



Public Facilities Committee Agenda

City of Newton In City Council

Wednesday, January 20, 2021

The Public Facilities Committee will hold this meeting as a virtual meeting on Wednesday, January 20, 2021 at 7:00 pm. To view this meeting using Zoom use this link: <https://us02web.zoom.us/j/81626511825> or call 1-646-558-8656 and use the following Meeting ID: 816 2651 1825

Item Scheduled for Discussion:

Referred to Public Facilities and Finance Committees

- #39-21** **Appropriate \$256,000 from the Washington Place Special Permit Mitigation Fund**
HER HONOR THE MAYOR requesting authorization to appropriate and expend the sum of two hundred and fifty-six thousand dollars (\$256,000) from the Washington Place Special Permit Mitigation Fund for the purpose of pedestrian enhancement design on a portion of Washington Street including design and bid preparation for fence replacements, fence artwork, landscaping and sidewalk installation on the south side of the street from Lowell Avenue to Walnut Street.

Chair's Note: Public Safety & Transportation will join the Committee to discuss the following 3 items.

- #22-21** **Request for approval of Commonwealth Ave/Auburn Street Concept Design**
COMMISSIONER OF PUBLIC WORKS requesting, on behalf of Mass DOT, approval of the concept redesign plan for the intersection of Commonwealth Avenue and Auburn Street.

The location of this meeting is accessible and reasonable accommodations will be provided to persons with disabilities who require assistance. If you need a reasonable accommodation, please contact the city of Newton's ADA Coordinator, Jini Fairley, at least two business days in advance of the meeting: jfairley@newtonma.gov or (617) 796-1253. The city's TTY/TDD direct line is: 617-796-1089. For the Telecommunications Relay Service (TRS), please dial 711.

Referred to Public Safety & Transportation, Zoning & Planning Committees and Public Facilities Committees

- #506-20** **Discussion with Police, DPW and Inspectional Services on sidewalk obstructions**
COUNCILORS DOWNS, LEARY, ALBRIGHT & BOWMAN requesting a discussion with Police, Public Works and Inspectional Services regarding sidewalk obstruction, enforcement, regulation, and operating procedures during construction used to ensure safety for nonmotorized road users.

Referred to Public Facilities and Public Safety & Transportation Committees

- #533-20** **Requesting a discussion regarding snow clearing, operations and enforcement**
COUNCILORS DANBERG, MARKIEWICZ, BOWMAN, DOWNS AND NOEL requesting a discussion with the Department of Public Works and the Police Department regarding residential and commercial sidewalk snow clearing, operations and enforcement.

Respectfully submitted,

Alison M. Leary, Chair



Ruthanne Fuller
Mayor

City of Newton, Massachusetts
Office of the Mayor

39-21

Telephone
(617) 796-1100

Fax

(617) 796-1113

TDD/TTY

(617) 796-1089

Email

rfuller@newtonma.gov

January 11, 2021

Honorable City Council
Newton City Hall
1000 Commonwealth Avenue
Newton, MA 02459

Honorable City Councilors:

I respectfully submit this docket item to this Honorable Council requesting the authorization to appropriate and expend the sum of \$256,000 from the Washington Place Special Permit Mitigation Fund for the purpose of pedestrian enhancement design on a portion of Washington Street including design and bid preparation for fence replacements, fence artwork, landscaping and sidewalk installation on the south side of the street from Lowell Avenue to Walnut Street.

My request was developed in collaboration with the Ward Two City Councilors and the Washington Place Liaison Committee members.

Please see the attached memo from DPW Commissioner James McGonagle and Planning & Development Director Barney Health regarding the project. To date, there have been no appropriations or expenditures of this \$700,000 project mitigation fund.

Thank you for your consideration of this matter.

Sincerely,

Mayor Ruthanne Fuller

RECEIVED
2021 JAN 11 11:30 AM
CITY CLERK
NEWTON, MA 02459

City of Newton

DEPARTMENT OF PUBLIC WORKS

39-21

Ruthanne Fuller

Mayor

OFFICE OF THE COMMISSIONER

1000 Commonwealth Avenue
Newton Centre, MA 02459-1449

To: Maureen Lemieux, Chief Financial Officer
Jonathan Yeo, Chief Operating Officer

From: James McGonagle, Commissioner of Public Works
Barney S. Heath, Director of Planning and Development

Subject: Request to Appropriate \$256,000 from the Washington
Place Special Permit Mitigation Funds

Date: January 8, 2020

We write to request that the Mayor docket the following request to appropriate and expend two hundred fifty-six thousand dollars (\$256,000) from the Washington Place Mitigation Fund for design of pedestrian enhancements and sidewalk installation on the south side of Washington Street between Lowell Avenue and Walnut Street.

The request was developed in consultation with the Ward Two Councilors and the Washington Street Liaison Committee. Attached is the quote for design services for pedestrian enhancements including fence design and landscaping. In addition, a cost estimate for sidewalk installation is attached.

Thank you for your consideration of this matter.

James McGonagle
Commissioner

Telephone: (617) 796-1009 • Fax: (617) 796-1050 • jmcgonagle@newtonma.gov

6/10/2020

This is an Order of Magnitude construction cost estimate for a new cement concrete sidewalk along the north side of Washington St from Lowell Ave to Walnut St.

Prices were based on MassDOT Weighted Average Bid Prices for District 6 area.

Sidewalk construction includes the following:

- Removal and resetting of the existing granite curb
- New cement concrete sidewalk

Other

Areas for quantities taken from CAD files.

This estimate does not consider:

1. Right of Way acquisitions
2. Construction year or increases in costs due to inflation
3. Underground utility relocations

CONCEPTUAL COST ESTIMATE - WASHINGTON ST SOUTH SIDE SIDEWALK

4/6/2020

<u>Description</u>	<u>Unit Price</u>	<u>Quantity</u>	<u>Total Cost</u>
Cement Concrete Sidewalk	\$178.00 /SY	525 SY	\$93,450.00
Existing Granite Curb R&R	\$45.00 /FT	800 FT	\$36,000.00
Erosion Control	\$9,700.00 /LS	1 LS	\$9,700.00
Police Detail	\$8,000.00 /ALL	1 ALL	\$8,000.00
		SUBTOTAL:	\$147,150.00
		Mobilization (3%)	\$4,414.50
		Temporary Traffic Control (5%)	\$7,357.50
		Contingencies (25%)	\$36,787.50
		TOTAL:	\$195,709.50
		SAY:	\$196,000

4/6/2020

UNIT COSTS**Cement Concrete Sidewalk**

	<u>Depth (in)</u>	<u>Conversion</u>	<u>Unit Cost</u>	
Cement Concrete Sidewalk at Driveways (Item 701.1)	N/A	N/A	\$136.43 /SY	\$136.43
Gravel Borrow (Item 151)	8.0	0.0278 Yd/in	\$50.00 /CY	\$11.12
Unclassified Excavation (Item 120.1)	12.0	0.0278 Yd/in	\$45.00 /CY	\$15.01
Fine Grading and Compacting (Item 170)	N/A	N/A	\$15.00 /SY	\$15.00
			<u>per SY Total=</u>	<u>\$178.00</u>

4/6/2020

UNIT COSTS

Erosion Control

Silt Sacks	\$250.00 /EA	3 EA	\$750.00
Compost Filter Tubes	\$10.00 /FT	895 FT	\$8,950.00
		<u>Total Erosion Control =</u>	<u>\$9,700.00</u>

ENVIRONMENTAL PARTNERS

November 13, 2020

James McGonagle, Commissioner of Public Works
Department of Public Works
1000 Commonwealth Avenue
Newton, MA 02459

RE: Pedestrian Enhancements along Washington St. from Lowell Ave. to Walnut St.

Dear Mr. McGonagle:

Environmental Partners (EP) and Klopfer Martin Design Group (KMDG) are pleased to submit the following proposal for professional engineering and landscape architectural design services for the Pedestrian Enhancements along Washington Street from Lowell Avenue to Walnut Street project. The project is anticipated to consist of the following:

- Fence replacement along the southern side of Washington Street from east of Lowell Avenue to approximately 170 feet east of Walnut Street
- Landscape zone including planting and possible paved surfaces and furniture along the southern side of Washington Street from 270 feet west of Walnut Street to approximately 170 feet east of Walnut Street
- Opportunities for the integration of fence artwork will be identified, although neither the creation nor selection of artwork selection is included in the below Scope of Services
- Any previously discussed gateway treatments (at the Walnut Street intersection) are not included in the below Scope of Services
- Opportunities for locating way-finding signage will be identified but the below Scope of Services does not include involvement with a way-finding consultant or the design of the wayfinding

The project is anticipated to be reviewed through the City only. For budgeting purposes, no reviews or coordination is anticipated with MassDOT and/or MBTA. Likewise, it is anticipated that the City will handle all MassDOT/MBTA coordination, right-of-way, permitting and public outreach; this Scope of Services does not involve right-of-way or permitting assistance.

Scope of Services

The proposed project includes preparation of conceptual design and engineering design, and preparation of bid documents (plans, specifications, and estimate) in an efficient manner.

1. Base Plan Review / Site Visits

- a. The City will perform topographic survey and prepare/provide a base plan adequate for the design of the subject project in AutoCAD Civil3D. This will include the sidewalk and the area south of the sidewalk and south of the existing fence including topography, trees

and shrub areas. All trees greater than 3" caliper shall be captured in the survey. This shall include the extent of canopy and the type of tree. EP and KMDG (the Team) will perform a site visit to verify major visible conditions are reflected; any noticeable lacking information will be reported to the City for further survey and base plan correction. This Scope of Services does not include field measurements, or verifying accuracy of the base plan.

2. *Conceptual Design*

- a. The Team will attend one initial virtual conference call with the City which will include any individuals who will be involved in the review of the subject project in order to identify design and treatment parameters and expectations.
- b. The Team will provide up to three (3) alternatives for a fence treatment to be presented in cut-sheet format. Potential opportunities for the integration of art on the fences will be identified.
- c. One planting strategy will be drawn conceptually in plan-view and colored and will also provide images of selected plants
- d. The above fence alternatives and the conceptual planting strategy will be provided to the City for the City coordinate with city boards/departments and the public. This Scope of Services assumes the Team will not be involved in city or public coordination/meetings. Two-dimensional and three-dimensional rendering are not included in this Scope of Services.
- e. The City will inform the Team of the selected fence treatment and any minor comments on the conceptual planting plan as a result of their internal meetings and public outreach. This Scope of Services assumes that only limited changes will be required and that new concepts will not be required.

3. *Final Design*

- a. The Team will address minor review comments provided by representatives of the City and advance the plans from Conceptual Design phase to Final Design phase incorporating the City-selected fence and minor refinements on the conceptual planting plan. It is anticipated that only minor changes will be made to the design as it advances. For budgeting purposes, regressing in the design process and significant changes in design are not anticipated.
- b. In this phase, the Team will prepare a general plan set including construction plans, landscape plans, details, and also provide a preliminary construction cost estimate.

4. *Bid Document Preparation*

- a. The Team will prepare adequate bid documents for bidding purposes including plans, specifications, and estimate. Also, ENVIRONMENTAL PARTNERS will prepare

supplementary specifications to the Massachusetts Department of Transportation "Standard Specifications for Highways and Bridges" (latest edition) in the form of Special Provisions which shall incorporate relevant sections of the City's standard specifications where applicable. This work includes the preparation of the bid tabulation and technical specification sections of the contract bid documents. Standard bidding requirements, general conditions, agreement or other information associated with procurement requirements and procedures will be provided by the City.

- b. This Scope of Services presumes that guard rail or available reinforced fence will be available options to address crash loading; the custom structural design of a fence for crash and/or wind loads is not anticipated or included nor is geotechnical exploration or borings.
- c. The Team will provide a final construction cost estimate. The final construction cost estimate will include the quantity, unit price, and estimated cost of all pay items. The estimate will be based on prevailing prices established by MassDOT and recently advertised and awarded projects completed by the City and ENVIRONMENTAL PARTNERS. A bid tab will be prepared and included in the Measurement and Payment section of the bid document providing the quantity for each bid item.
- d. This Scope of Services does not include bid phase or construction phase services.

5. *Meetings / Coordination*

- a. For budgeting purposes, this Scope of Services assumes input from any City departments or boards will only be provided during the below noted meetings and additional discussions and concepting will not be required. Should additional meetings and/or coordination be requested, additional budget will be negotiated.
- b. The Team will attend up to three (3) video conference meetings with representatives of the City. This Scope of Services assumes that all meetings will be via Zoom or another similar platform and that the City will manage public outreach and planning technical coordination/setup.
- c. This Scope of Services assumes the Team will not attend public meetings or meetings with City boards or departments, nor will the Team prepare graphics, renderings or PowerPoint presentations.
- d. No additional coordination time is anticipated outside of the above meetings.

Fee

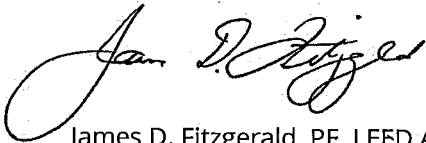
ENVIRONMENTAL PARTNERS proposes a lump-sum budget of **\$59,300** total based on the above outlined Scope of Services and below Fee Schedule.

Fee Schedule

1. <i>Base Plan Review/Site Visits</i>	\$ 6,430
2. <i>Conceptual Design/Renderings</i>	\$ 8,200
3. <i>Final Design</i>	\$24,620
4. <i>Bid Document Preparation</i>	\$ 9,770
5. <i>Meetings/Coordination/Presentation Materials</i>	<u>\$10,280</u>
TOTAL	\$59,300

We appreciate the opportunity to be of service to the City of Newton and look forward to discussing this proposal with you. In the meantime, please do not hesitate to contact me with any questions.

Sincerely,
Environmental Partners Group, Inc.



James D. Fitzgerald, PE, LEED AP
Principal
P: 617.657.0256
E: jdf@envpartners.com



TO:	Robert Antico	DATE:	January 5, 2021
FROM:	Howard Stein Hudson	MASSDOT PROJECT NO.:	110980
SUBJECT:	Background Information for Alternatives at Auburn Street at Commonwealth Avenue		

MassDOT Project 110980 Newton-Weston Bridge Rehabilitation, N-12-010/W-29-005, Route 30 Over the Charles River

The Massachusetts Department of Transportation (MassDOT) project 110980 was initiated to replace the Functionally Obsolete MassDOT-owned bridge N-12-001/W-29-005 that carries Route 30 (South Avenue and Commonwealth Avenue) over the Charles River. To both improve multimodal connections within the project limits and support the phased reconstruction of bridge N-12-001, the scope of work extends east of the Boston Marriott Newton driveways to include the reconstruction of the adjacent intersection of Auburn Street at Commonwealth Avenue.

Auburn Street at Route 30 (Commonwealth Ave)

To support the phased construction of the replacement of Bridge N-12-001, the intersection of Auburn Street at Commonwealth Avenue will be reconstructed to ensure continuous access to all abutting properties and streets through construction. Route 30 at Auburn Street is a signalized intersection that provides a continuous westbound through movement while all other intersection movements operate similarly to a standard T-Intersection. This intersection, owned and maintained by the City of Newton, is abutted by both a speedway gas station and the Newton Historic Boathouse. The existing intersection contains sidewalks on both sides of Route 30 and only on the eastern side of the Auburn Street approach. A signalized crosswalk only exists across the Auburn Street approach while the pavement markings for the crosswalk are no longer visible. The intersection does not currently provide any north-south access for pedestrians or cyclists. 100 feet to the west of Auburn Street, Oakdale Avenue, a City-owned local road, also connects into Route 30 as an unsignalized connection without any restrictions on westbound or eastbound movements. An aerial image of the intersection can be found in **Figure 1**.



Figure 1. Route 30 at Auburn Street Intersection



ALTERNATIVE ANALYSIS:

An alternative analysis was conducted to determine which intersection configuration would provide an optimal configuration for:

- Safety
- Multimodal Accommodations and Connectivity
- Conformance to City of Newton Transportation Goals
- Vehicular Access and Operations
- Project Need and Intent
- Environmental Impacts and Increase of Green Space
- Limited Right of Way (ROW) Impacts

The four intersection types included in the analysis were:

- Traditional T-Intersection
- Mixed Lane Modern Roundabout
- Continuous Green T-Intersection (Florida T-Intersection)
- Displaced Left Turn Intersection configuration.



The standards used for the conceptual design conform to the *Manual on Uniform Traffic Control Devices, 2009 Edition* (MUTCD 2009) with Massachusetts Amendments; the *Highway Capacity Manual* (HCM 6); the American Association of State Highway and Transportation Officials' (AASHTO's) *A Policy on Geometric Design of Highways and Streets*, 7th Edition; MassDOT's Guidelines for the Planning and Design of Roundabouts (2020); MassDOT's *Project Development and Design Guide* (2006); and MassDOT's *Separated Bike Lane Planning and Design Guide* (2015). The traffic analysis software used to conduct the analysis presented were Synchro 11 and SIDRA Intersection 8.0. In addition to this standard design guidance, each alternative sought with varying levels of success to conform to the City of Newton's vision for the project and intersection as expressed below.

“Our vision for our project and the area is to create new parkland and green space on the north side of the road, including but not limited to adding a continuous walking and bicycle path where the roadway currently exists. This is achieved by rerouting vehicular traffic from north of the median to the south side of the road. Goals for the area include: a) increase the overall amount of green space; b) link myriad trail networks including the Charles River Path, the Riverside Greenway trail network (in development), and Weston's planned shared use path, running along Commonwealth Ave from the Newton to Natick borders; c) increase visibility and access to the Charles River at the historic boathouse; d) improve safety for pedestrians and bicyclists along Commonwealth Avenue; and e) improve transit access in the area by upgrading bus stops.”

DISPLACED LEFT TURN INTERSECTION

Upon comparison of the performance of each alternative, both MassDOT and City of Newton reviewers deemed that the Displaced Left Turn Intersection alternative was not a viable option given that the other alternatives performed comparably in operations, provided more useable green space, and resulted in a smaller intersection layout.

TRADITIONAL T-INTERSECTION

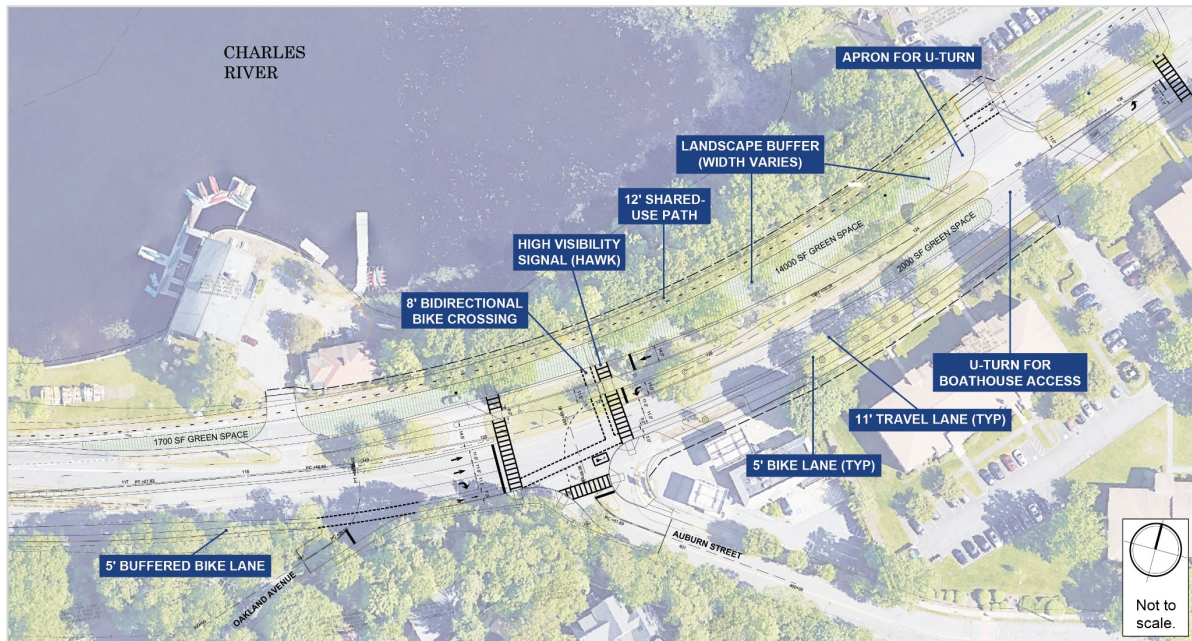
On comparison, this alternative was also deemed as non-viable for lack of conformance to the City's future transportation goals.

