency and severity of intersection crashes for all users including pedestrians and bicyclists.” – *Rutgers University Center for Advanced Infrastructure and Transportation*
- “Highly effective [pedestrian safety] countermeasures include single-lane roundabouts, sidewalks, exclusive pedestrian signal phasing, pedestrian refuge islands, and increased intensity of roadway lighting.” – *American Journal of Public Health*



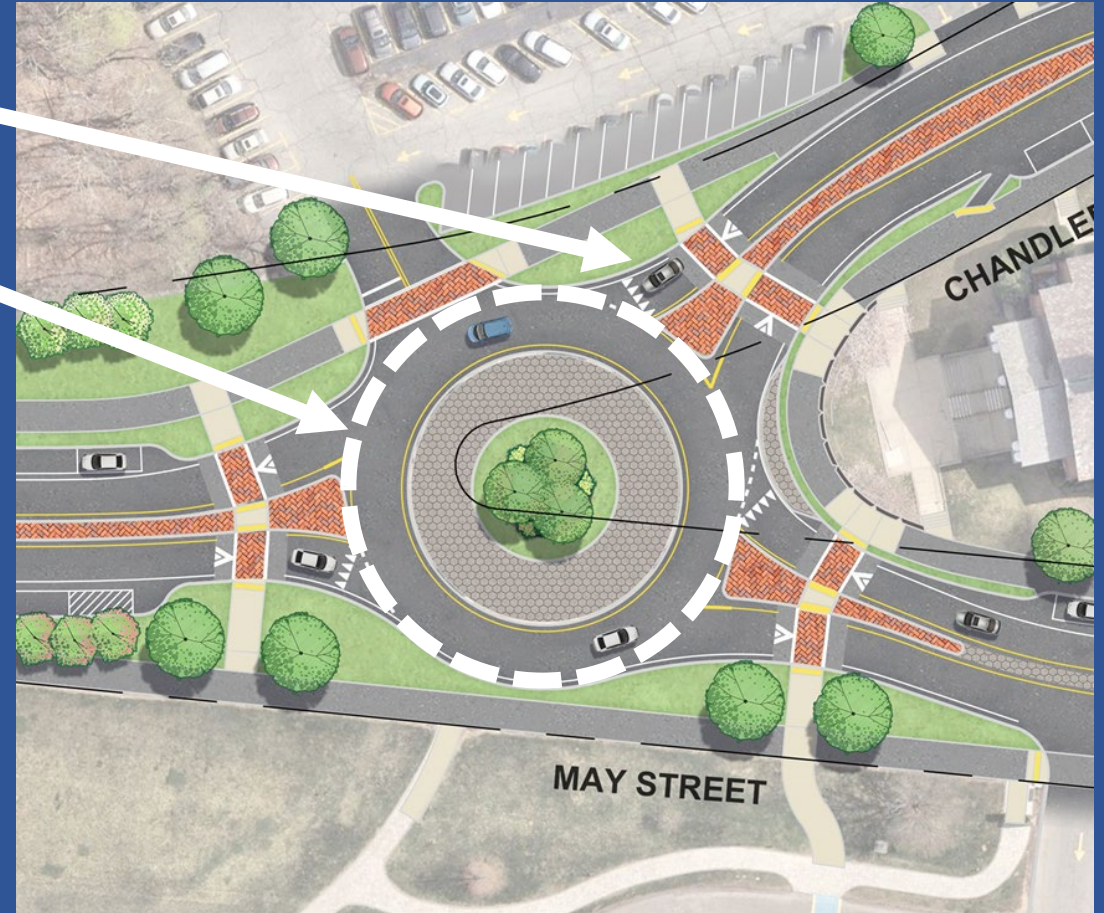
Roundabout Advantages

- Less vehicle delay than intersections with traffic signals or all-way STOP control
- 78% to 82% reduction in fatal and injury crashes compared to signalized or two-way STOP controlled intersections respectively (FHWA).
- 40% reduction in all crashes (IIHS, NYDOT)
- 15% reduction in total pedestrian and bicycle crashes (MNDOT 2023)
- 70% reduction in fatal + serious injury pedestrian and bicycle crashes (MNDOT 2023)



