

# BIKE THE LAKE

Bike-Ped  
Infrastructure &  
Planning



Ten Year Plan Update



Bike-Ped Plan



Mid-State RCC Survey



Asset Management Dashboards

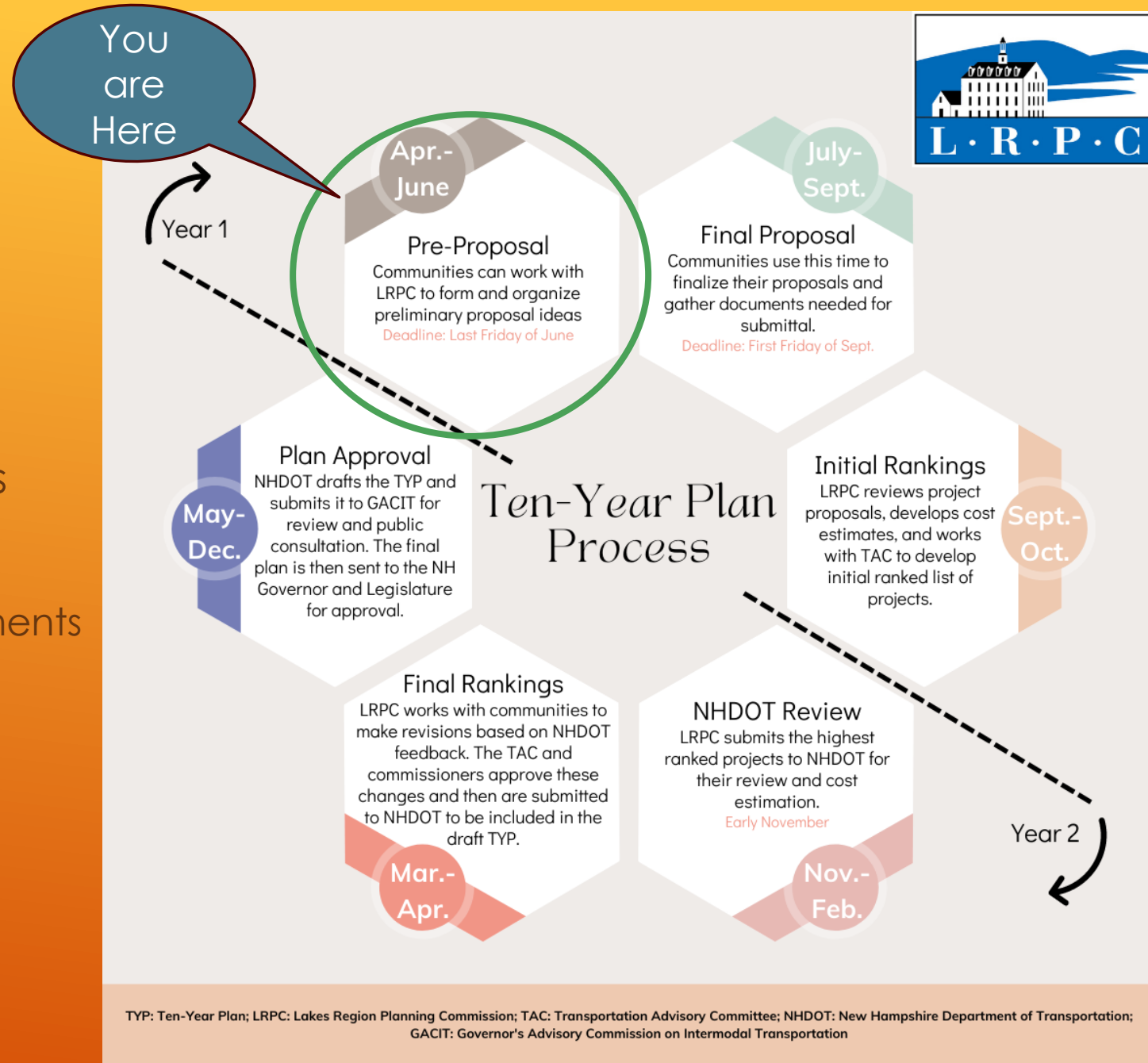
# TOPICS

TEN YEAR PLAN (TYP)



- ▶ Ten Year Plan is with NH Legislators
  - ▶ Has been reviewed by Governor
    - ▶ Corridor Study
    - ▶ EV Infrastructure
- ▶ LRPC currently accepting proposals
- ▶ RFQ out soon for on-call engineer
  - ▶ Some funding available for assessments