CONTINUOUS GREEN T-INTERSECTION

This alternative (**Figure 2**) was not considered as a viable option by MassDOT due to concerns on safety, access, and operations.



Figure 2. Continuous Green T-Intersection Alternative



- Safety
 - The merge that is required west of the boathouse driveway was considered as a safety concern that would be improved but not eliminated.
 - Concern was expressed by MassDOT that the expectations of the continuous flow for the westbound through movement may result in a lack of vehicle stopping compliance when the signal is triggered for the ped/bike crossing movement.
- Access
 - Users looking to access the boathouse from the eastbound direction of Route 30, Oakland Avenue, or Auburn Street would be required to make an uncontrolled U-turn movement at the western Marriott driveway.
- Operations
 - This intersection configuration provided comparable overall operations for total intersection delay when compared to the other alternatives. However, other alternatives better managed the max queues at the intersection during the peak hours reducing potential spill back that may lead to blocking the Marriott driveway and Access from Oakdale Avenue to Route 30.



MIXED-LANE MODERN ROUNDABOUT;

In comparison the Mixed-Lane Modern Roundabout (**Figure 3**) was considered as the only viable option by both MassDOT and City of Newton staff based on its performance towards safety, accessibility, and traffic operations for all mode users.

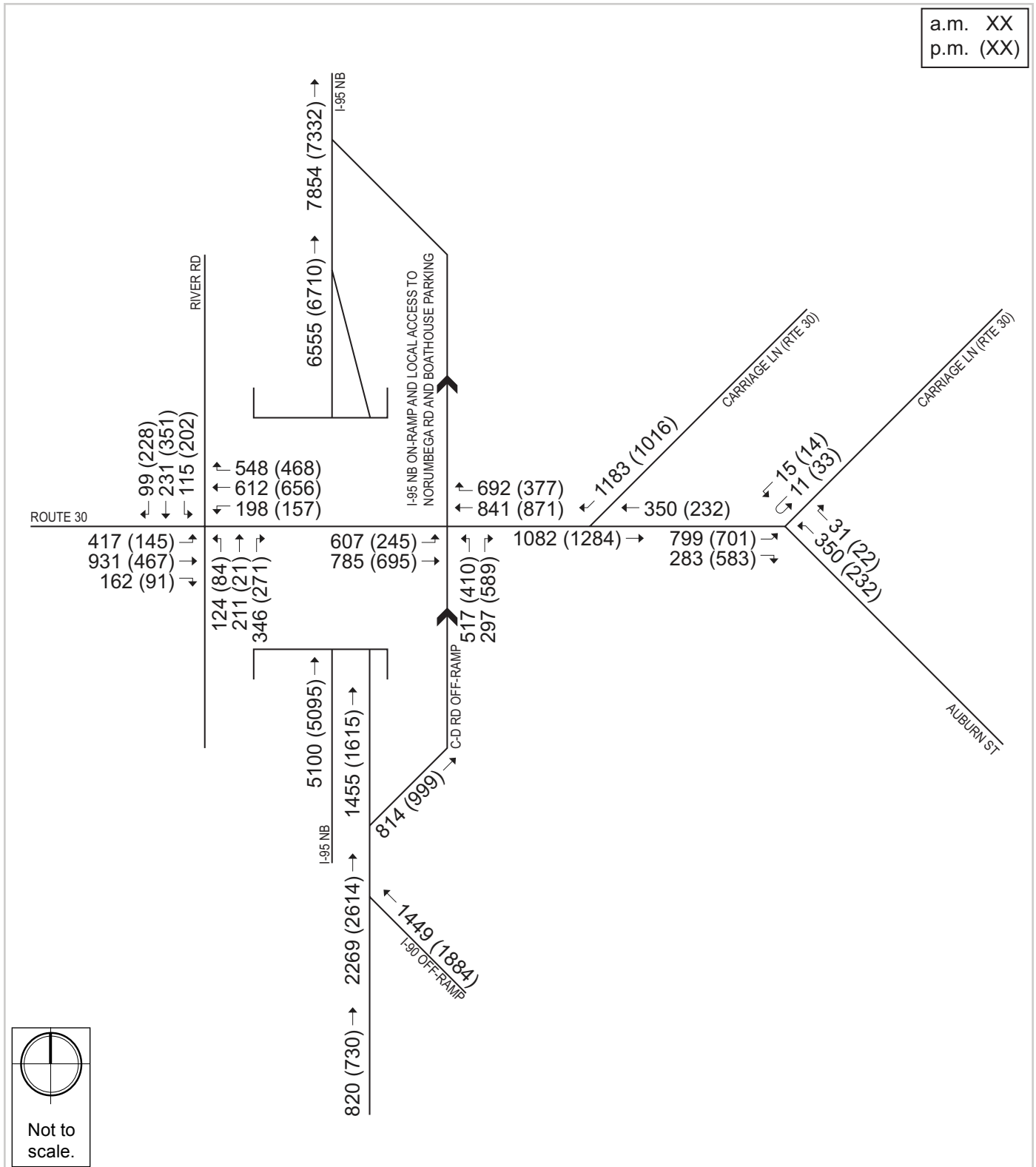
Figure 3. Mixed Lane Modern Roundabout Alternative



- Safety
 - Eliminates the need for a weave west of the boathouse by directing vehicles from Auburn Street into the outside lane while entering the roundabout.
 - Deflection at the roundabout entry and the chicane on the westbound approach will encourage speeds to slow to 20-30mph on the approach and within the roundabout.
 - The yield on entry condition and Pedestrian Hybrid Beacons provided over each lane have been studied to improve vehicle compliance to stopping at roundabouts for pedestrian and bike crossings.
- Access
 - The nature of the roundabout allows for controlled direct access from Route 30 eastbound, Oakland Avenue, and Auburn Street to the boathouse, encouraging conflicting vehicles to yield where appropriate.
- Operations
 - The operational analysis for the roundabout alternative provided a comparable intersection delay to the other alternatives. However, this alternative provided superior performance in handling overall queue lengths on the mainline of Route 30 (Commonwealth Avenue) in comparison to all other alternatives.



Figure 4. *Build (2038) Condition Traffic Volumes, Weekday a.m. and p.m. Peak Hours*





Massachusetts Multi-Lane Roundabout Examples

Modern roundabouts – distinctly different from their legacy counterparts, rotaries – encourage speed management treatments while limiting the potential for conflicts and crashes between users to provide safe movements for all. The state of Massachusetts has successfully constructed this Federal Highway Administration “Proven Safety Countermeasure” at a growing number of locations throughout the last decade. Three examples of constructed multi-lane roundabouts of a similar configuration to the proposed roundabout alternative at Auburn Street at Commonwealth Avenue are: Boylston St at Lincoln Street and Benson Avenue in Worcester; Lake Avenue at South Avenue in Worcester; and Washington Street (Route 85) at Broad Street in Hudson.

Each of these locations have contextual similarities to the City of Newton’s project area and supports peak hour volumes that also require multilane approaches to the roundabout. Each location has proven to support both their peak hour traffic flows and accommodates multiple types of users efficiently and safely. To illustrate the pre-build and build conditions for each of these sites **Figures 5, 6, 8, 9, 12, and 13** are included. **Figure 7, 10, and 11** are included to illustrate the projected/existing peak hour turning movement counts for comparison against those considered for this project as presented in **Figure 4**.

Each of these locations has successfully applied the safety benefits that this type of intersection can provide. As stated in the MassDOT “Guidelines for the Planning and Design of Roundabouts,” Roundabouts are considered in intersection design as they provide the following benefits.

- Roundabouts have fewer conflict points between vehicles in an intersection.
- The most severe types of vehicle-on-vehicle crashes, such as T-bone, left-turn, and head-on collisions, are avoided.
- The central island and traffic medians force drivers to slow down to between 20 and 30 mph.
- Slower vehicle speeds reduce the stopping distance needed which helps drivers avoid crashes.
- Slower vehicle speeds help drivers recognize people trying to cross the road.
- Slower vehicle speeds lessen the chance for fatal and serious injury crashes.
- People walking cross one stream of traffic at a time. People walking can pause between the traffic entering and exiting the roundabout.
- Roundabouts reduce the conflict points between people biking and vehicles.
- Slower vehicle speeds are closer to the speeds of people biking, which increases cyclist comfort.
- Converting an intersection with traffic signals to a roundabout can reduce property-damage-only crashes by 48% and fatal and injury crashes by 78%.



BOYLSTON STREET AT LINCOLN STREET AND BENSON AVENUE IN WORCESTER

<https://goo.gl/maps/2PLkGWazp6NT3dTL6>

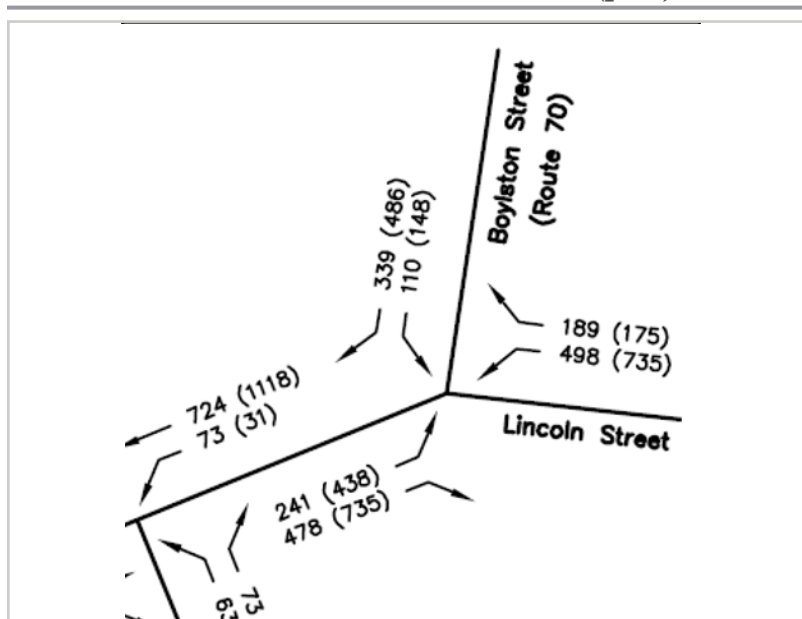
Figure 5. *2011 Aerial Image of Boylston St at Lincoln St and Benson Ave*



Figure 6. *2020 Google Maps Aerial of Boylston St at Lincoln St and Benson Ave*



Figure 7. *2024 Project Peak Hour TMCs Boylston St at Lincoln St and Benson Ave a.m. (p.m.)*





LAKE AVENUE AT SOUTH AVENUE IN WORCESTER

<https://goo.gl/maps/xKJApKwTtwFDWMuBA>

Figure 8. *2011 MassGIS Aerial Lake Ave at South Ave*



Figure 9. *2020 Google Aerial Lake Ave at South Ave*



Figure 10. *2020 a.m. Peak Hour TMC*

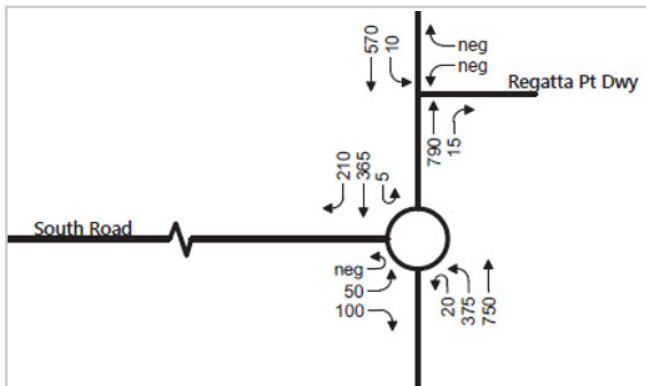
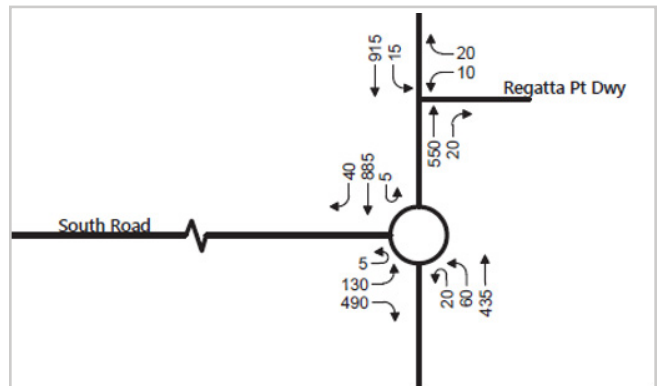


Figure 11. *2020 p.m. Peak Hour TMC*



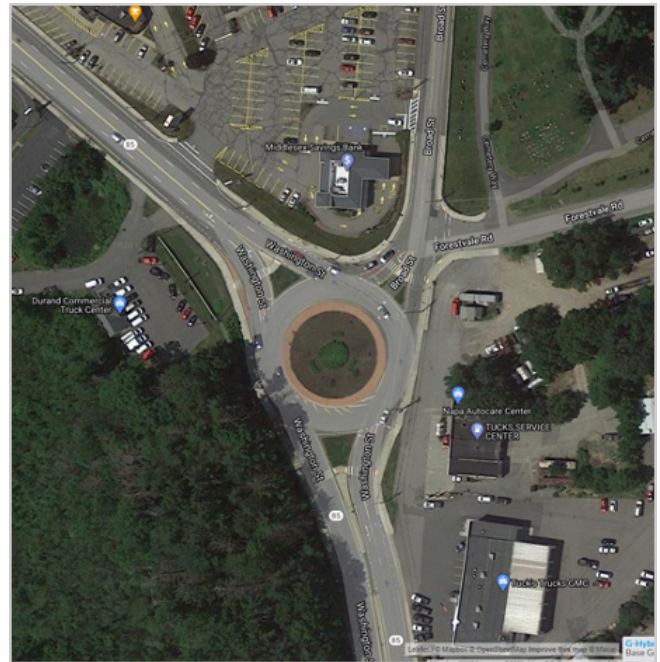


WASHINGTON STREET (ROUTE 85)/BROAD STREET IN HUDSON, MA
<https://goo.gl/maps/9TMSWUZRVzj8XwQj8>

Figure 12. *2011 MassGIS Aerial Broad St at Washington St (Route 85)*



Figure 13. *2020 Google Aerial Broad St at Washington St (Route 85)*



Peak Hour Traffic Volumes are not readily available for this intersection.



MODERN ROUNDABOUT SIMULATION AND TRIAL DEMONSTRATION

VISUAL SIMULATION

To demonstrate the operation of a mixed lane roundabout functioning under future design traffic volumes for Auburn Street at Commonwealth Avenue a VISSIM model was developed to three-dimensionally demonstrate the functioning of the proposed intersection configuration. The model developed in conformance with MassDOT traffic analysis guidelines provides a visual representation of both driver behavior while entering and circulating through the intersection. The model also demonstrates multimodal operations as they are impacted by adjacent intersections, applied traffic calming measures, and added pedestrian and bicycle accommodations at the intersection.



Route 30 at Auburn Street VISSIM model simulation

EMERGENCY VEHICLE TURNING MOVEMENTS

To validate ability for emergency vehicles to navigate through the intersection, the City of Newton Fire Department, Engineering Department, and Department of Public Works plan to mockup the proposed intersection layout. The Department's vehicles will navigate through the layout placed in an open paved lot to assist in identifying any modifications that may be needed or to validate that the existing geometry will support all operational vehicles.



IN PLACE ROUNDABOUT CONFIGURATION

As requested on November 18, 2020 by members of the Newton City Council, an in-place layout of the mixed lane modern roundabout layout was requested to demonstrate how a roundabout will operate under current traffic conditions. Applications of temporary roundabouts installed in the United States are limited. These applications usually installed with temporary traffic control measures have been applied for use in support of emergency operations where signal equipment is inoperable, as well as during temporary traffic control phases to support the construction of permanent roundabouts. The case where a temporary roundabout is installed with the intent to restore the intersection back to a signal-controlled intersection, as illustrated in **Figure 14**, are normally constructed within the curb-to-curb limits of the intersection. This configuration allows a rapid implementation of a low-cost solution that takes advantage of existing intersection lighting, directional signage, and available pavement width.

Figure 14. Temporary Roundabout Construction Wilmington NC



Source: <https://www.kittelson.com/ideas/temporary-roundabouts-guide-traffic-after-hurricane-florence/>

Observations for this type of temporary configuration are shown to provide a lower capacity of processing vehicles as compared to HCM's standards for permanently constructed roundabouts. This equates to a temporary configuration that may artificially reflect higher delays and queue lengths. Without the permanent treatments applied for pedestrian and bicycle accommodations, a raised center island, and traffic calming on the approach lanes, the temporary configuration will not realize many of the safety benefits that a modern roundabout can provide.



To attempt to temporarily construct a mixed lane roundabout at the Route 30 (Commonwealth Avenue) at Auburn Street Intersection that provides similar geometry to the proposed mixed-lane roundabout configuration, the following measures at a minimum may be required.

- Excavation of existing landscaped medians and sidewalks to install temporary base course and pavement to support heavy vehicle access.
- Temporary signage for wayfinding and operations.
- Placement of advanced Variable Message Signs on all approaches indicating changed configuration in advance and during operation of the temporary intersection layout.
- Relocation of one (1) light pole and three (3) utility poles with associated utility infrastructure.
 - Requires work by private utility companies to relocate and restore location of poles.
- Removal of up to eight (8) existing trees.
- Reconstruction of all existing accessible pedestrian ramps.
- Removal and replacement of existing signal equipment and/or foundations responsible for control of both Auburn Street and Route 30 westbound left turn movements.
- Eradication of existing line striping for 100-200 feet on all intersection approaches, temporary pavement markings applied for the roundabout, and final replacement of markings to restore operations.
- Coordination and notice to local abutters and neighborhoods.
- Coordination with conservation commission for impacts to existing green space within Riverfront.

A comparison analysis matrix can be found in **Table 1**.