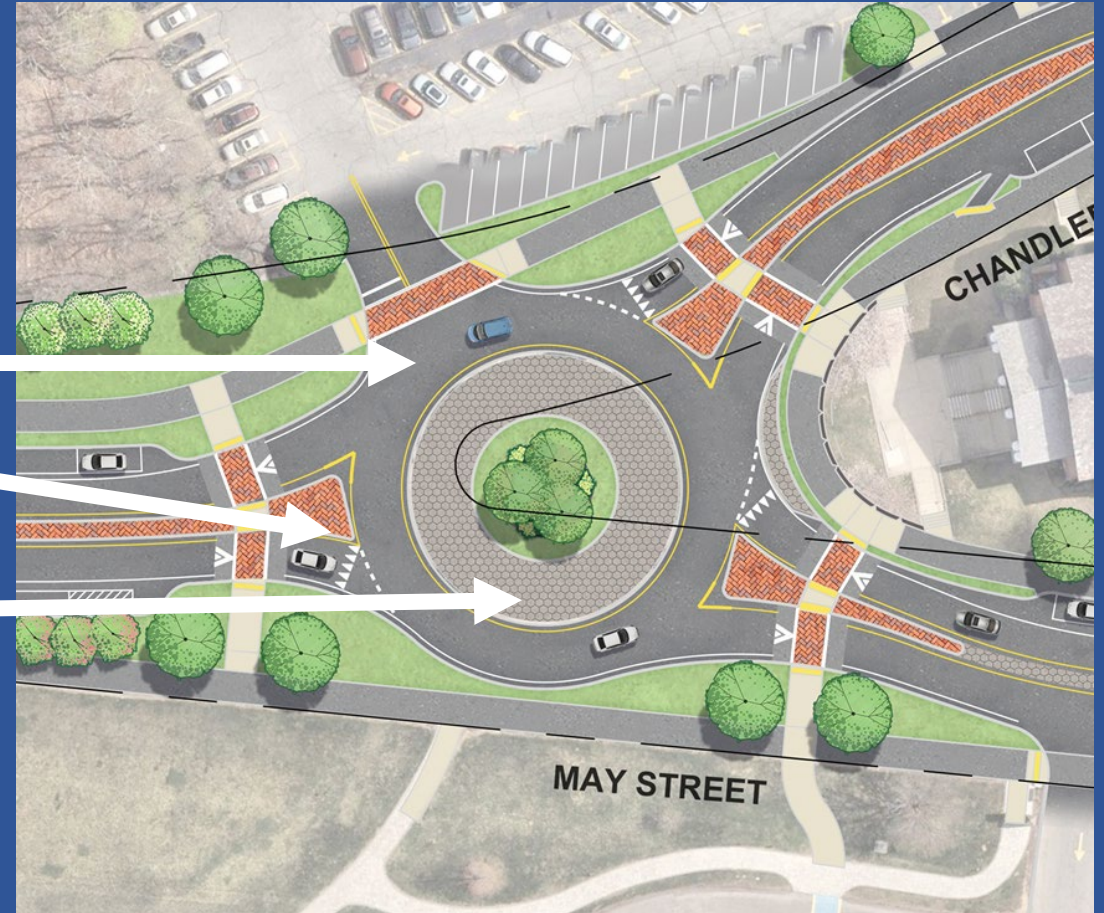
Modern roundabout features

- Approach and exit deflection to slow entering and exiting vehicles.
- Small diameter to promote safe circulating speeds.



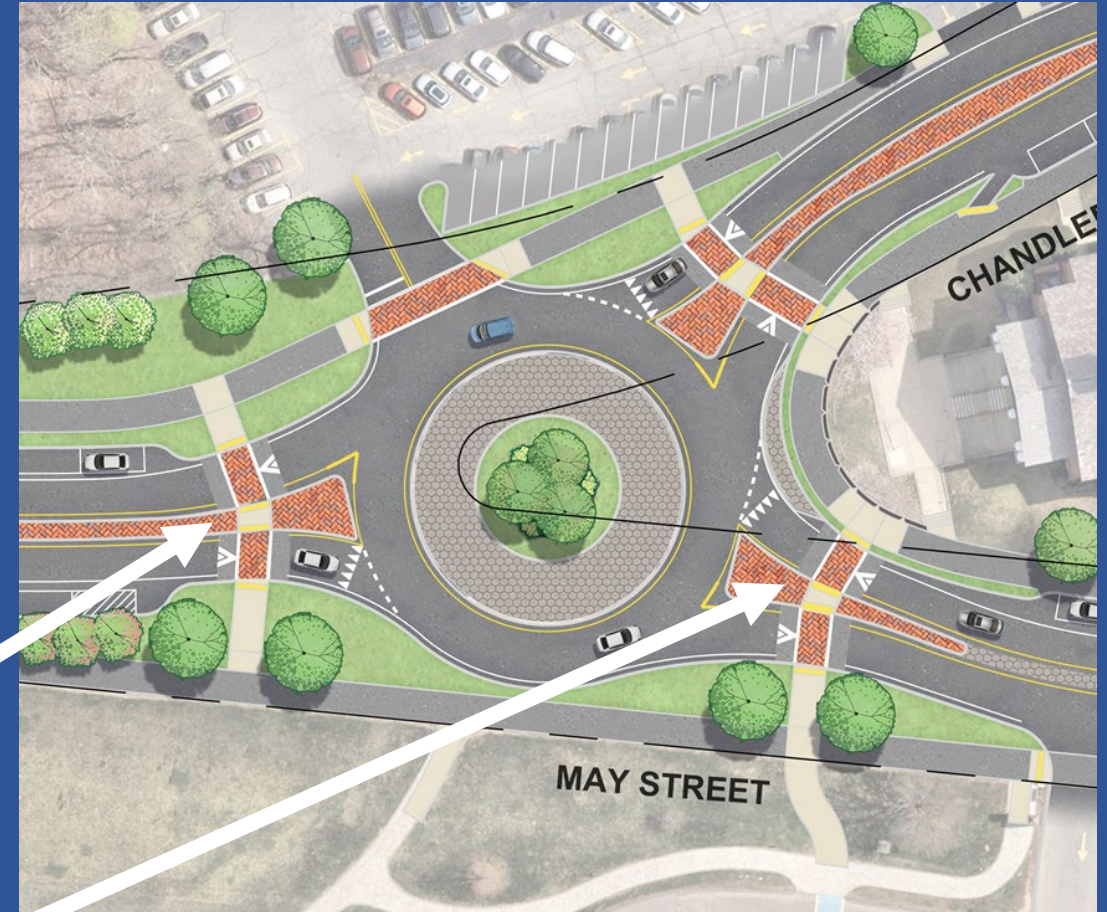
Modern roundabout features

- Approach and exit deflection to slow entering and exiting vehicles.
- Small diameter to promote safe circulating speeds.
- Single lane circulation, entry and exit
- Entering traffic yields to traffic in the roundabout.
- Truck apron accommodates larger vehicles



Modern roundabout features

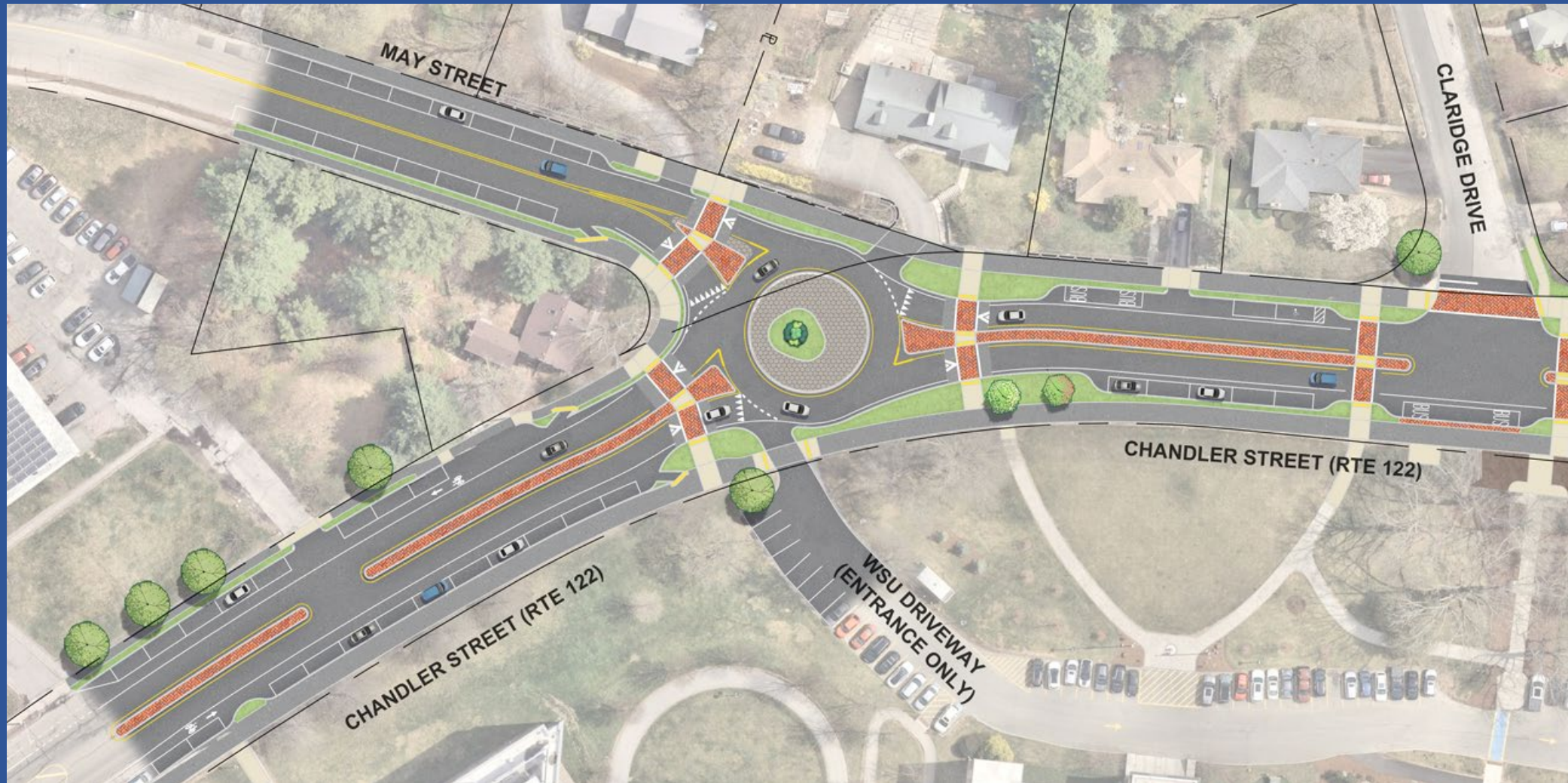
- Approach and exit deflection to slow entering and exiting vehicles.
- Small diameter to promote safe circulating speeds.
- Single lane circulation, entry and exit
- Entering traffic yields to traffic in the roundabout.
- Truck apron accommodates larger vehicles
- Crosswalks separated from driver decision points
- Splitter islands provide pedestrian refuge at crosswalks and separate traffic.