Table 1. Alternative Comparison Matrix

	No Build Condition	Traditional T-Intersection	Mixed Lane Modern Roundabout	Continuous Green T-Intersection	Displaced Left Turn
Multimodal Accommodations & Crossing Treatment	No APS or crossings across Comm Ave	Shared Use Path Shared or Separated Signalized crossings	Shared Use Path Shared Crossing with Pedestrian Hybrid Beacon (HAWK)	Shared Use Path Shared or Separated Signalized crossings	Shared Use Path Shared or Separated Signalized crossings
Peak hour Intersection level of service	AM 23.2s PM 22.0s	AM 20.1s PM 17.7s	AM 27.5s PM 12.8s	AM 21.2s PM 17.6s	AM 21.4s PM 13.4s
Route 30 westbound (Average) Max Queue Length(ft)	AM (12) 43 PM (26) 68	AM (245) #530 PM (162) 403	AM (0) 265 PM (0) 111	AM (0) #626 PM (0) #1132	AM (253) #560 PM (168) 461
Route 30 eastbound (Average) Max Queues(ft)	AM (190) 383 PM (267) 467	AM (61) #396 PM (144) 297	AM (0) 60 PM (0) 47	AM (69) #483 PM (165)#450	AM (143) 293 PM (102) 291
Intersection Green Space	Existing medians unusable space 18000 SF	14900 SF	20500 SF	17700 SF	17500 SF
MassDOT Preference	Eliminate	Consider	Consider	Eliminate	Eliminate
City of Newton Preference	Eliminate	Eliminate	Consider	Consider	Eliminate

~ = Volume exceeds capacity, queue is theoretically infinite
= 95th-ile volume exceeds capacity, queue may be longer
m = Volume for 95th-ile queue is metered by upstream signal

Auburn St @ Commonwealth Ave

Proposed MassDOT intersection improvements

*January 14, 2021
Public Information Meeting*

Contact: Nicole Freedman
Director of Transportation Planning
City of Newton
Nfreedman@newtonma.gov

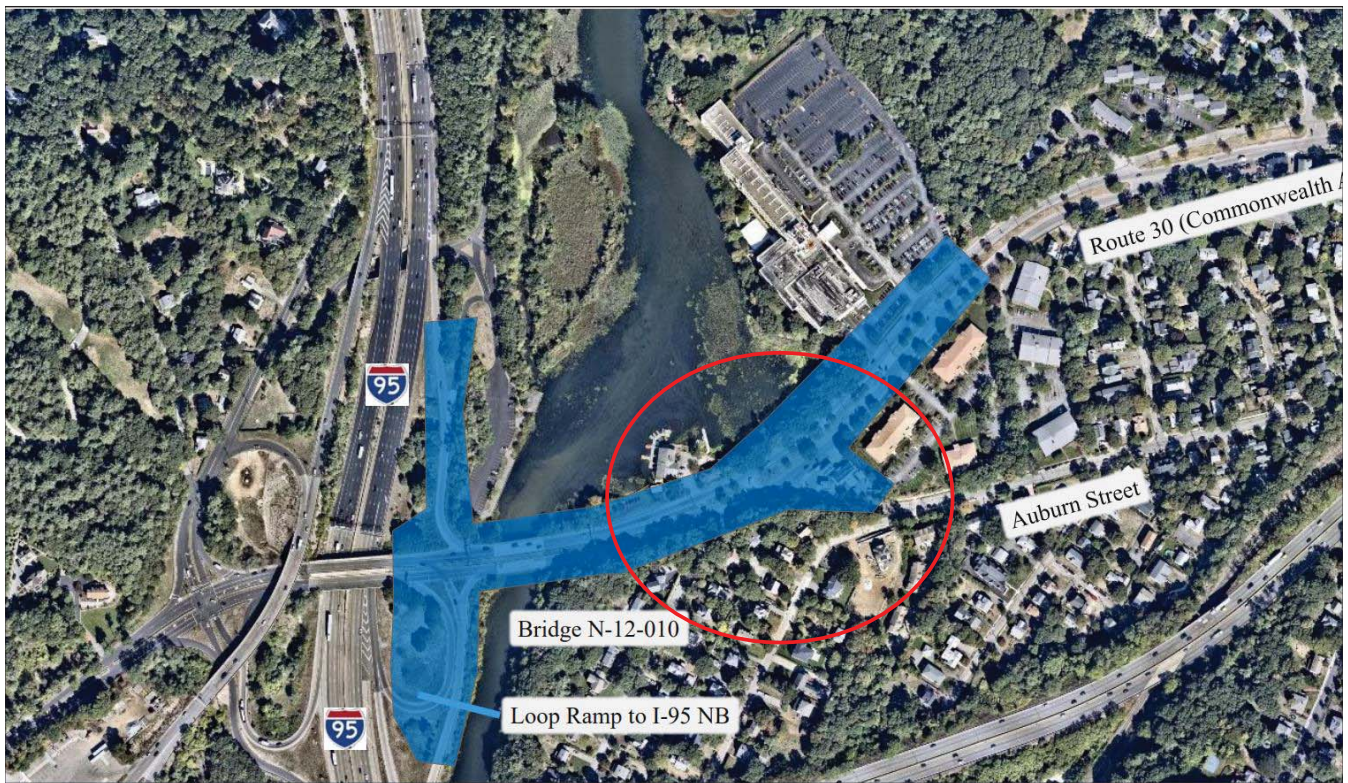
Agenda

1. Introduction
2. Alternatives Analysis
3. About Roundabouts
4. Preliminary Questions Answered
5. Timeline & Next Steps
6. Questions & Comments



1. Introduction

MassDOT Bridge Project Limits



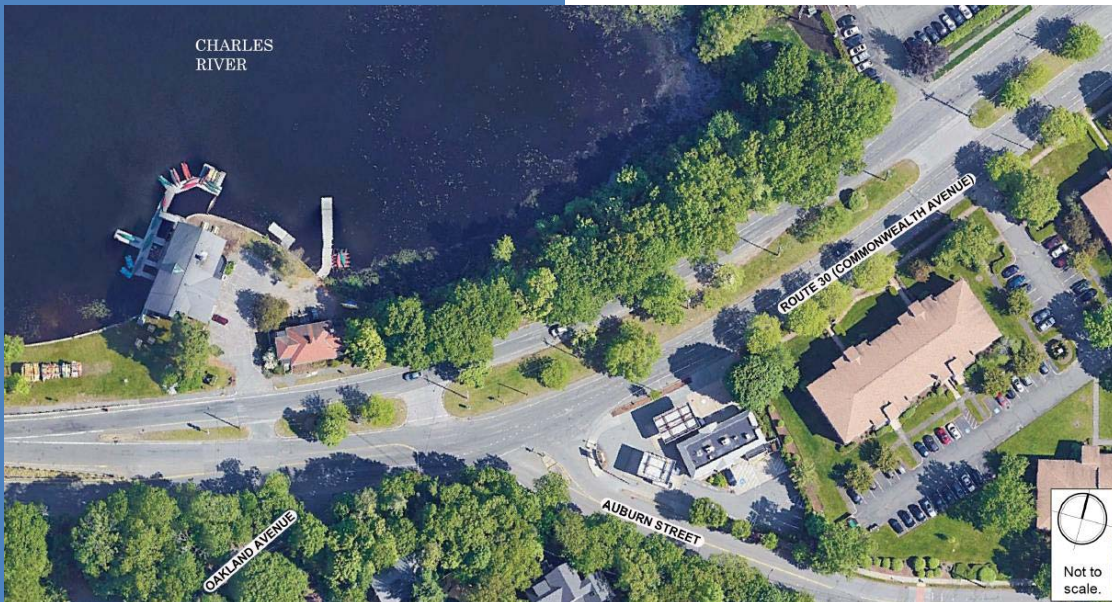


City Vision

- Safety
- New open space
- Bike & ped accommodations
- Network connectivity
- Increased access to river & boathouse

MassDOT Goals

- Bridge Rehabilitation
- Safety
- Multimodal accommodations & connectivity
- Vehicular access & operations
- City vision



Existing Challenges

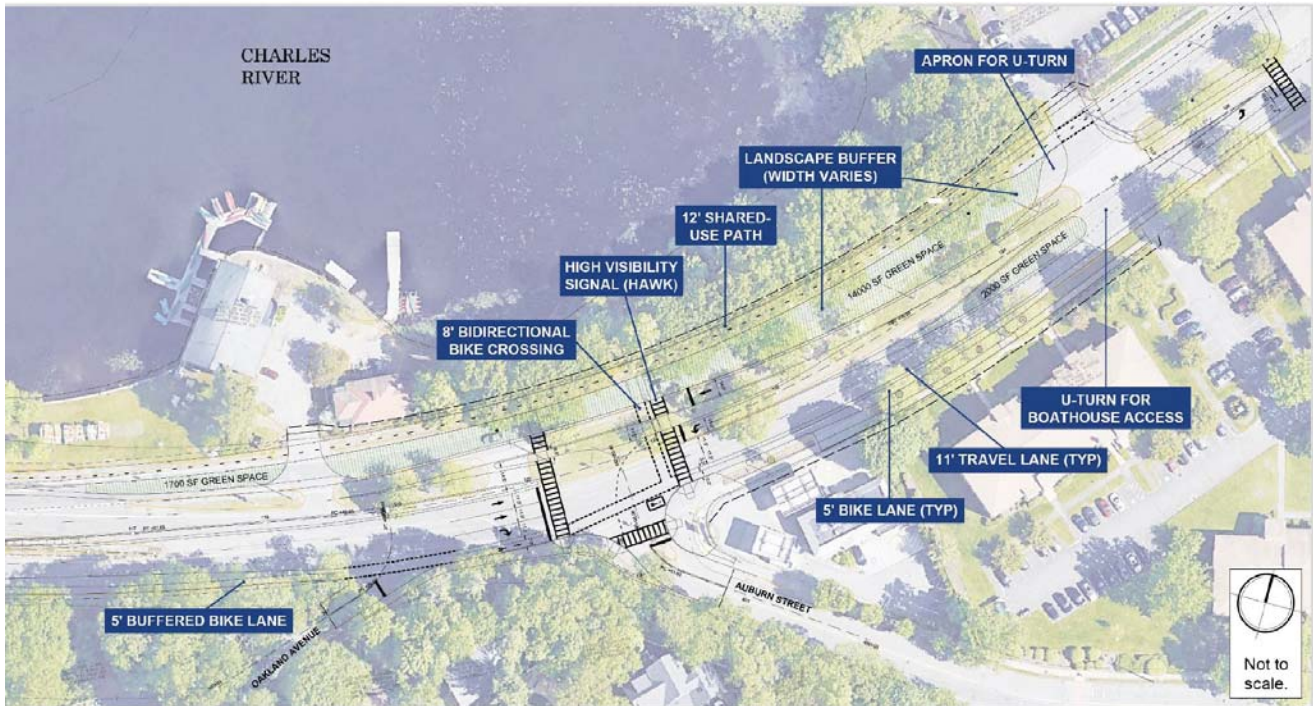
22-21

- Safety
- Crossings
- Multimodal accommodations
- Speeding
- Network connectivity