Chandler St – May St Design Details



North section



Central section



South section



Parking

- Parking provided on both sides of Chandler St and May St
 - 75 on-street parking spaces within the project area.
 - Net reduction of 21 spaces.
 - Parking spaces are eliminated within intersection areas and in close proximity to crosswalks.
- 1772 parking spaces on campus.
 - Project will eliminate 2 spaces on the remote parking lot across from the former Temple Emanuel.



Pedestrian Safety

- Added raised crosswalks at May St (north)
- Consolidated crosswalks at May St School
- Raised intersection at Hamill Rd



Pedestrian Safety

- Crosswalks set away from the circulating path.
- Center median pedestrian refuge – pedestrians cross one direction of traffic at a time.
- Raised crosswalks at roundabouts.
- RRFBs are being recommended at all approaches and exits as well.



Bicycles

- Shared use paths (10 ft) on both sides of the street connecting each roundabout.
- Entry and exit ramps for bikes.
- More confident riders are still able to continue using the travel lane as allowed under Massachusetts General Laws.

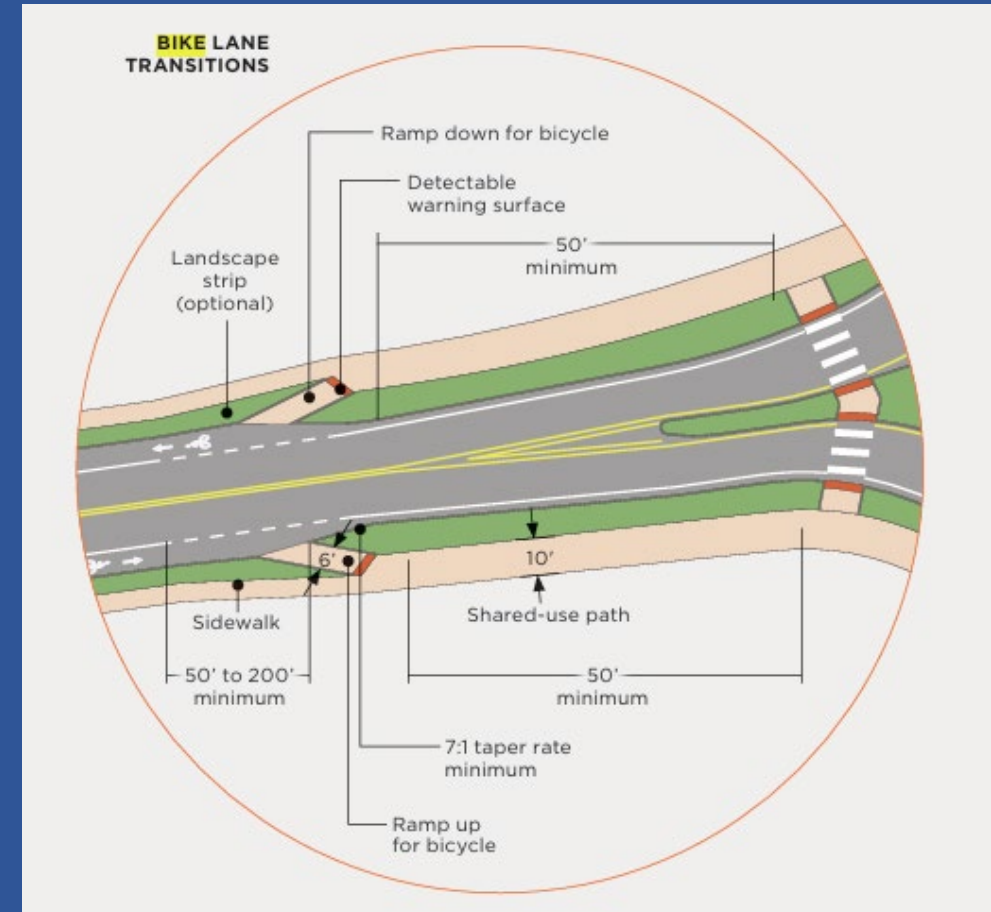


Image: MassDOT Guidelines for the Planning and Design of Roundabouts



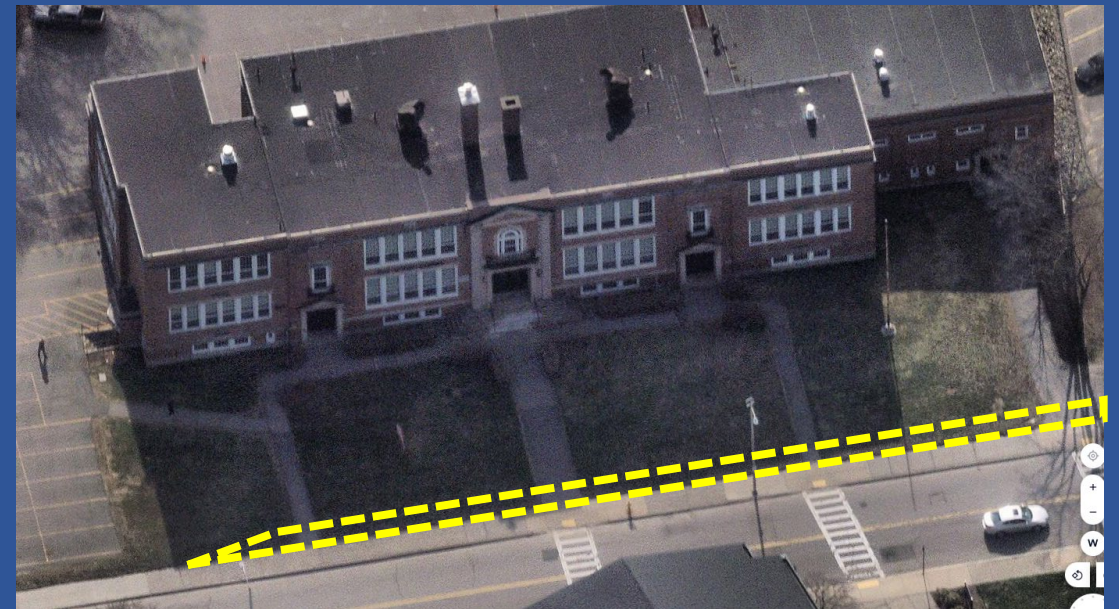
Property Impacts

- Although most of the project will be built within the existing right-of-way, five parcels will require permanent easements. These easements do not affect any buildings and mostly involve non-residential properties.
- All affected property owners have been notified by certified mail and the project team is offering individual consultations.
- Appraisals, negotiations, and compensation are carried out in accordance with prescribed federal and state procedures.
- To accommodate this public meeting, the right-of-way process was temporarily paused and will resume shortly. Impacted property owners will receive formal just compensation offers based on the appraisals.