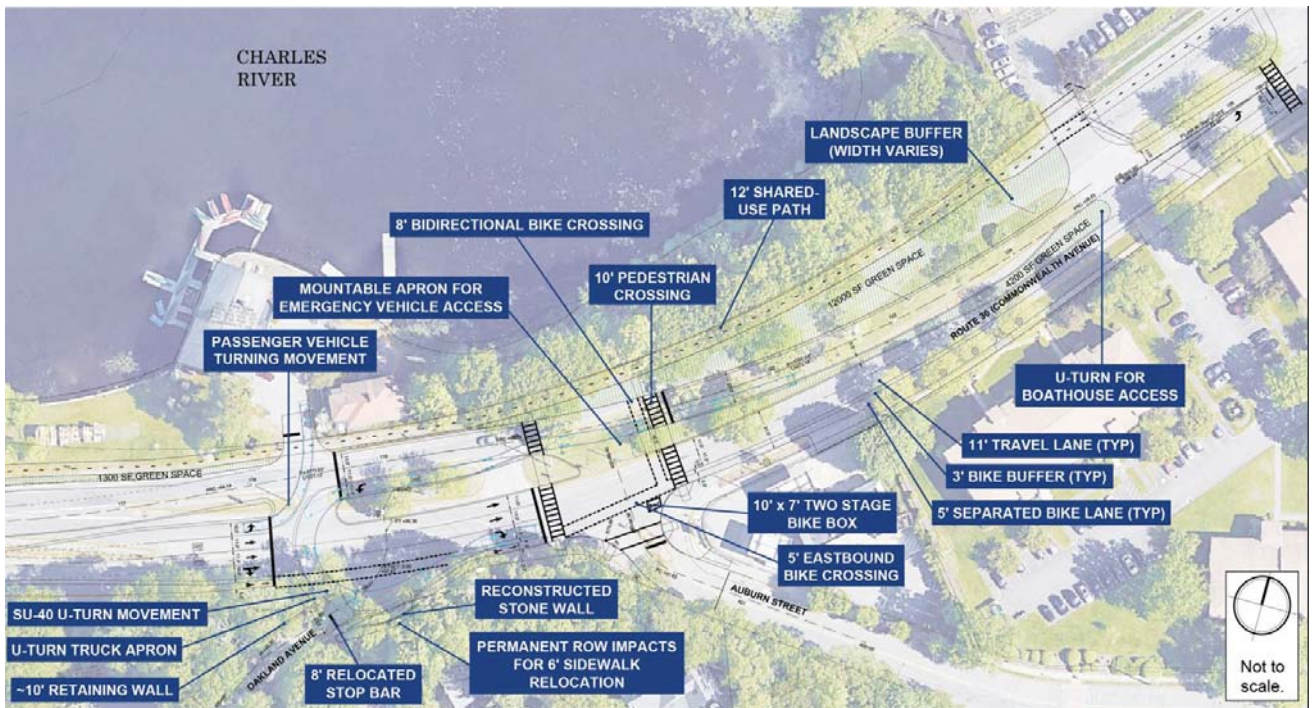


2. Alternatives Analysis

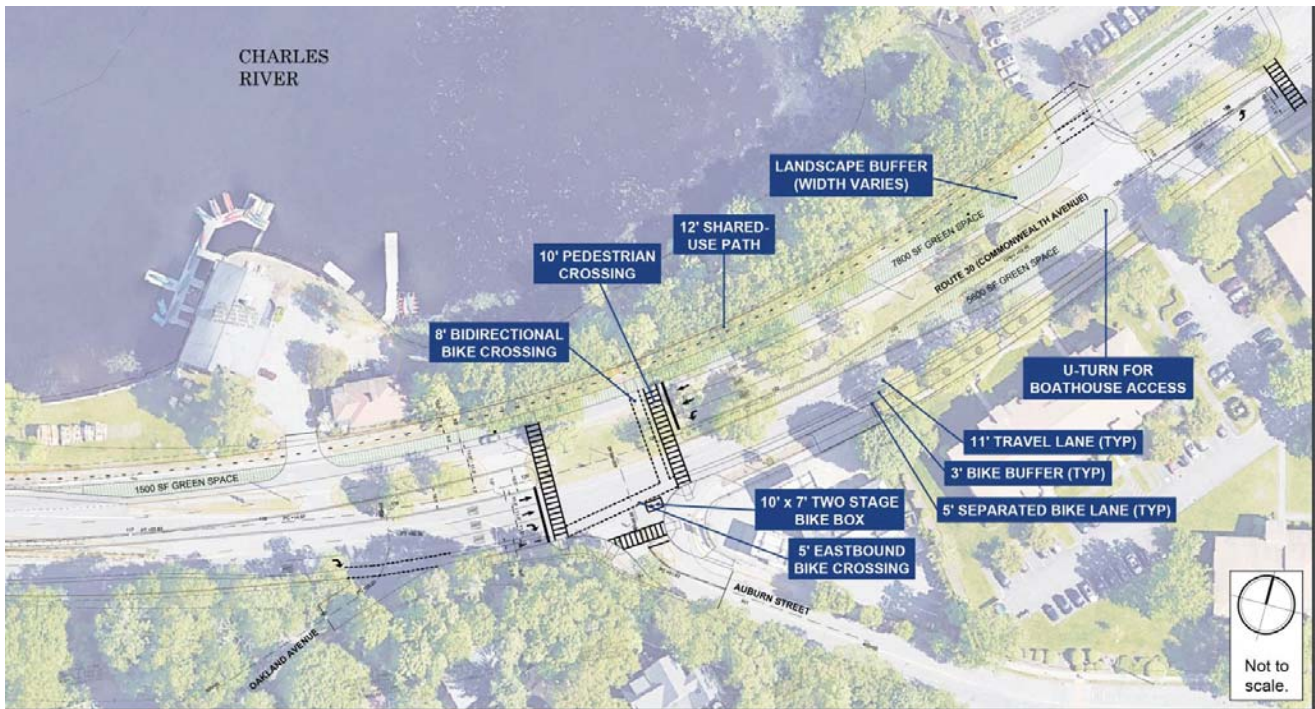
Continuous Green T- Intersection



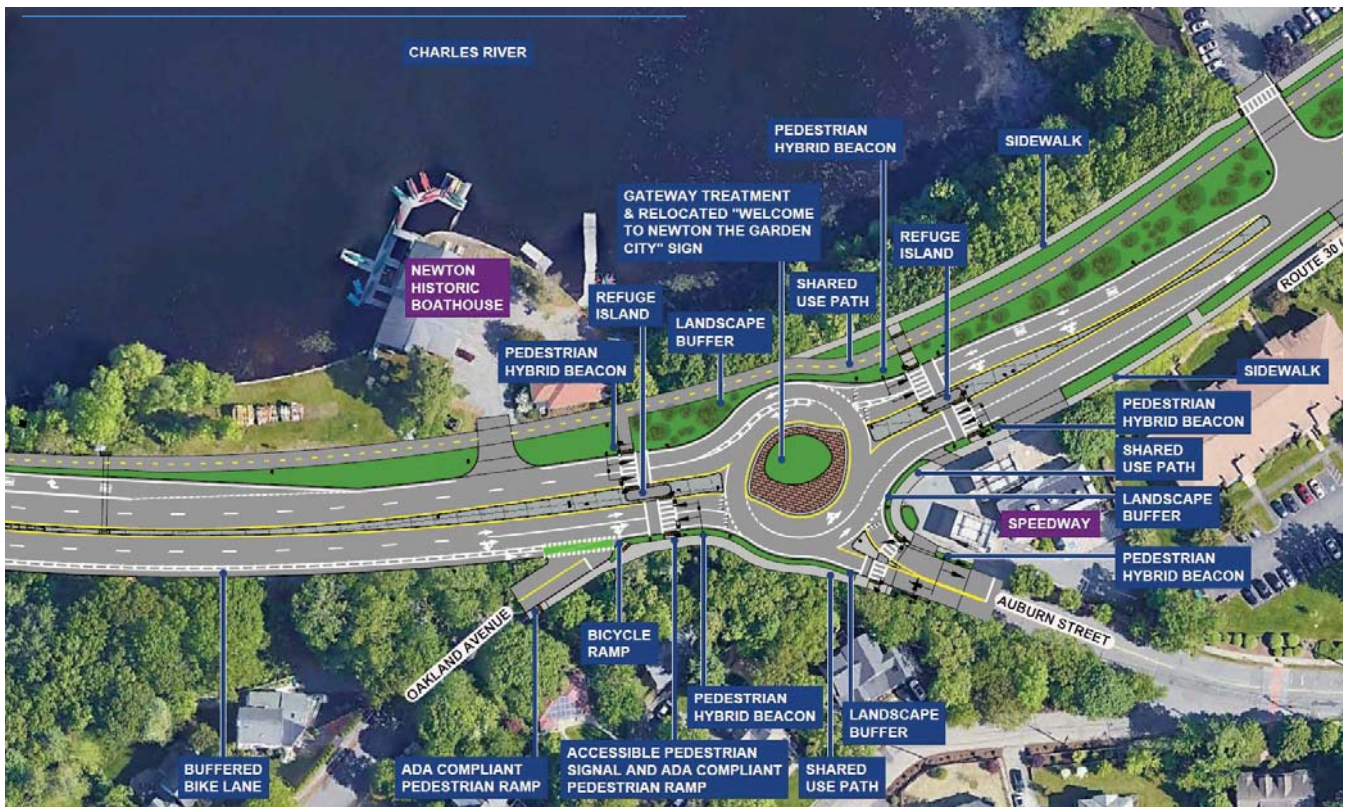
Displaced Left Turn



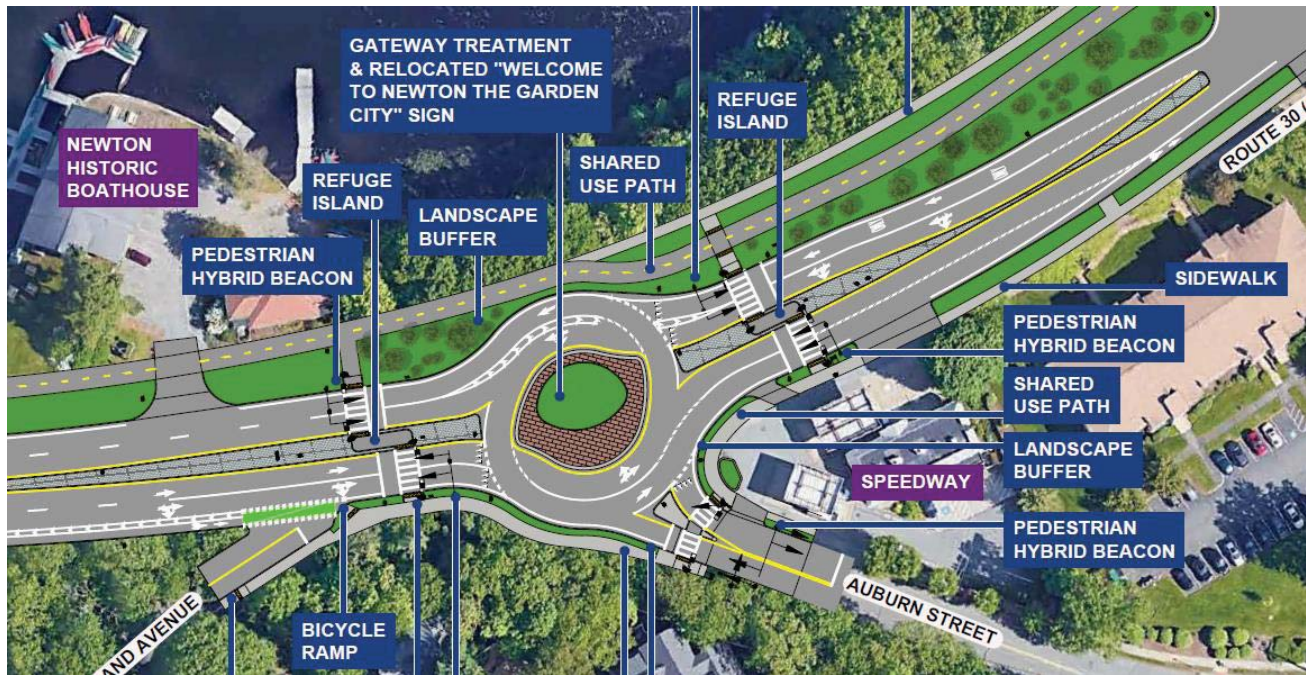
Traditional T - Intersection



Mixed Lane Modern Roundabout



Mixed Lane Modern Roundabout



Alternative Comparison Matrix

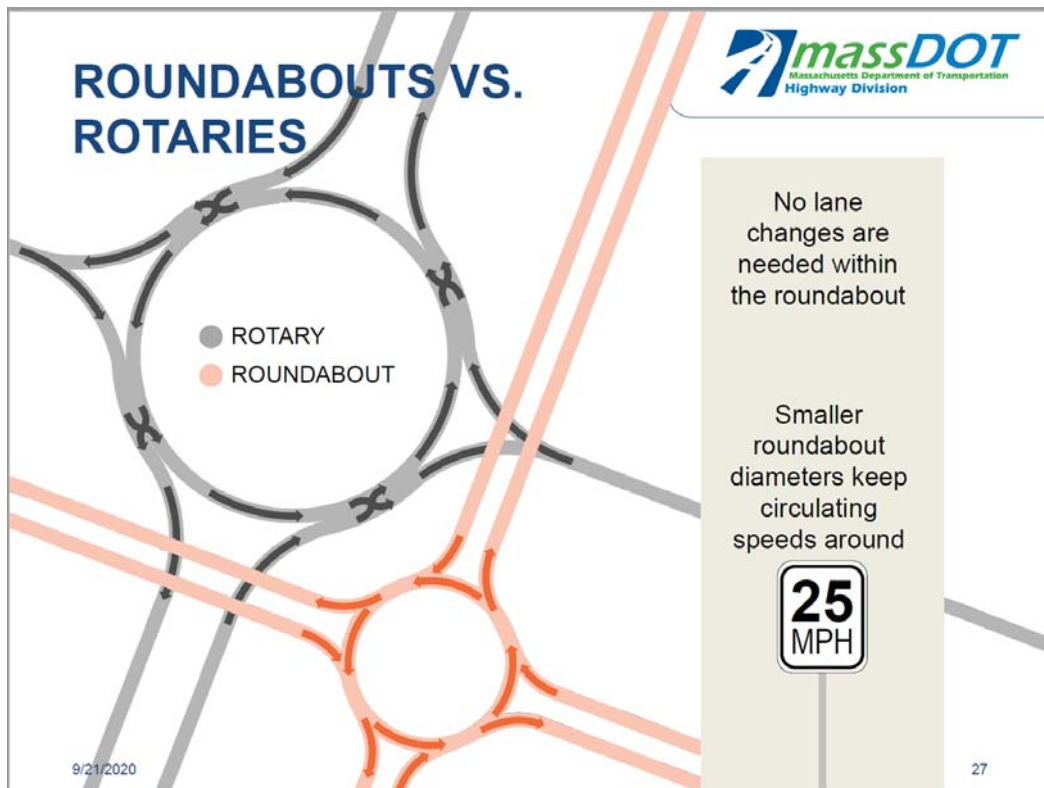
	No Build Condition	Traditional T-Intersection	Mixed Lane Modern Roundabout	Continuous Green T-Intersection	Displaced Left Turn
Multimodal Accommodations & Crossing Treatment	No APS or crossings across Comm Ave	Shared Use Path Shared or Separated Signalized crossings	Shared Use Path Shared Crossing with Pedestrian Hybrid Beacon (HAWK)	Shared Use Path Shared or Separated Signalized crossings	Shared Use Path Shared or Separated Signalized crossings
Peak hour Intersection level of service	AM 23.2s PM 22.0s	AM 20.1s PM 17.7s	AM 27.5s PM 12.8s	AM 21.2s PM 17.6s	AM 21.4s PM 13.4s
Route 30 westbound (Average) Max Queue Length(ft)	AM (12) 43 PM (26) 68	AM (245) #530 PM (162) 403	AM (0) 265 PM (0) 111	AM (0) #626 PM (0) #1132	AM (253) #560 PM (168) 461
Route 30 eastbound (Average) Max Queues(ft)	AM (190) 383 PM (267) 467	AM (61) #396 PM (144) 297	AM (0) 60 PM (0) 47	AM (69) #483 PM (165)#450	AM (143) 293 PM (102) 291
Intersection Green Space	Existing medians unusable space 18000 SF	14900 SF	20500 SF	17700 SF	17500 SF
MassDOT Preference	Eliminate	Consider	Consider	Eliminate	Eliminate
City of Newton Preference	Eliminate	Eliminate	Consider	Consider	Eliminate

3. About Roundabouts

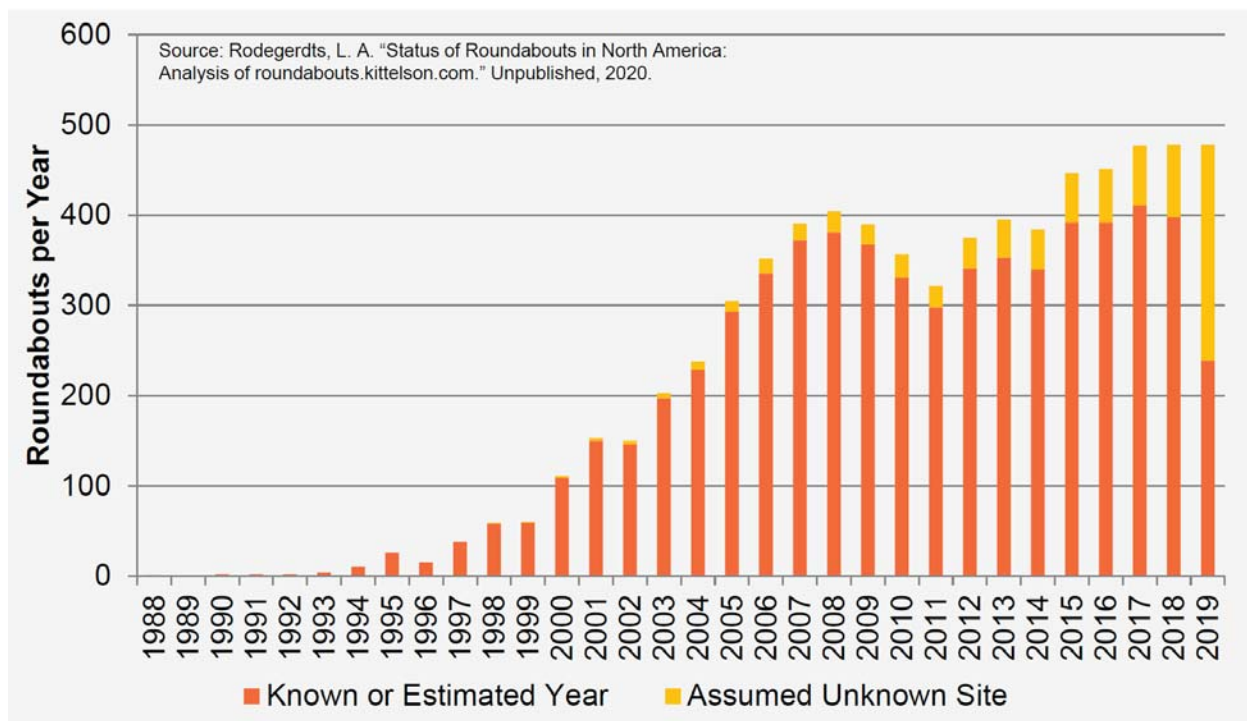
Modern roundabouts are very different than rotaries



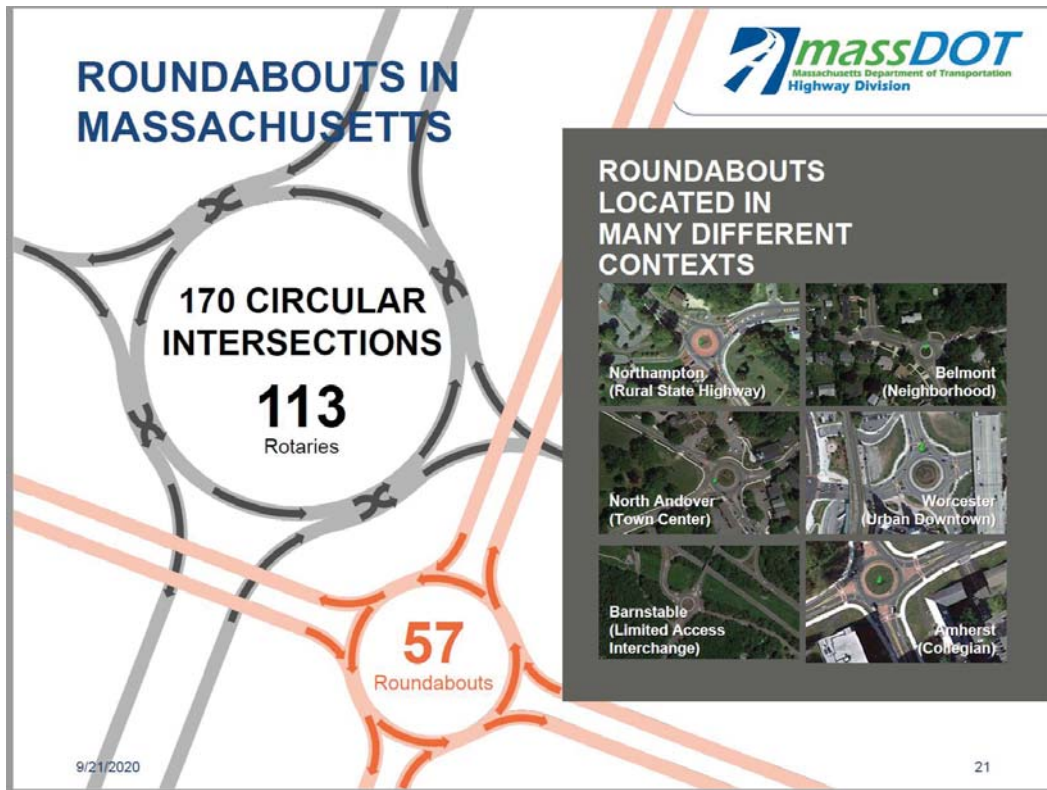
Modern roundabouts are smaller and safer than rotaries



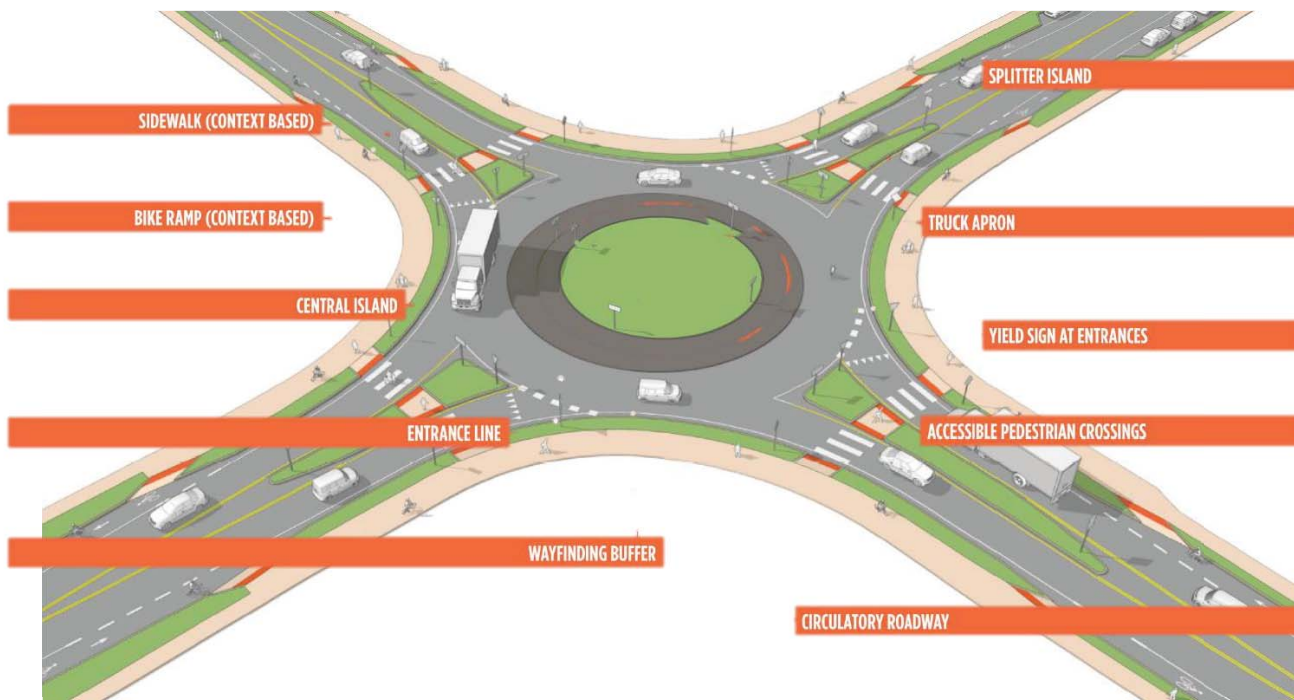
Newton will not be the first city to implement a modern roundabout



Newton will not be the first city to implement a modern roundabout



The proposed roundabout follows established best practices



4. Preliminary Questions Answered

Question: Can you provide a simulation of the roundabout at peak hour?
Answer: Yes. Please see below.



VISSIM Video Simulations Roundabout

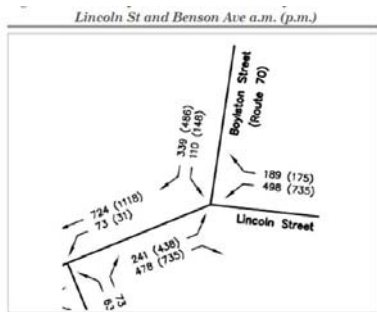
- <https://youtu.be/z1oGaJXR-V0> (AM Peak)
- <https://youtu.be/q76zlnQNNPY> (PM Peak)
- https://youtu.be/Lrqvl_ZiPHY (Ped Close-up)

Continuous Green T-Intersection (Florida T)

- https://youtu.be/r-y_-mwq14o (AM Peak)
- <https://youtu.be/JGalhAiL170> (PM Peak)

Question: Are there examples of successful modern roundabouts handling similar traffic volumes?

Answer: Yes. Boylston St @ Lincoln St, Worcester, MA



Question: Are there examples of successful modern roundabouts handling similar traffic volumes ,cont'd?

Answer: Yes. Lake Ave @ South Ave, Worcester, MA



Figure 10. 2020 a.m. Peak Hour TMC

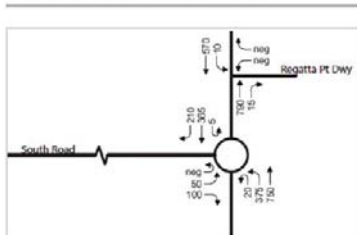
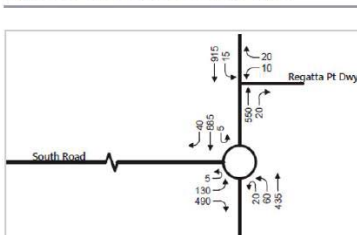
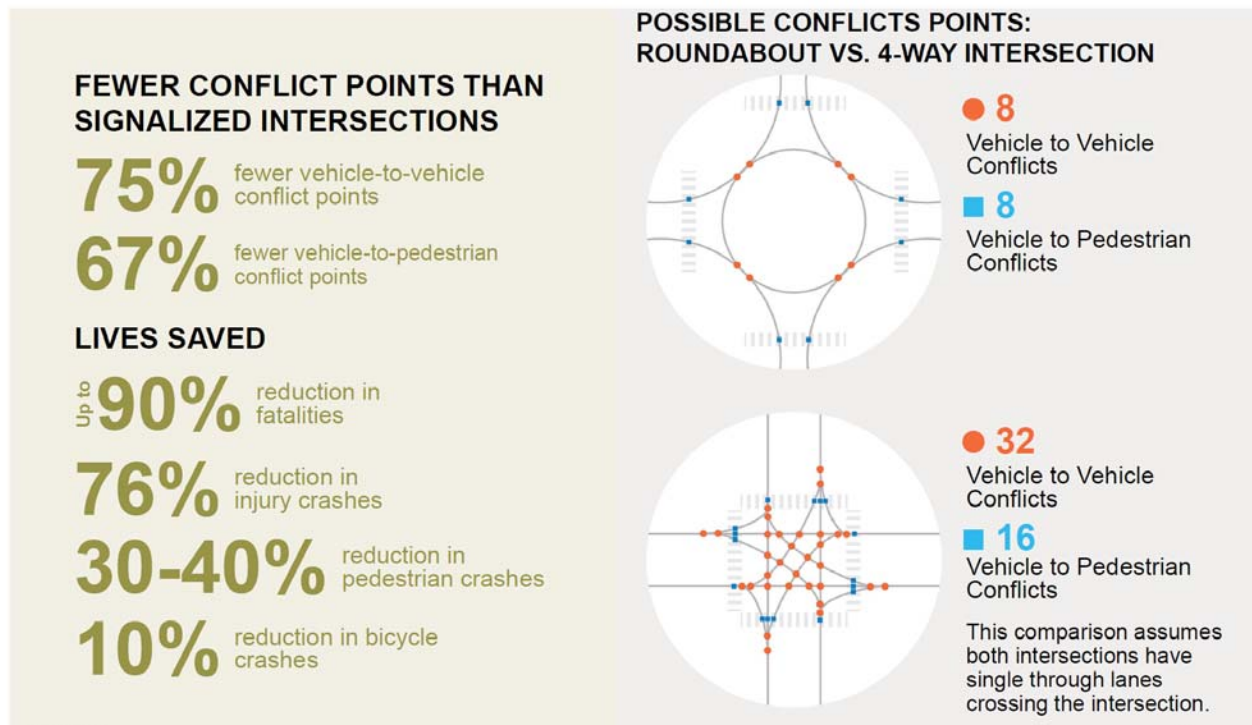


Figure 11. 2020 p.m. Peak Hour TMC



Question: Is the roundabout safe, especially for kids?

Answer: Yes.



Question: Is the roundabout safe, especially for kids, cont'd?

Answer: Yes.

Slower Vehicle Speeds (under 25 mph)

- Drivers have more time to judge and react to other cars or pedestrians
- Advantageous to older and novice drivers
- Reduces the severity of crashes
- Keeps pedestrians safer

LOWER SPEED

Lower speed is associated with better yielding rates, reduced vehicle stopping distance, and lower risk of collision injury or fatality. Also, the speed of traffic through a roundabout is more consistent with comfortable bicycle riding speed.



SHORTER, SETBACK CROSSINGS

Pedestrians cross a shorter distance of only one direction of traffic at a time since the entering and exiting flows are separated. Drivers focus on pedestrians apart from entering, circulating and exiting maneuvers.



Question: Is the roundabout safe, especially for kids, cont'd?
 Answer: Yes.

Insurance Institute for Highway Safety

Roundabouts are a safer alternative to traffic signals and stop signs. The tight circle of a roundabout forces drivers to slow down, and the most severe types of intersection crashes — right-angle, left-turn and head-on collisions — are unlikely.

AARP

AARP fact sheet supports roundabouts as safer for older drivers

- Require slower vehicle speeds
- Reduce collision severity
- Eliminate the need to make left turns in front of oncoming traffic

Question: Can you implement a trial of the roundabout?
 Answer: Not recommended, based on the following

Required for Trial Construction

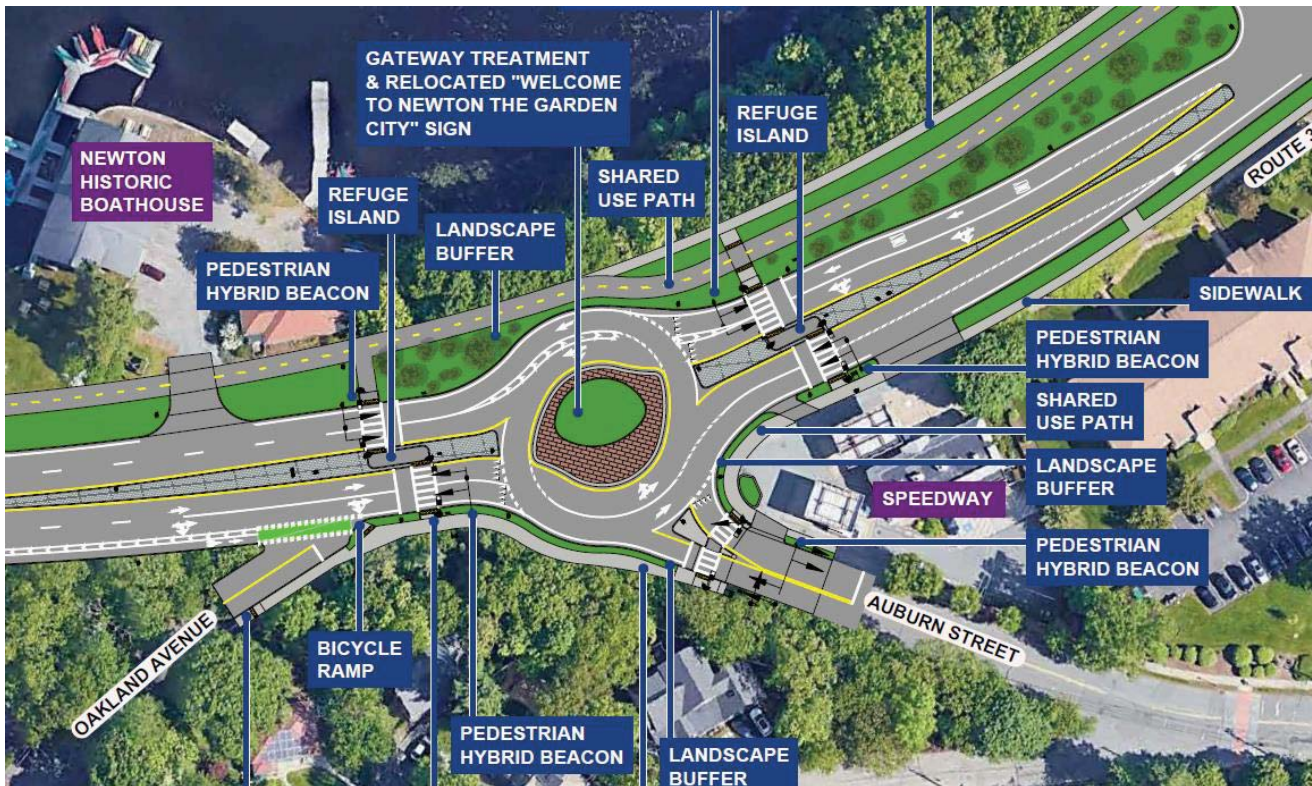
1. Excavation of landscaped medians and sidewalks
2. Relocation of 1 light pole and 3 utility poles by utility companies
3. Removal of up to 8 existing trees
4. Reconstruction of all accessible pedestrian ramps
5. Removal and replacement of existing signal equipment
6. Eradication of line striping
7. Temporary signage for wayfinding and operations
8. Variable message signs on all approaches
9. Coordination with conservation commission, local abutters, public

Temporary roundabouts provide less capacity and less safety than permanent configurations. They create more driver confusion and do not have full beneficial use of the planned pedestrian accommodations. It would not be a good demonstration of how the roundabout would work under permanent conditions

Question: Can you have a red pedestrian light at Auburn St?
Answer: A pedestrian hybrid beacon is being considered



Question: How do bikes navigate the roundabout on the south side?
Answer: Bikes will use a buffered bike lane to a shared use path.



5. Timeline and Next Steps

Timeline & Next Steps

- | | |
|---|------------------------|
| 1. City of Newton Public Information Session | 1/14/2021 |
| 2. City Council Committee Presentation and Vote | 1/20/2021 |
| 3. MassDOT 25% Design Hearing | Likely 3/2021 |
| 4. Advertising Date | Spring 2022 |
| 5. Construction | Fall 2022- Summer 2025 |

6. Questions & Comments

Nicole Freedman
Director of Transportation Planning
City of Newton
Nfreedman@newtonma.gov

City of Newton Carriageway Project

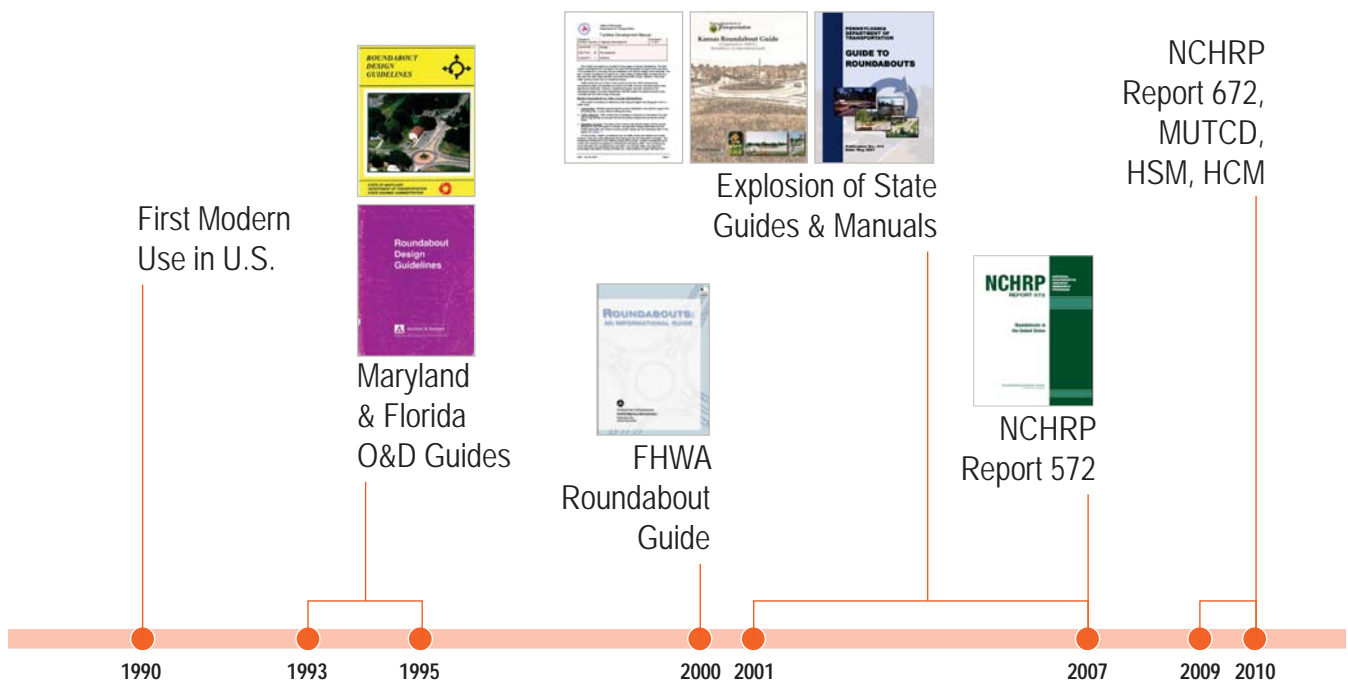




Roundabouts: An Intersection Alternative Overview

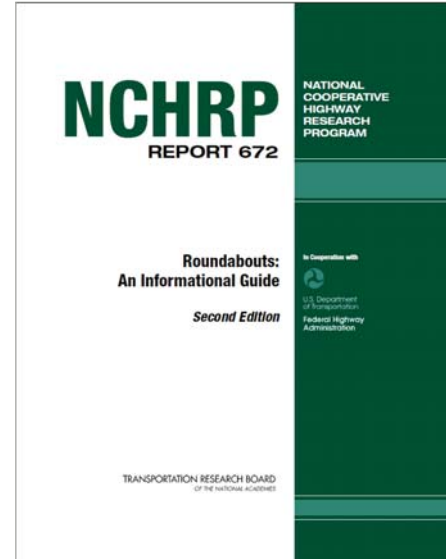
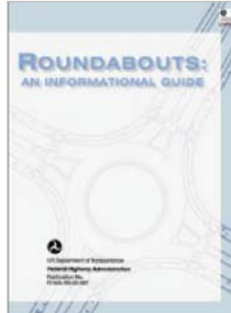
PROJECT NO. - ROUTE ## AT MAIN STREET IN TOWN/CITY

RECENT U.S. HISTORY HAS BEEN ACTIVE...



NCHRP REPORT 672: ROUNDABOUTS: AN INFORMATIONAL GUIDE, 2ND EDITION

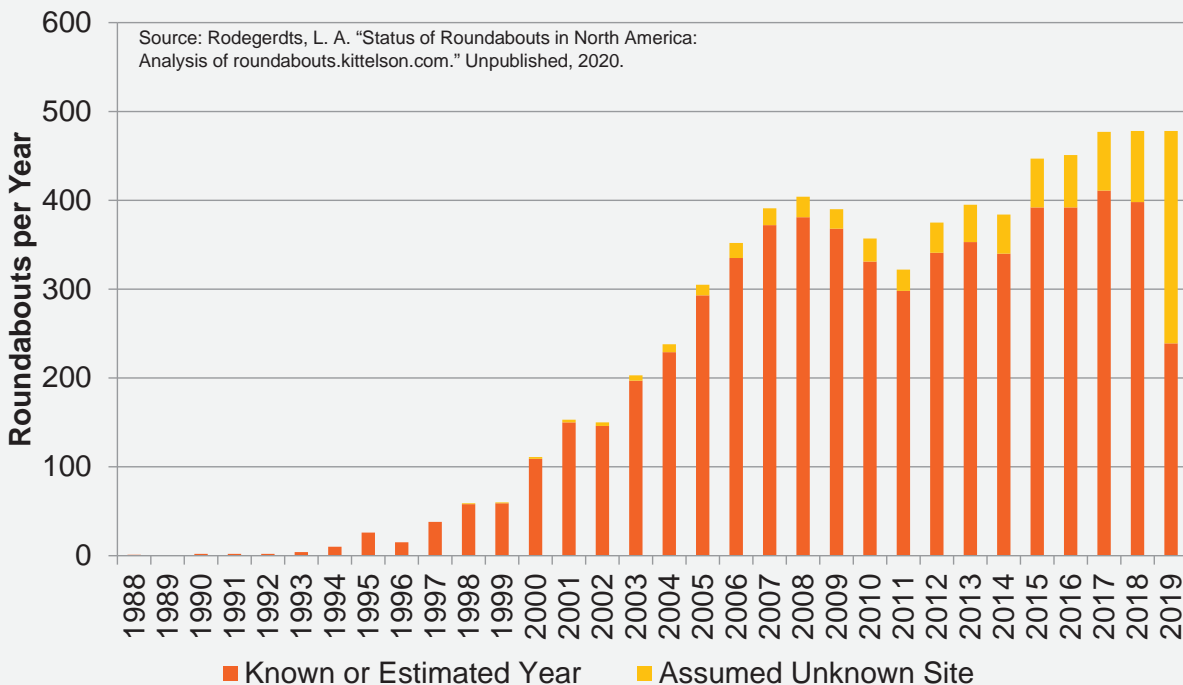
- Current “Roundabout Guide”
- Work conducted under NCHRP Project 3-65A
- Co-branded by FHWA
- Adopted by FHWA as update to 2000 edition by memorandum dated January 20, 2011



9/21/2020

3

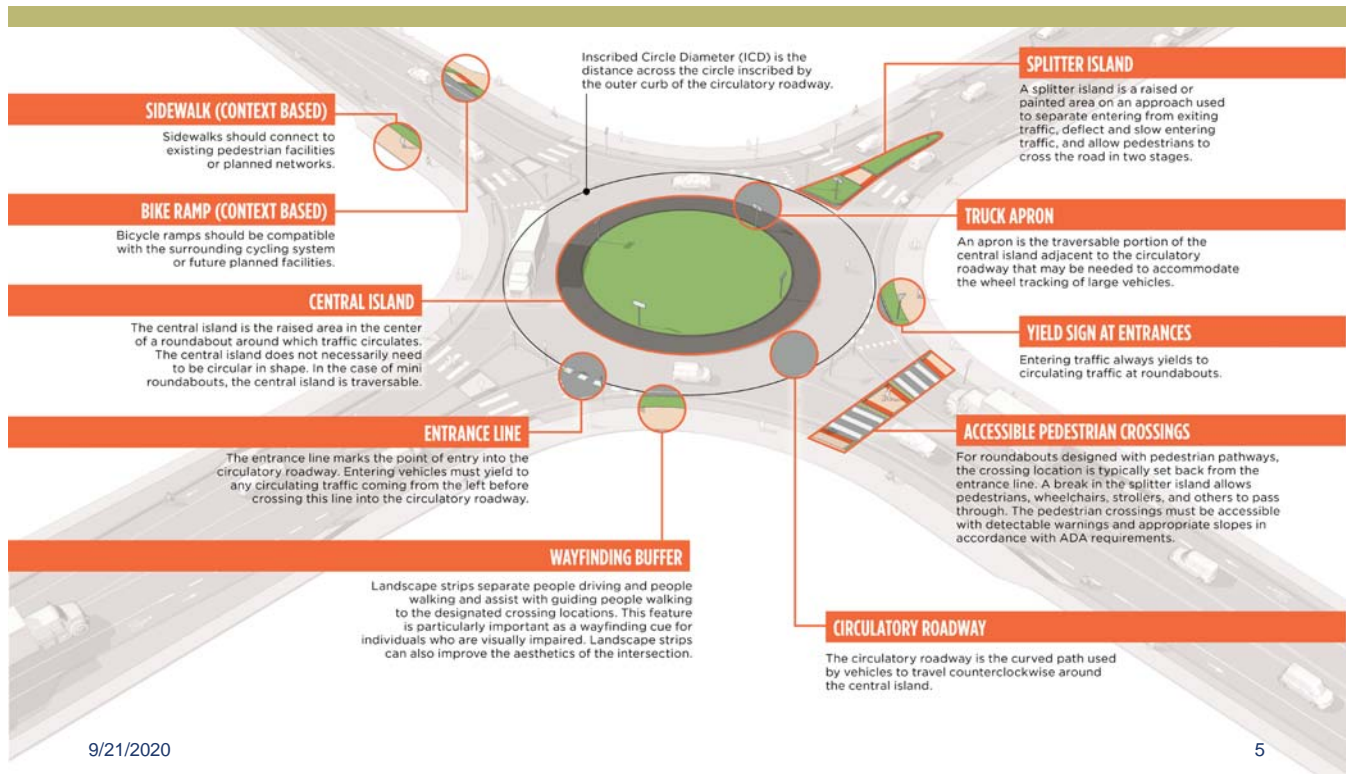
NUMBER BUILT EACH YEAR IS GOING UP...