Property Impacts

- 265 May Street (May Street School): 961 square feet along the frontage to improve the existing sidewalk and improve bus loading zones (WRTA and school)
- 525 Chandler Street (Worcester Dual Language Magnet School): 36 square feet to address utility pole guy wire location.



Property Impacts

- 485 Chandler Street (Parking lot owned by the Worcester State Foundation): 701 square feet of property along the frontage.
- 280 May Street (former Temple Emanuel property owned by the Worcester State Foundation): 7,341 square feet predominately at the west end of the property to accommodate the intersection layout. Also includes a narrow strip along May St to accommodate on-street parking.



Property Impacts

- 310 May Street (private residence): 28 square feet to address an existing sidewalk encroachment.



Temporary Easements

- The project will also need to secure temporary easements during the construction period to facilitate construction work and to adjust walkways, driveways and other private property features so that they interface smoothly with the public street.
- The process is the same as for permanent easements - all affected property owners have been notified by certified mail and offered consultations with the project team.
- Appraisals, negotiations, and compensation are carried out in accordance with prescribed federal and state procedures. Impacted property owners will receive formal just compensation offers based on the appraisals.



Tree removal

- 10 trees in the public right-of-way will need to be removed to reconstruct sidewalks to current standards.
 - Trees were reviewed by the City's tree warden.
 - 2 trees were found to be diseased and will be removed.
 - 8 trees approved for removal following a public hearing.
- 3 tree removals on the former Temple property.
- 8 trees removals on two private properties on May St.
 - Property owners will receive just compensation
- 35 new trees will be planted.