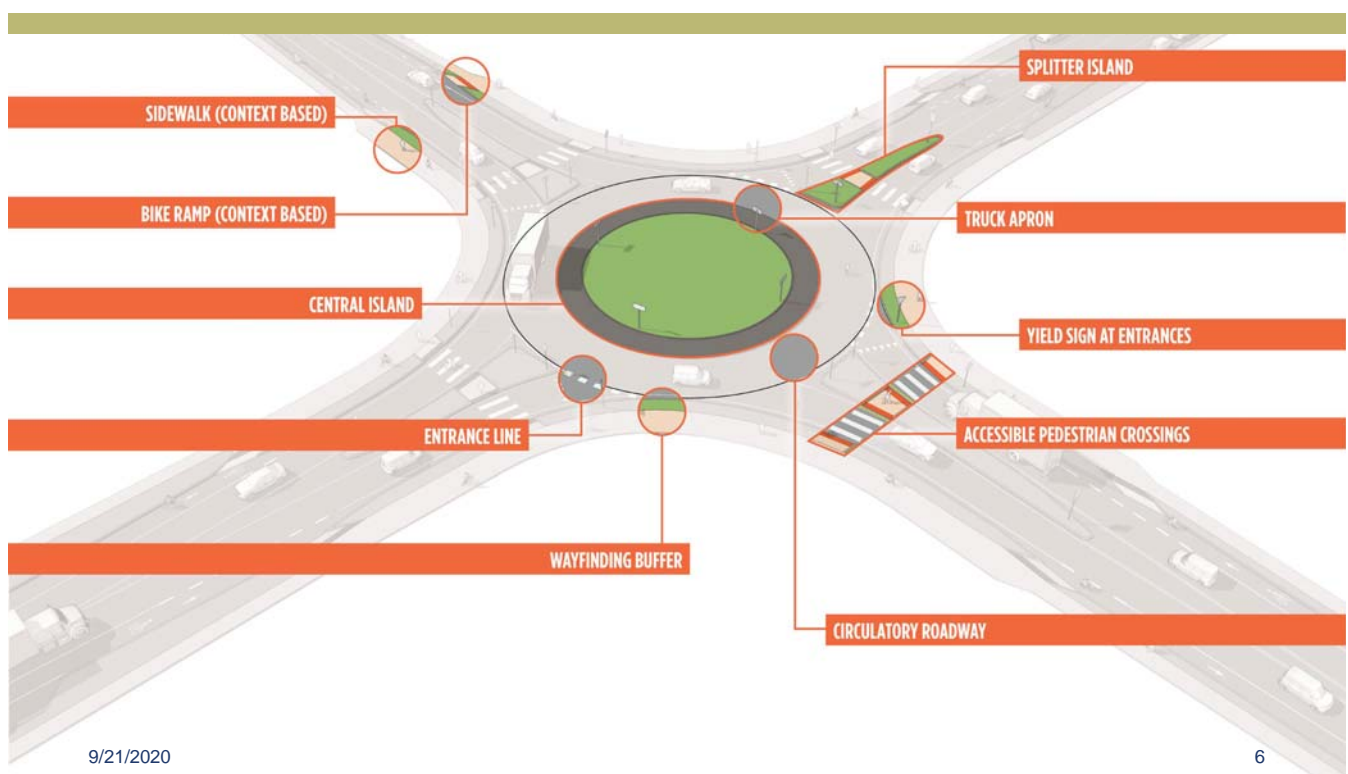
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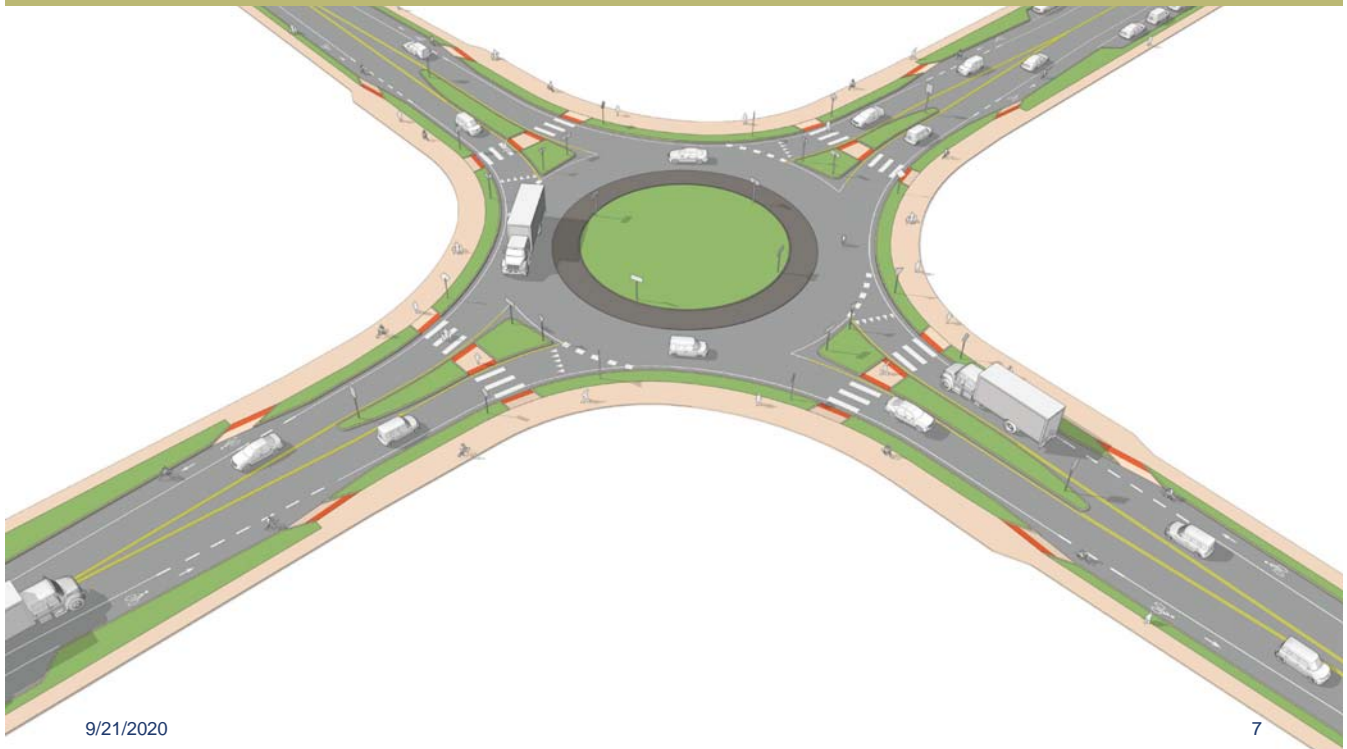
KEY ROUNDABOUT CHARACTERISTICS



KEY ROUNDABOUT CHARACTERISTICS



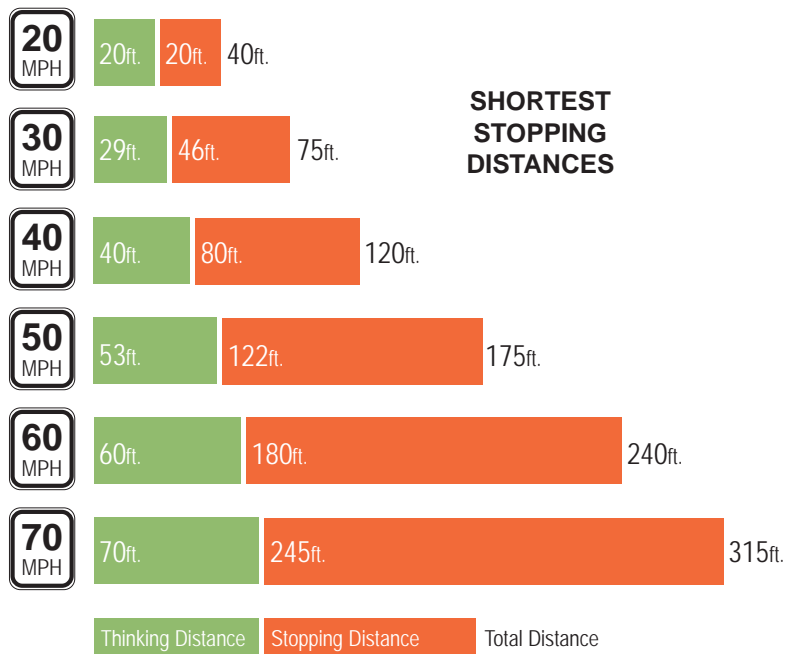
KEY ROUNDABOUT CHARACTERISTICS



9/21/2020

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BENEFITS OF A ROUNDABOUT



Source: Killing Speed Saving Lives

Slower Vehicle Speeds (under 25 mph)

- Drivers have more time to judge and react to other cars or pedestrians
- Advantageous to older and novice drivers
- Reduces the severity of crashes
- Keeps pedestrians safer

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INSURANCE INSTITUTE FOR HIGHWAY SAFETY

Roundabouts are a safer alternative to traffic signals and stop signs. The tight circle of a roundabout forces drivers to slow down, and the most severe types of intersection crashes — right-angle, left-turn and head-on collisions — are unlikely.



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BICYCLISTS AND PEDESTRIANS

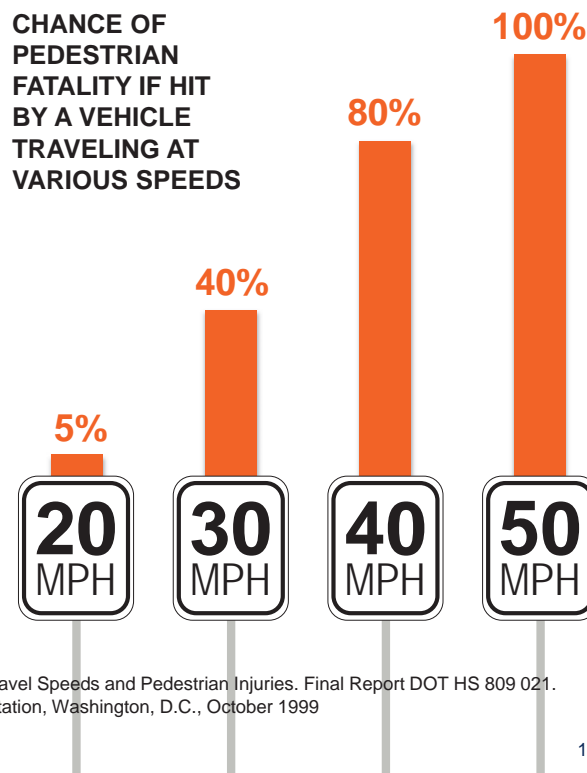
FEATURES FOR ALL USERS

- Adding certain treatments at roundabouts can enhance the experience for both pedestrians and bicycles.

LESS CONFLICT

- Roundabouts have fewer conflict points. A single lane roundabout has 50% fewer pedestrian-vehicle conflict points than a comparable stop or signal controlled intersection. Conflicts between bicycles and vehicles are reduced as well.

CHANCE OF PEDESTRIAN FATALITY IF HIT BY A VEHICLE TRAVELING AT VARIOUS SPEEDS



Source: Leaf, W. A. and D. F. Preusser. Literature Review on Vehicle Travel Speeds and Pedestrian Injuries. Final Report DOT HS 809 021. National Highway Traffic Safety Administration, Department of Transportation, Washington, D.C., October 1999

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BENEFITS OF A ROUNDABOUT

FEWER CONFLICT POINTS THAN SIGNALIZED INTERSECTIONS

75% fewer vehicle-to-vehicle conflict points

67% fewer vehicle-to-pedestrian conflict points

LIVES SAVED

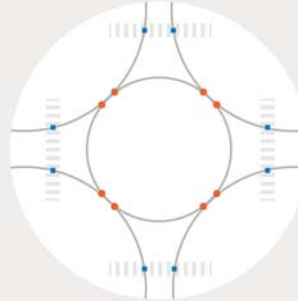
up to **90%** reduction in fatalities

76% reduction in injury crashes

30-40% reduction in pedestrian crashes

10% reduction in bicycle crashes

POSSIBLE CONFLICTS POINTS: ROUNDABOUT VS. 4-WAY INTERSECTION



- 8 Vehicle to Vehicle Conflicts
- 8 Vehicle to Pedestrian Conflicts

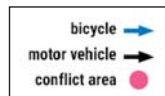


- 32 Vehicle to Vehicle Conflicts
- 16 Vehicle to Pedestrian Conflicts

This comparison assumes both intersections have single through lanes crossing the intersection.

BICYCLES AT ROUNDABOUTS

CHAPTER 4: INTERSECTIONS, EXHIBIT 4A

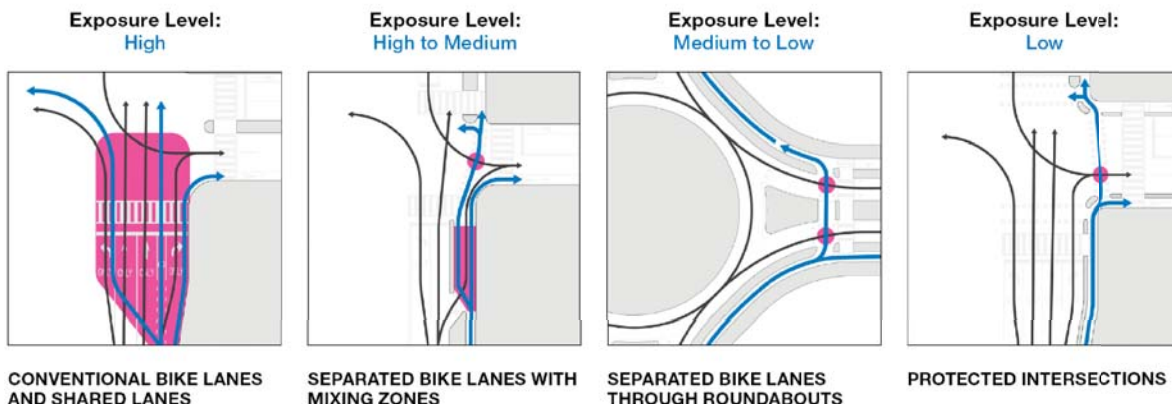


MASSDOT SEPARATED BIKE LANE GUIDE



COMPARISON OF BICYCLIST EXPOSURE AT INTERSECTIONS

The diagrams on this page provide a comparison of the levels of exposure associated with various types of intersection designs.



BICYCLES AT ROUNDABOUTS

Slower vehicle operating speeds make roundabouts safer and more comfortable for bicyclists

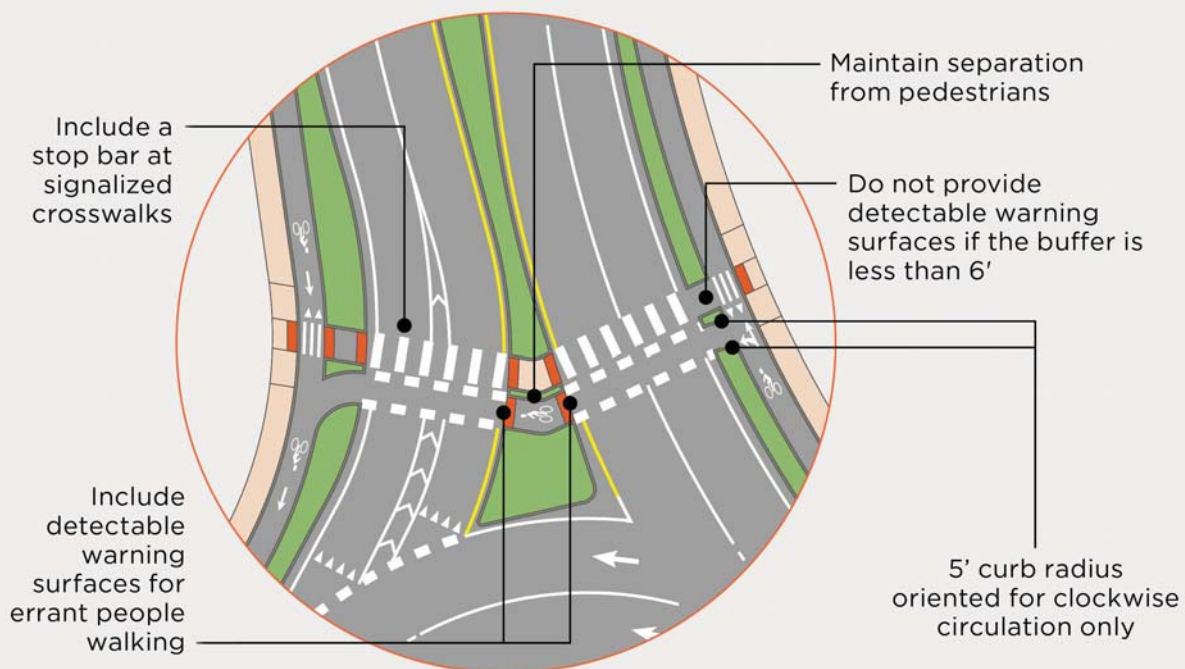
Bicyclists can either use the roundabout as a vehicle or use dedicated ramps to access the crosswalks



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ELEMENTS OF ROUNDABOUT WITH SEPARATED BIKE LANE



BICYCLISTS AND PEDESTRIANS

LOWER SPEED

Lower speed is associated with better yielding rates, reduced vehicle stopping distance, and lower risk of collision injury or fatality.

Also, the speed of traffic through a roundabout is more consistent with comfortable bicycle riding speed.



SHORTER, SETBACK CROSSINGS

Pedestrians cross a shorter distance of only one direction of traffic at a time since the entering and exiting flows are separated. Drivers focus on pedestrians apart from entering, circulating and exiting maneuvers.



OLDER DRIVERS AT ROUNDABOUTS

AARP fact sheet supports roundabouts as safer for older drivers

- Require slower vehicle speeds
- Reduce collision severity
- Eliminate the need to make left turns in front of oncoming traffic

Modern Roundabouts | A LIVABILITY FACT SHEET

Every day in the U.S. more than 20 people are killed at traffic intersections, and many more are seriously injured.¹

Roundabouts — circular intersections that move traffic counterclockwise around a central island — can help reduce these deaths and injuries. Modern roundabouts are calmer and safer than conventional intersections and have been deemed a “proven safety counter-measure” by the U.S. Department of Transportation.²

Roughly the size of a baseball field, modern roundabouts differ from rotaries or traffic circles, which can be as big as the stadium itself. Roundabouts feature lower, safer vehicle speeds. They can be 80 feet across with single lanes carrying 25,000 vehicles a day or larger at 200 feet, with double lanes and 45,000 vehicles a day.³

Personal injuries and fatalities plummet as much as 90 percent in modern roundabouts when compared to conventional intersections.⁴ Roundabouts cause drivers to slow down, ideally to less than 20 mph, which reduces the risks to both pedestrians and drivers.

Because roundabouts can handle 30 to 50 percent more traffic than conventional intersections, they reduce travel delays.⁵ Since roundabouts can be designed to be aesthetically pleasing, they help create a sense of place.

By January 2014, roundabouts graced more than 2,000 intersections in the U.S., with more planned.⁶ Given their safety and placemaking benefits, roundabouts should be considered for many more of the three million intersections in the U.S.

Modern roundabouts are calmer and safer than conventional intersections and have been deemed a “proven safety counter-measure” by the U.S. Department of Transportation.



Vehicle speeds on Grandview Drive in University Place, Wash., often reached or exceeded 50 mph. After the installation of modern roundabouts, vehicle crashes dropped from one every nine months to zero in 14 years.

EMERGENCY VEHICLES IN ROUNDABOUTS

Benefit of lower vehicle speeds and never having to run through a red traffic signal

Truck apron can be used by larger vehicles or to bypass a disabled vehicle



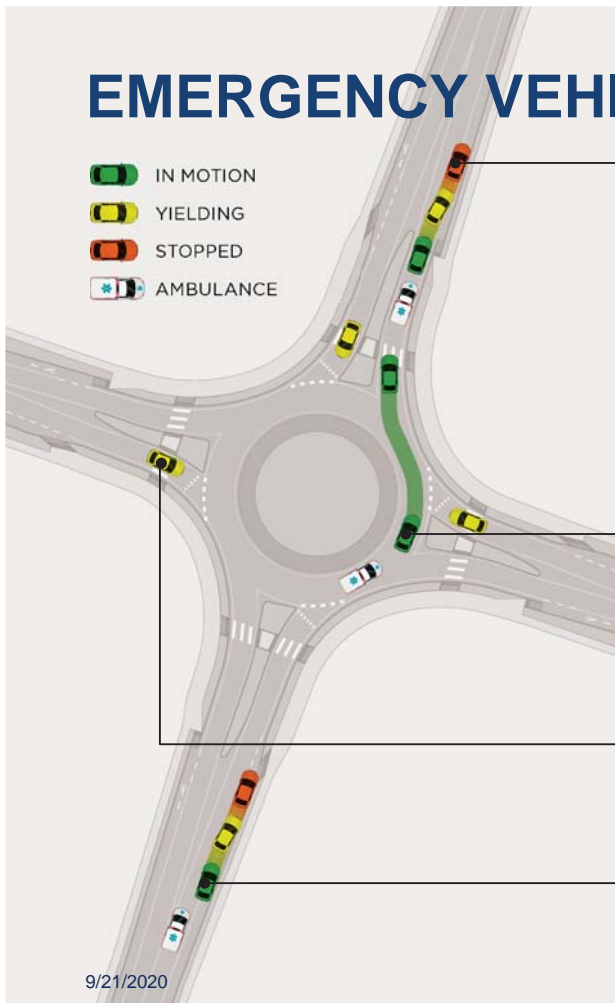
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EMERGENCY VEHICLES

-  IN MOTION
-  YIELDING
-  STOPPED
-  AMBULANCE



After you exit the roundabout, drive past the median island, pull over to the right, and stop so the emergency vehicle can safely pass.