Construction

- Construction means and methods are determined by the contractor
- Construction laydown area is negotiated privately between contractor and any property owner
- The City of Worcester and MassDOT will dictate certain terms:
 - Safe access (vehicular and pedestrian) must be maintained to all properties.
 - Traffic must be maintained in both directions except for brief interruptions.
 - Detours and night work not anticipated.
 - MassDOT oversees construction and has ability to deny unacceptable terms by contractor.

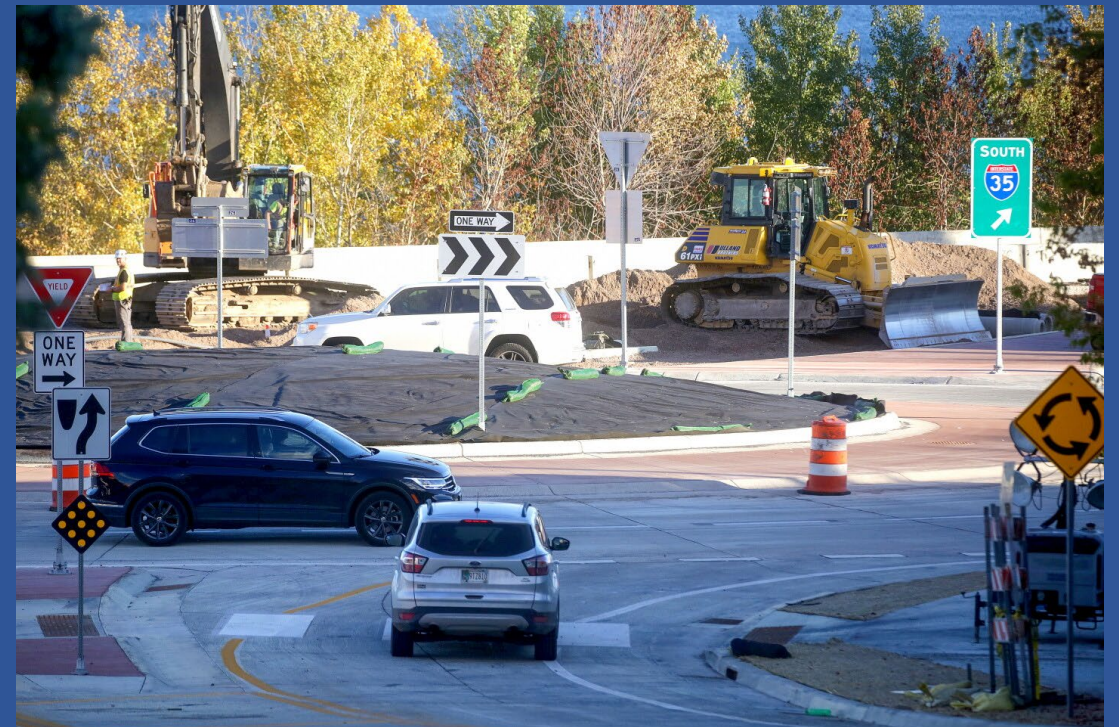
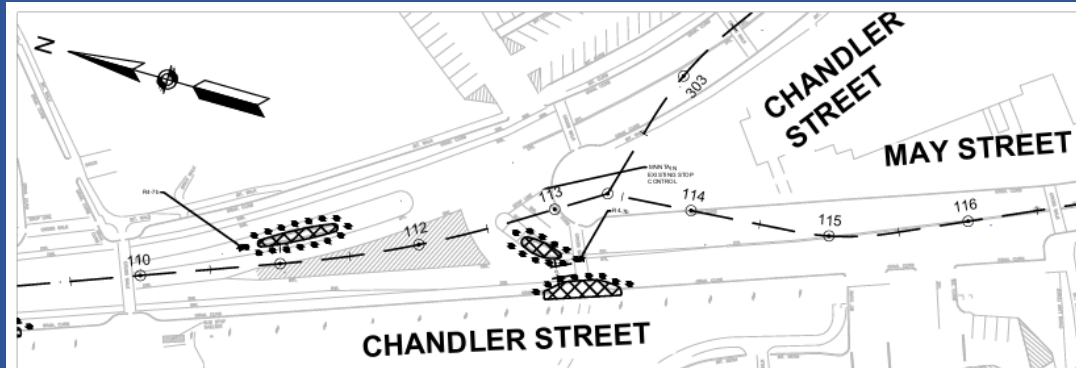