If you are already in the roundabout, do not stop, continue to the nearest exit, drive past the median island and pull over to the right.

Do not enter a roundabout when an emergency vehicle is approaching from another direction.

Prior to reaching the roundabout median island, pull over to the right so the emergency vehicle can pass.

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EMERGENCY RESPONSE

FHWA Roundabout Video (8 min)

<http://safety.fhwa.dot.gov/intersection/roundabouts/>

Fire trucks using roundabouts (21 sec)

<https://youtu.be/e-XBEaV6CSw>

Fire Chief for Clearwater Florida demos emergency use of roundabouts (23 sec)

https://youtu.be/N4AY_R_6bZI

Fire truck roundabout - directly through intersection (28 sec)

<https://youtu.be/P47DQwGsnGk>

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FIRST RESPONDERS

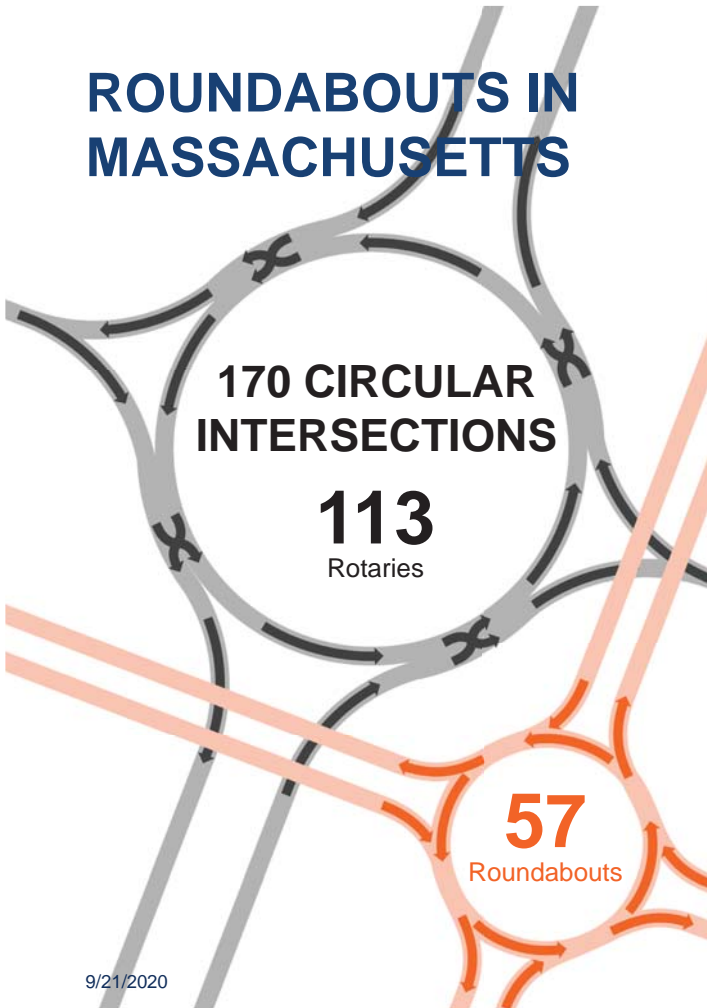
EMERGENCY RESPONSE TIMES

At any intersection, traffic conditions vary throughout the day. Roundabouts can improve travel times by eliminating unnecessary stops and delays during the course of a day.

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ROUNDBABOUTS IN MASSACHUSETTS



ROUNDBABOUTS LOCATED IN MANY DIFFERENT CONTEXTS



ROUNDBABOUTS IN CLOSE PROXIMITY TO A FIRE STATION

Nantucket



ROUNDBABOUTS AT FREEWAY RAMP TERMINALS

Millbury



ROUNDBABOUTS IN TOURIST / SEASONAL DESTINATIONS

Oak Bluffs



CONVERTING TRAFFIC SIGNALS TO ROUNDABOUTS

Amherst, MA - 2011



9/21/2020



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CONVERTING TRAFFIC SIGNALS TO ROUNDABOUTS

Hudson, MA - 2013

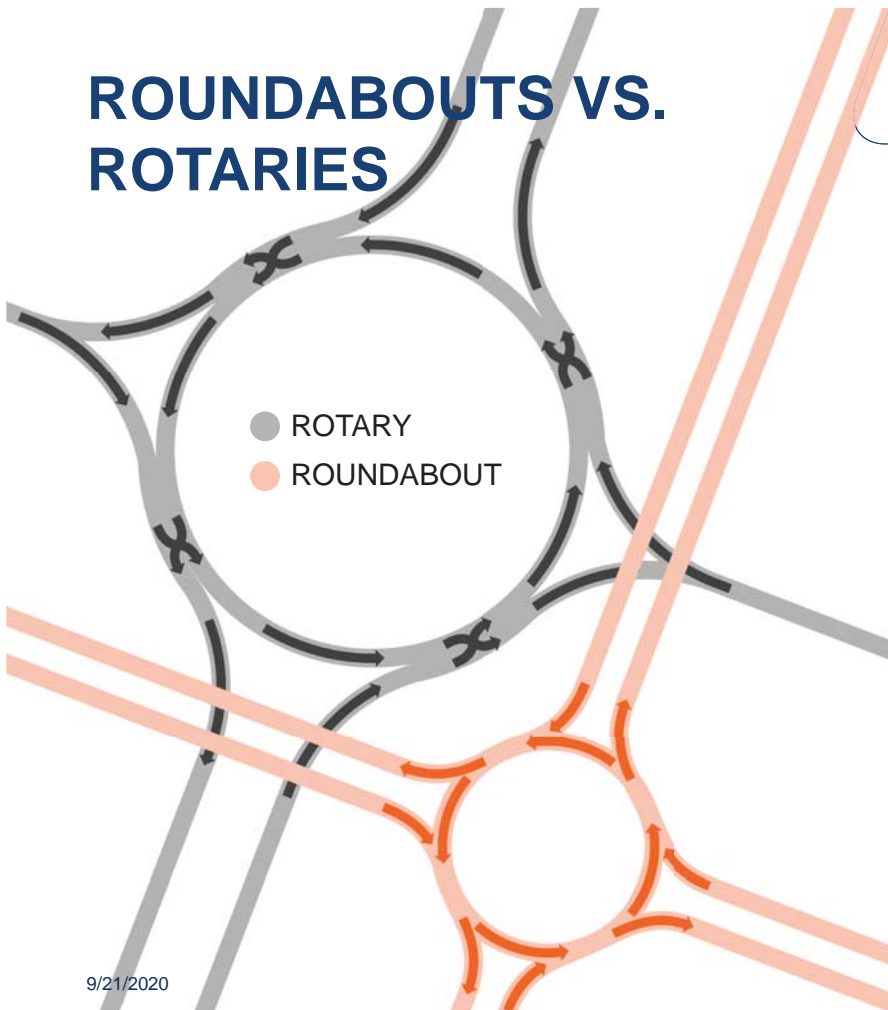


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ROUNDBABOUTS VS. ROTARIES



No lane changes are needed within the roundabout

Smaller roundabout diameters keep circulating speeds around



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ROTARY TO ROUNDBABOUT CONVERSION



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Photo: New York State DOT

- Q1: Roundabouts, rotaries, traffic circles – they're all the same, aren't they?
 A1: No. Other than sharing a circular shape, a modern roundabout operates much differently than other traffic circles, including rotaries. A modern roundabout requires entering traffic to yield the right-of-way to traffic already in the roundabout. This keeps the traffic in the roundabout constantly moving and prevents much of the gridlock that plagues rotaries, for example. Modern roundabouts are also much smaller than rotaries and thus operate at safer, slower speeds. Roundabouts with multiple lanes require drivers to choose a turn lane before they enter the intersection. No lane changes are required within roundabouts. Rotaries do not define turn lanes or do not have clear lanes marked within the circle; therefore, drivers can change lanes before their exit.
- Q2: Why do roundabouts need to be so big?
 A2: The size of a roundabout is determined by capacity needs, the size of the largest expected vehicles, the need to achieve appropriate speeds throughout the roundabout, and other factors. To handle typical trucks with overall wheelbases of 50 feet or more, a single-lane roundabout needs to be at least 100 feet in diameter and is typically 120 to 140 feet in diameter.
- Q3: Why is Massachusetts installing roundabouts?
 A3: Roundabouts offer a good solution to safety and capacity problems at intersections. Crashes decreased by an average of 52% at two-way stop-controlled intersections that were replaced with roundabouts at various locations in Massachusetts. Severe crashes that result in injury or death were reduced by 84% at the same intersections converted to roundabouts, saving lives and considerable societal costs. Roundabouts also offer high capacity at intersections without requiring the expense of constructing long turn lanes and maintaining a traffic signal.
- Q4: Aren't traffic signals safer than roundabouts for pedestrians?
 A4: It depends on the number of pedestrians and vehicles. In many cases a roundabout offers a safer environment for pedestrians than a traffic signal because the crosswalk at a roundabout is split in a pair of one-way crossings where traffic moves at slower speeds. A crosswalk at a traffic signal contends with vehicles turning both ways on green, vehicles turning right on red, and vehicles running the red light. Cars running a red light often drive at high speed and are more likely to injure or even kill people crossing the street.
- Q5: Are roundabouts appropriate everywhere?
 A5: Constructing a roundabout is a case-by-case decision. MassDOT evaluates each candidate intersection individually to determine whether a roundabout or other intersection solution will be more effective based on objective comparisons between traffic operations, safety implications, and life-cycle costs, including building and maintaining the intersection.
- Q6: I drive a big truck, and that roundabout looks awfully tight. Will I fit?
 A6: Yes. Roundabouts are designed to accommodate large vehicles such as yours. As you approach the roundabout, stay close to the left side of the entry. As you pass through, your trailer may drag over the special apron around the central island – it was designed specifically for this purpose. As you exit, again stay close to the left side of the exit.
- At a multilane roundabout, you may need to occupy the entire circulatory roadway to make the turn. Signal in advance and claim both lanes on approach to the roundabout.
- Q7: I'm driving in a multilane roundabout. How do I choose which lane to enter and exit?
 A7: Approach a multilane roundabout the same way you would approach any other intersection. If you want to turn left, use the left-most lane and signal that you intend to turn left. If you want to turn right, use the right-most lane and signal that you intend to turn right. In all cases, pass counterclockwise around the central island. When preparing to exit, turn on your right turn signal at the exit just before your exit.
- Q8: What should I do when I'm in a roundabout when an emergency vehicle arrives?
 A8: If you notice the emergency vehicle before reaching the roundabout median island, pull over to the right so the emergency vehicle can pass. If you are already in the roundabout, do not stop, continue to the nearest exit, drive past the median island and pull over to the right. If you notice an emergency vehicle approaching from another direction, slow down or stop. Do not enter the roundabout to allow the emergency vehicle to exit.
- Q9: How about riding a bicycle through a roundabout?
 A9: A person riding a bicycle has several options, and your choice depends on your degree of comfort riding in traffic. Cars in roundabouts typically drive 15 to 25 mph, close to the speed you ride your bicycle. You can circulate with cars or use the shared use path around the roundabout. When circulating as a vehicle, ride near the middle of the lane so that drivers see you and do not pass you.
- Q10: What about snow removal at roundabouts?
 A10: MassDOT maintenance crews are familiar with roundabouts and developed a special snow removal techniques. For example, one truck will start on the truck apron and plow around the roundabout to the outside, while another truck will plow each entry and exit, pushing the snow to the outside.



HOWARD STEIN HUDSON

WESTON, MA

ROUTE 30 AT I-95 NB RAMPS

REGION: METROPOLITAN AREA PLANNING COUNCIL

COLLISION DIAGRAM

TIME PERIOD ANALYZED: 2014 - 2018
 SOURCE OF CRASH DATA: STATE POLICE
 DATE PREPARED: SEPTEMBER 2019
 PREPARED BY: M. WHITE



SYMBOLS	TYPES OF CRASH	SEVERITY
Moving Vehicle	Rear End	Injury
Backing Vehicle	Head On	Fatal
Non-Involved Vehicle	Angle	* Exact location could not be determined based on crash report
Pedestrian	Turning Movement	
Bicycle	Sideswipe	
Animal	Out of Control	
Parked Vehicle	Night Time Crash	
Fixed Object		

NOT TO SCALE

ROUTE 30 OVER THE CHARLES RIVER
ROUTE 30 AT AUBURN STREET CRASH SUMMARY

Crash Diagram Ref #	Crash Number	Crash Date	Crash Time	MC	Max Injury Status	WC	LC	RS	DCC	D1 Age	D2 Age	D3 Age	D4 Age	Comments
#	#	mm/dd/yy	hh:mm	Type	Type	Type	Type	Type	Type	#	#	#	#	
1	3748575	02/28/14	2:55 PM	Rear-end	No injury	Clear	Daylight	Dry	D1:(No improper driving) D2:(Followed too closely)	21	31			V1 & V2 traveling EB on Rt. 30. V1 braked hard to avoid a rear-end collision with car in front of her, V2 was not able to stop in time and rear-ended V1
2	3792047	04/16/14	4:02 AM	Single vehicle crash	No injury	Sleet, hail (freezing rain or drizzle); Snow	Dark - lighted roadway	Slush	D1:(No improper driving)	35				V1 traveling WB on Rt. 30 when slippery conditions caused V1 to lose control and slide into guardrail
3	3826185	05/29/14	1:31 AM	Single vehicle crash	No injury	Clear	Dark - lighted roadway	Dry	D1:(Failure to keep in proper lane or running off road),(Other improper action)	25				V1 was traveling WB on Rt 30 and was distracted by cell phone use and struck curb on right side of roadway, oversteered on correction and hit left curb
4	3924386	08/25/14	3:31 PM	Sideswipe, same direction	No injury	Clear	Daylight	Dry	D1:(Unknown) D2:(Unknown)	48	81			V1 was traveling WB on Rt 30 near the lane reduction when V2 attempted to pass on the left resulting in a sideswipe
5	3953259	09/17/14	8:25 AM	Rear-end	No injury	Clear	Daylight	Dry	D1:(No improper driving),(No improper driving) D2:(Inattention)	29	31			V1 was stopped with traffic heading EB on Rt 30 when V2 struck V1 in rear
6	4070096	07/21/15	10:17 AM	Rear-end	No injury	Clear	Daylight	Dry	D1:(No improper driving) D2:(Inattention)	48	27			V1 was traveling WB on Rt30 and stopped for a flock of geese crossing the road when V2 rear-ended V1
7	4111035	11/02/15	8:57 AM	Rear-end	fatal injury - Non-incapacitated	Clear	Daylight	Dry	D1:(No improper driving) D2:(No improper driving) D3:(Distracted)	39	61	49		V1, V2 & V3 were traveling WB on Rt30. V2 & V3 were stopped at a red light when V1 struck V2 from behind, forcing V2 into V3
8	4268259	09/15/16	4:13 PM	Head-on	No injury	Clear	Daylight	Dry	D1:(No improper driving) D2:(Inattention)	51	88			V1 was traveling EB on Rt30. V2 was traveling WB on the EB side of Rt30. V2 struck V1 head on.
9	4408362	03/18/17	5:55 AM	Single vehicle crash	No injury	Cloudy	Dark - roadway not lighted	Ice		21				V1 was traveling WB on Rt30, lost control due to icy conditions and crashed into snowbank on right side of road
10	4548099	05/14/18	4:18 PM	Angle	No injury	Clear	Daylight	Dry	D1:(No improper driving) D2:(Failed to yield right of way)	54	48			V1 was traveling EB on Rt30 across Auburn Street. V2 was traveling WB and attempting to turn onto Auburn Street. V2 turned into V1 striking the left side.
11	4621015	10/12/18	5:27 PM	Rear-end	No injury	Clear; Other	Dusk	Dry	D1:(Glare),(Unknown) D2:(No improper driving)	29	45			V2 was stopped for traffic while traveling WB on Rt30. V1 was blinded by solar glare and rear-ended V2.

City of Newton



Ruthanne Fuller
Mayor

DEPARTMENT OF PUBLIC WORKS

OFFICE OF THE COMMISSIONER

1000 Commonwealth Avenue
Newton Centre, MA 02459-1449

To: City Council

From: James McGonagle, Commissioner of Public Works

Subject: Sidewalk Prioritization

Date: January 15, 2021

The Engineering Division of Public Works prioritizes the installation of new sidewalks based on proximity to public schools, village centers, and major roadways. For school priorities, we review the school building program with the Commissioner of Public Buildings and prioritize new sidewalk installations based upon newly constructed or renovated schools, attempting to keep a year or two ahead of the school opening. In addition, we focus on walking routes to schools and meet with the Safe Routes to School Committee to develop priorities for sidewalk installation.

For village centers, we prioritize new sidewalk installation based on need (those that are missing sidewalks), and also based on pedestrian density. For major roadways, such as Commonwealth Avenue, Walnut Street and Beacon Street, we prioritize new sidewalk installation based on need.

We consult with the city's ADA Coordinator, Complete Streets Committee (which includes a liaison with the TAG Committee), the Safe Routes to School Coordinator, as well as continuous discussions with the Commissioner of Public Buildings. We will be engaging the Council on Aging on sidewalk priorities to ensure that we are addressing multi-generational concerns.

We do have a priority list for new sidewalk installation for each construction

James McGonagle
Commissioner

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season. We are currently developing the sidewalk installation list, but we still need to meet with the above concerned coordinators before finalizing the list. Engineers visit each proposed installation site to determine whether sidewalk installation is feasible, and check for obstructions such as trees, or landscaping encroachment. We include the installation of new compliant accessible ramps for new sidewalks approaching these ramps, where feasible.

Residents abutting the proposed new sidewalk installations are contacted by mail prior to sidewalk installation. Most residents either appreciate the new sidewalk installation or have no comment. Some do resist and insist that no sidewalks be installed abutting their property. In this case, we discuss internally, as well as consult with the Ward Councilors, as to the appropriateness of the installation.

We also evaluate the feasibility of offering curb betterments to property owners along with the sidewalk installation, should no curbing exist.

Sidewalk maintenance is based on 311 requests, and prioritized based on order received, as well as location of the requests, so as to group requests by location.