Image: Duluth News

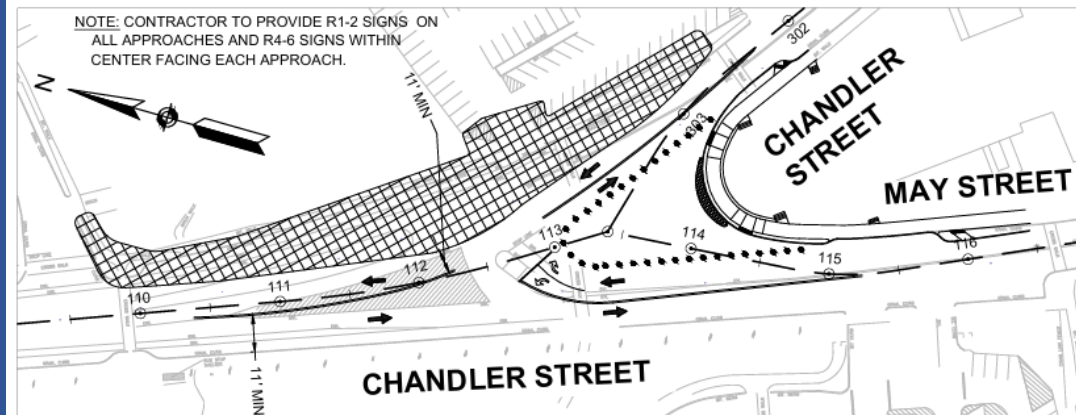


Potential traffic sequencing



SCALE: 1"=60'

STAGE 1



SCALE: 1"=60'

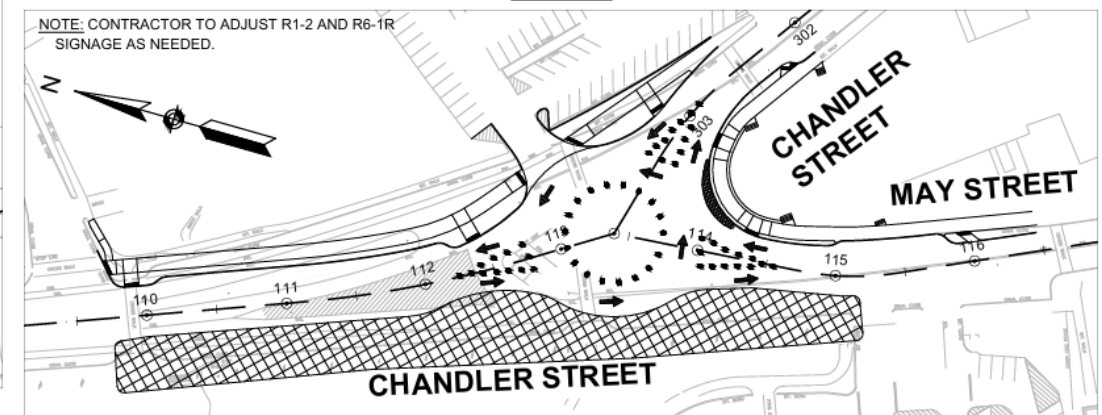
STAGE 3

NOTE: CONTRACTOR TO ADJUST R1-2 AND R6-1R



SCALE: 1"=60'

STAGE 2

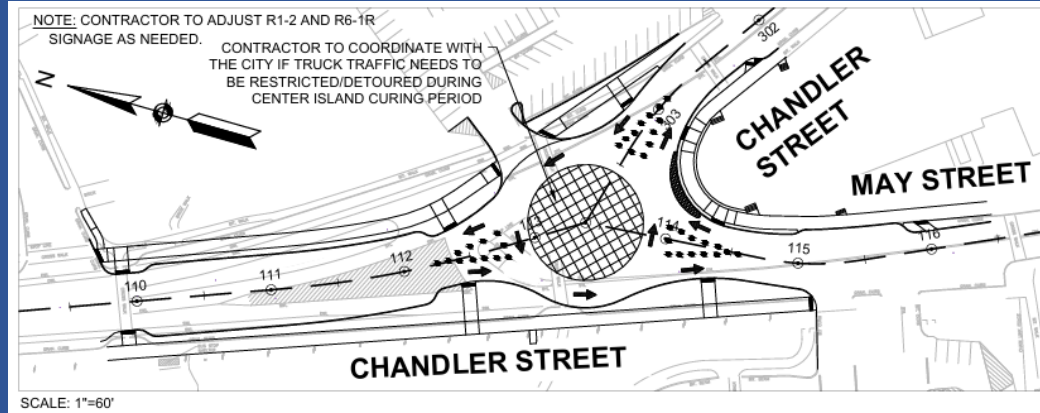


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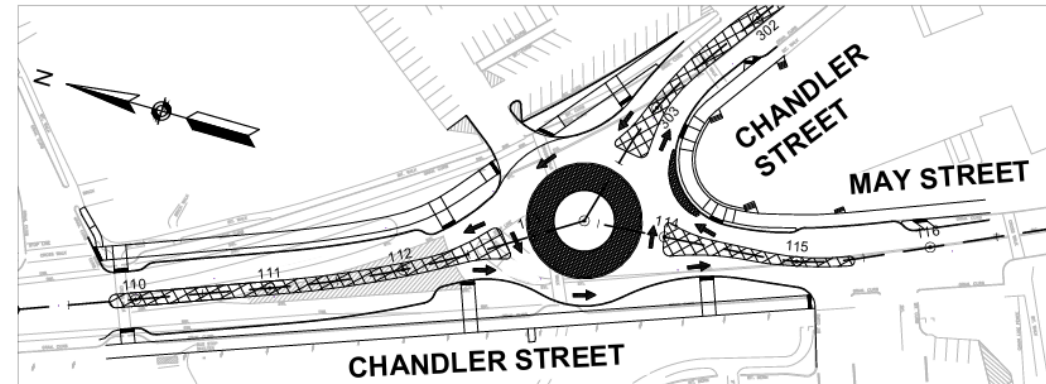
STAGE 4



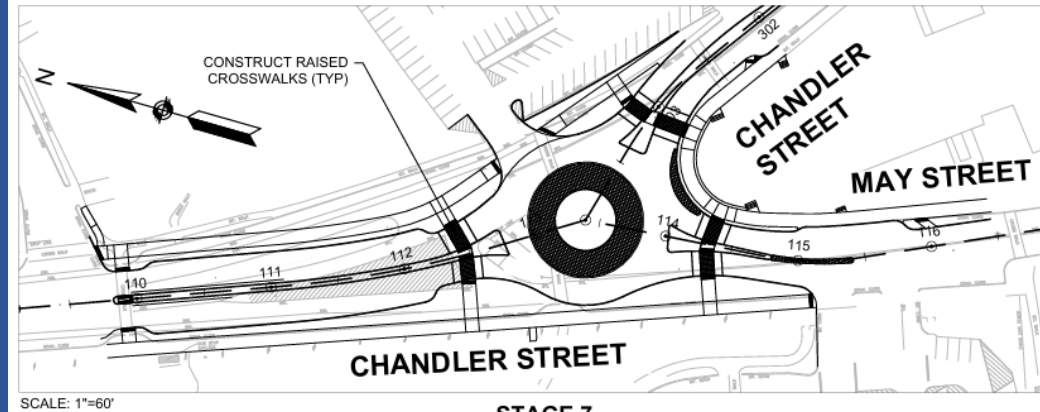
Potential traffic sequencing



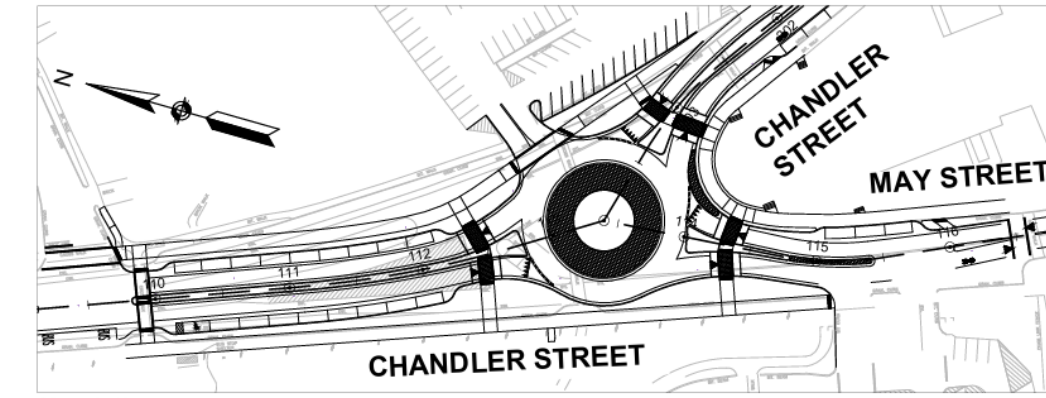
STAGE 5



STAGE 6



STAGE 7



STAGE 8

Construction Schedule

- Months 0-6: Advertise, bid, award and contracting.
- Months 7–15 (Construction Season 1): Utility relocations (National Grid, Charter, Crown Castle, Verizon, and Eversource)
- Months 19–28 (Construction Season 2): Initial demolition of existing islands and bump-outs, curb work, and temporary pavement. Main intersection reconstruction, including full-depth pavement, drainage, curbing, sidewalks/shared-use paths, center islands, truck aprons, splitter islands, medians, and raised crosswalks.
- Months 31–33 (Construction Season 3): Final project-wide paving, pavement markings, signs/RRFBs, lighting, landscaping, loam and seed, and bus shelter installation.
- Month 33: Substantial Completion.
- Months 33–35: Punch-list work, final inspection, and closeout documentation.



Thank You!

Find out more at:

<https://www.worcesterma.gov/mobility/projects-engineering/chandler-street-may-street-improvements>

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