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The work under this item shall conform to the relevant provisions of Section 701 of the Standard Specifications and the following:

GENERAL

Work to be done under this item shall consist of installing a temporary system to guide pedestrians and wheelchair users around closed sidewalk locations where no current barriers to access exist and that are on the same side of the roadway. The Temporary Pedestrian Guidance System shall meet all requirements of the Americans with Disabilities Act (ADA), The Massachusetts Architectural Access Board (AAB), the 2009 Manual on Uniform Traffic Control Devices (M.U.T.C.D.), the 2016 *MassDOT Construction Standard Details*, the contract drawing plan set and the Figure Ped-1, Figure Ped-2, Figure Ped-3 and Figure Ped-4 Pedestrian Details included in the Mass DOT *Standard Details and Drawings for the Development of Temporary Traffic Control Plans*.

The temporary pedestrian guidance system is to prevent pedestrians from entering the work area, protect pedestrians from vehicles entering a shoulder area temporarily designated for pedestrian use around the work area and to prevent pedestrians from leaving the temporary path and entering the vehicle lane.

The Contractor shall provide a Temporary Pedestrian Guidance System that is compatible with the temporary pedestrian curb ramps to be used with the Temporary Pedestrian Guidance System provided under *item 852.12 - Temporary Pedestrian Curb Ramp*.

Prior to deploying the Temporary Pedestrian Guidance System, the Contractor shall prepare a sketch plan of the system for the work site showing the guidance system, the width of the path of travel, the locations and types of signs and the locations of the temporary pedestrian curb ramps provided under item 852.12. This sketch will be submitted to the Resident Engineer for approval prior to implementation.

MATERIALS

The materials of the Temporary Pedestrian Guidance System shall be of a type approved by the MassDOT Materials Section and the MassDOT ADA/AAB Section.

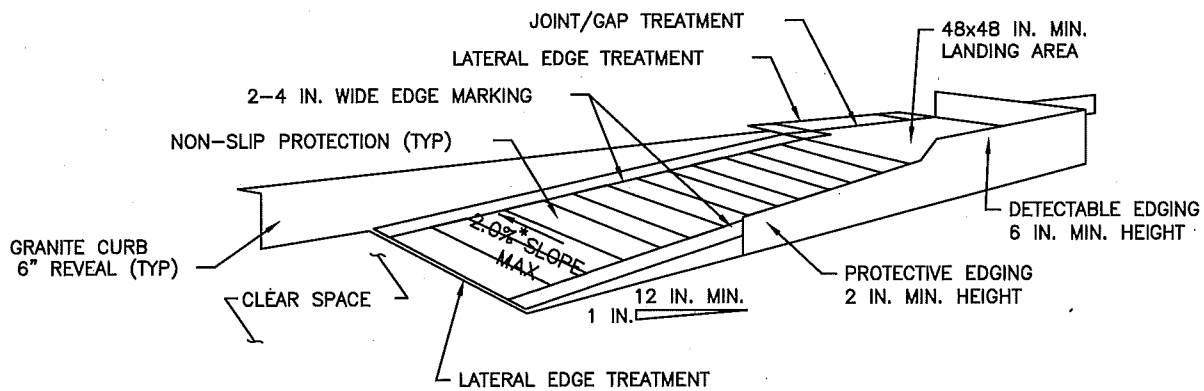
CONSTRUCTION

Elements of the temporary pedestrian guidance system may include plastic barricade, temporary barrier, and temporary barrier with pedestrian hand rail or other system approved by the Engineer.

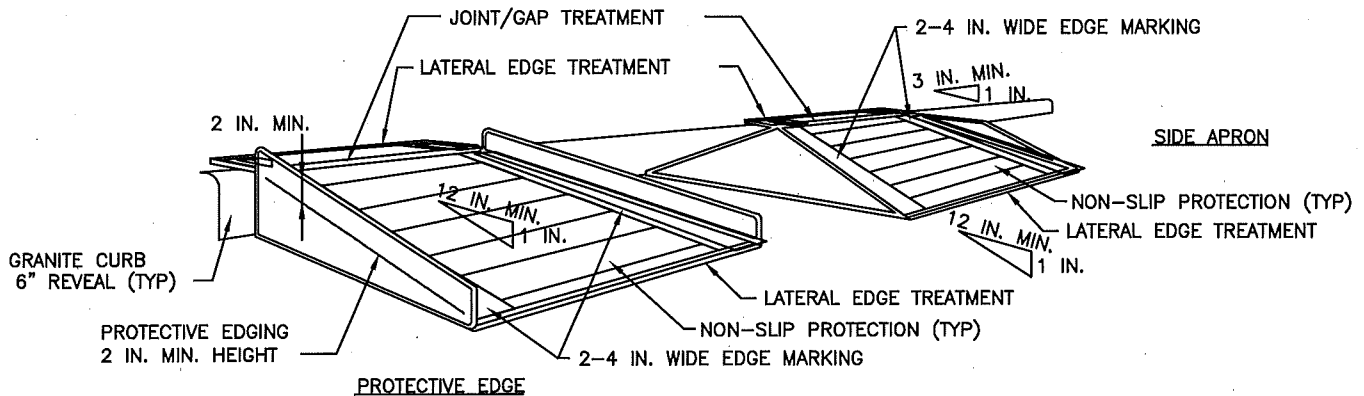
The alternate pedestrian pathway utilized for the Temporary Pedestrian Guidance System should have a smooth continuous hard surface for the entire length of the temporary pedestrian facility.

NOTES:

1. CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE AND NON-SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOP STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 IN. OR MORE.
3. DETECTABLE EDGING WITH 6 IN. MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
5. CLEAR SPACE OF 48x48 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
6. THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A CONTRASTING COLOR 2 TO 4 IN. WIDE MARKING. THE MARKING IS OPTIONAL WHERE COLOR CONTRASTING EDGING IS USED.
7. WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
8. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
9. CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5 IN. LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25 IN. HIGH, AND BEVELED AT 1:2 BETWEEN 0.25 IN. AND 0.5 IN. HEIGHT.



TEMPORARY CURB RAMP-PARALLEL TO CURB



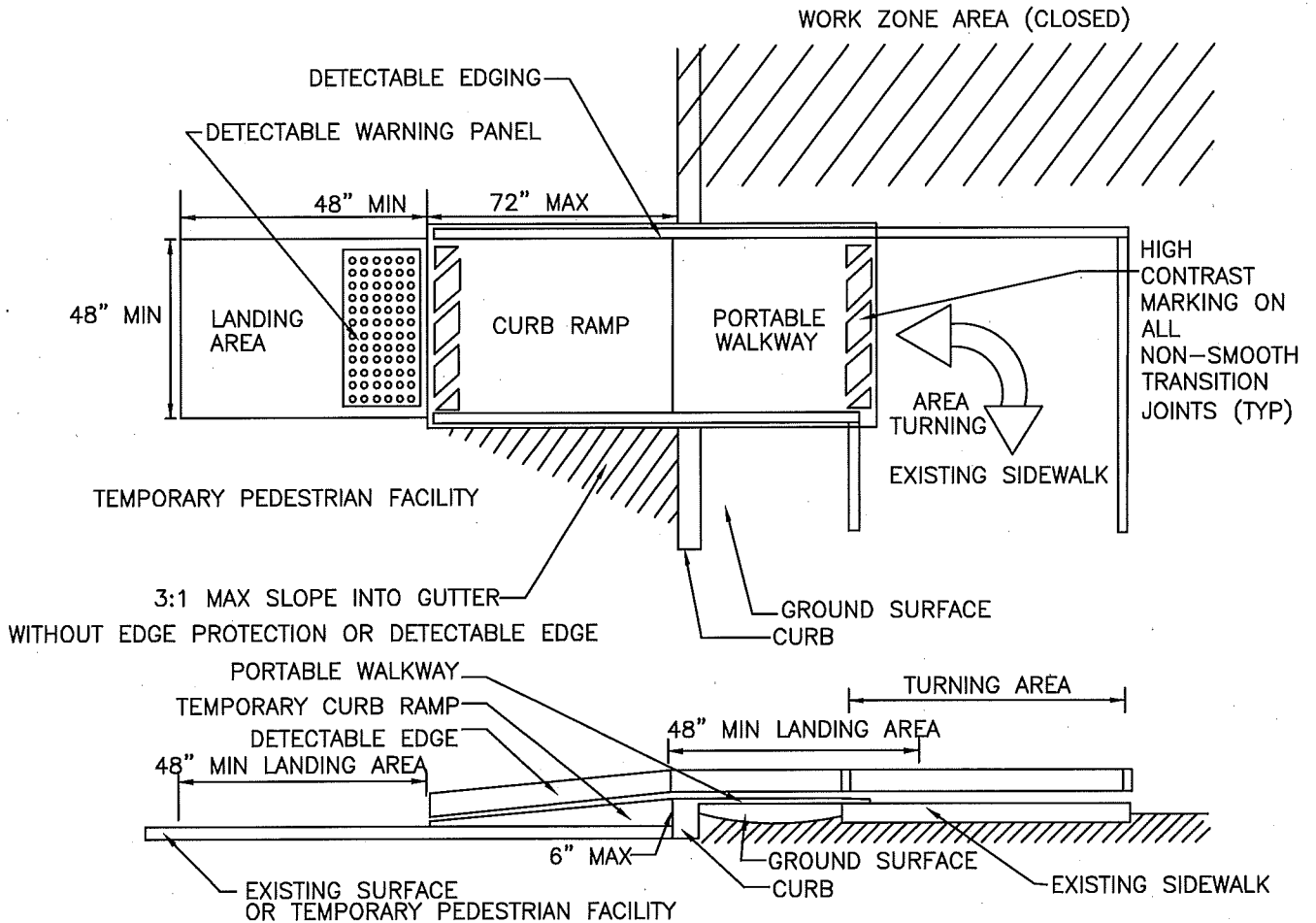
TEMPORARY CURB RAMP-PERPENDICULAR TO CURB



Standard
Details and Drawings
for the
Development of
Temporary Traffic Control Plans

FIGURE PED-1
PEDESTRIAN DETAILS

NOT TO SCALE



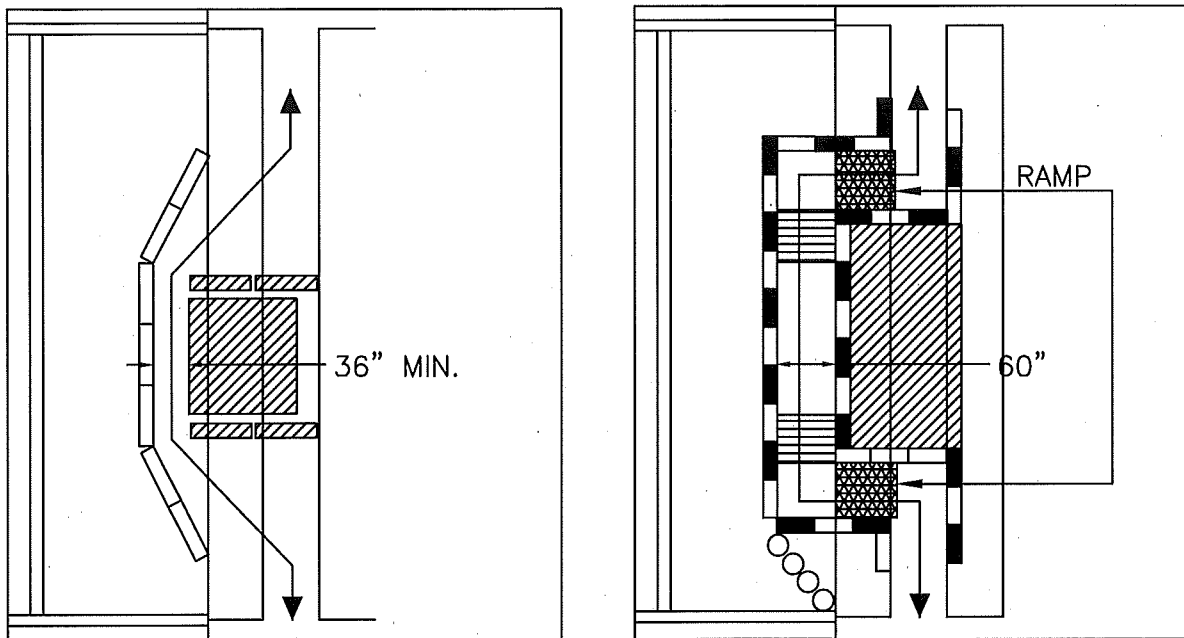
TEMPORARY CURB RAMP-TYPE 2



Standard
Details and Drawings
for the
Development of
Temporary Traffic Control Plans

FIGURE PED-2
PEDESTRIAN DETAILS

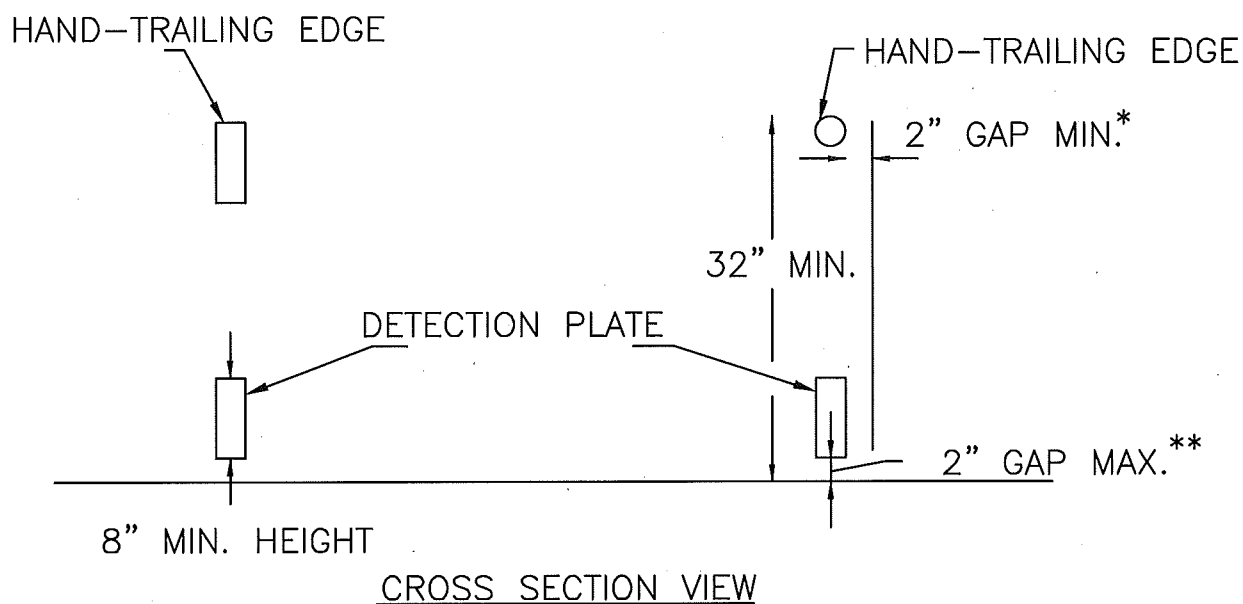
NOT TO SCALE



- When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, temporary facilities shall be provided and they shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility.
- A pedestrian channelizing device that is detectable by a person with a visual disability traveling with the aid of a long cane shall be placed across the full width of the closed sidewalk.
- When used, temporary ramps shall comply with Americans with Disabilities Act (see Figures Ped-1 & Ped-2).
- The alternate pathway should have a smooth continuous hard surface for the entire length of the temporary pedestrian facility.
- The protective requirements of a TTC situation have priority in determining the need for temporary traffic barriers and their use in this situation should be based on engineering judgment.
- Audible information devices should be considered where midblock closings and changed crosswalk areas cause inadequate communication to be provided to pedestrians who have visual disabilities.

AUDIBLE DEVICES

For long term sidewalk closures (at a minimum overnight) a form of speech messaging for pedestrians with visual disabilities shall be provided. Audible information devices such as detectable barriers or barricades and other passive pedestrian activation (motion activated) devices should be considered for these cases. These audible devices can be mountable or stand alone.



PEDESTRIAN CHANNELIZING DEVICE

NOTES:

- * THERE SHALL BE A 2 INCH GAP BETWEEN THE HAND-TRAILING EDGE AND ITS SUPPORT.
- ** A MAXIMUM 2 INCH GAP BETWEEN THE BOTTOM OF THE BOTTOM RAIL AND THE SURFACE MAY BE USED TO PROVIDE DRAINAGE.

Standard Operating Protocol for Snow Ticketing

Residential sidewalk clearing complaints are sent to Engineering through our Web QA/311 System

Engineering staff reviews WebQA address and checks to see if a warning was issued during current season.

If a warning was not issued during current season, Engineering staff will visit address

If sidewalk is **clear and no issue is found**, Engineering staff will:

- Take photo
- Upload to 311 Request
- Update Result of Request Box
- Close request with status “no problem found”

If **sidewalk has not been cleared** Engineering staff will:

- Take photo
- Leave doorhanger
- Upload photo to 311 Request
- Check box that states “Snow Shoveling Warning Given to Resident”
- Add notes stating “Will return after 24 hours to check for compliance”
- Change status to “In Progress”

Engineering staff will revisit address after 24 hours have passed

If sidewalk **has been cleared**, Engineering staff will:

- Take photo
- Upload photo to 311 Request
- Close request with status “Warning Issued”
- Update Result of Request box to say compliant after warning issued

If sidewalk **has not been cleared**, Engineering staff will:

- Take photo
- Upload photo to 311 Request
- Check box that states “Snow Shoveling Sidewalk Warning Previously Issued”
- Change status to “Assigned for Further Review”
- Update Result of Request box “Sidewalk not cleared”
- Engineering staff will not return to address unless a new 311 request is entered.

If a warning was issued during current season, Engineering staff will visit address

If sidewalk is clear and no issue is found, Engineering staff will:

- Take photo
- Upload photo to 311 Request
- Update Result of Request Box
- Close request with status “no problem found”

If sidewalk **has not been cleared**, Engineering staff will:

- Take photo
- Upload photo to 311 Request
- Check box that states “Snow Shoveling Sidewalk Warning Previously Issued”
- Change status to “Assigned for Further Review”
- Update Result of Request box to say sidewalk was not cleared
- Not return to address unless a separate 311 request is entered into WebQA

Ticketing

If status is changed to “Assigned for Further Review”, WebQA will assign the request to Public Works Administration and a ticket will be issued.

- The status of the 311 Request will be updated “Investigated - Resident Issued A Ticket”
- The request will be closed with a status of “Payment Received” once payment has been received.
- Add to Users/snow/2020-2021 Season/Snow Ticket Issued excel spreadsheet. (include ticket #)
- When ticket is paid, report will come from Treasury and the WebQA request is closed out with status updated to ***Ticket paid***.

City-Wide Sidewalks

TOTAL	543	
Cancelled by Resident		11
Duplicate		47
Reported Too Early		40
Not Yet Inspected		176
In Process		9
No Problem Found		93
Exempt from Ordinance (Disability/Hardship/Religious)		2
Snow Shoveling Warning Issued		94
Fine Issued		0
Issue Resolved (specific to City and Business Sidewalks)		71

BREAKDOWN BY SIDEWALK TYPE

Residential Sidewalks

TOTAL	447	
Cancelled by Resident		11
Duplicate		39
Reported Too Early		40
Not Yet Inspected		162
In Process		8
No Problem Found		91
Exempt from Ordinance (Disability/Hardship/Religious)		2
Snow Shoveling Warning Issued		94
Fine Issued		0

City Sidewalks

TOTAL	78	
Cancelled by Resident		
Duplicate		6
Reported Too Early		
Not Yet Inspected		
In Process		
No Problem Found		1
Issue Resolved		71

Business Sidewalks

TOTAL	18	
Cancelled by Resident		
Duplicate		2
Reported Too Early		
Not Yet Inspected		14
In Process		1
No Problem Found		1
Issue Resolved		