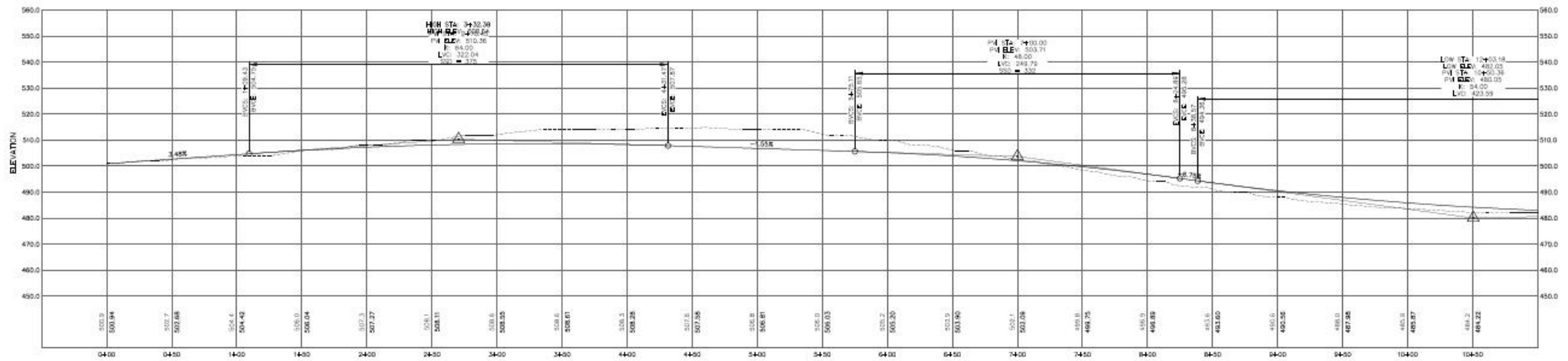
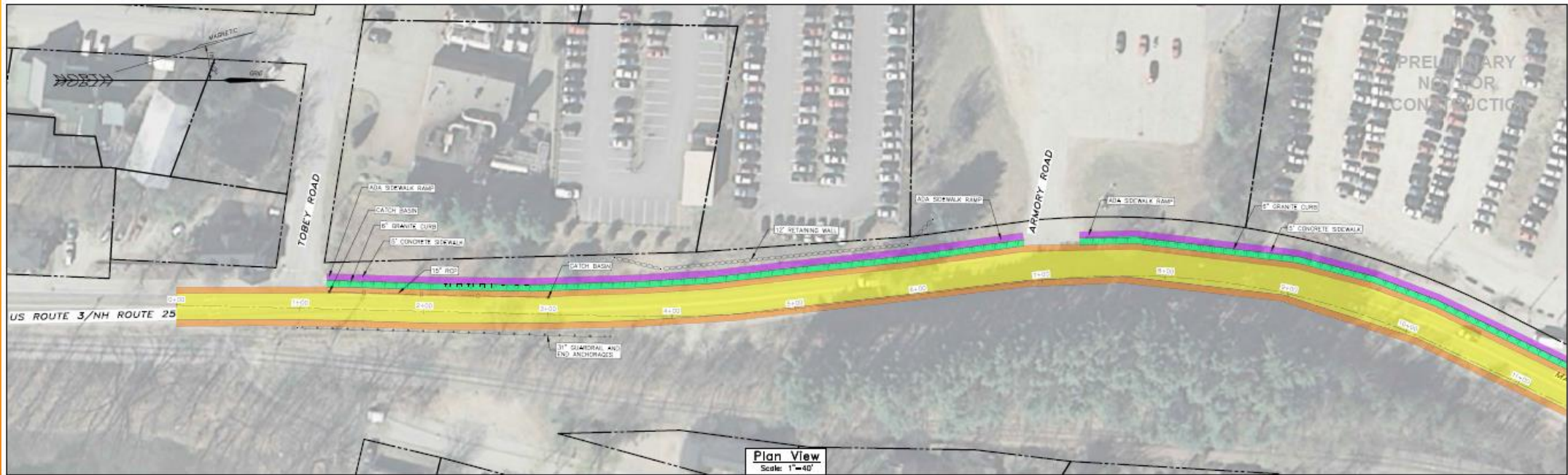
# TYP UPDATE





# APPLICATION REQUIREMENTS

- ▶ Project Type
  - ▶ Highway Improvements
    - ▶ Widening, intersections, access management
    - ▶ Park & rides, intermodal transportation centers, bus shelters
  - ▶ Planning Studies
  - ▶ Asset Management
    - ▶ Replacement, Rehab
  - ▶ Bike Ped
- ▶ Purpose, Need & Scope
- ▶ Supplemental
  - ▶ Local plans, maps, surveys, **cost estimate**, crash data, **project scope**, studies, **conceptual designs**, transit data



**Legend**

- Proposed Mill and Overlay
- Proposed Full Depth Reconstruction
- Proposed Snow Shelf
- Proposed Sidewalk

1 inch = 40 feet  
( 1 : 480 )

|           |          |                     |
|-----------|----------|---------------------|
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| No.       | Revision | DATE BY             |

**HEB Engineers**  
CIVIL • STRUCTURAL • SURVEY

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Multi-Modal Improvements  
of  
US Route 3  
located in  
Plymouth, NH  
prepared for  
Lakes Region Planning Commission

2022-105  
SK-1  
SHEET 1 OF 3

|             |            |
|-------------|------------|
| DESIGNED BY | AML        |
| DRAWN BY    | CFX/JES    |
| CHECKED BY  | JOP        |
| SCALE       | 1"=40'     |
| DATE        | 11/08/2022 |

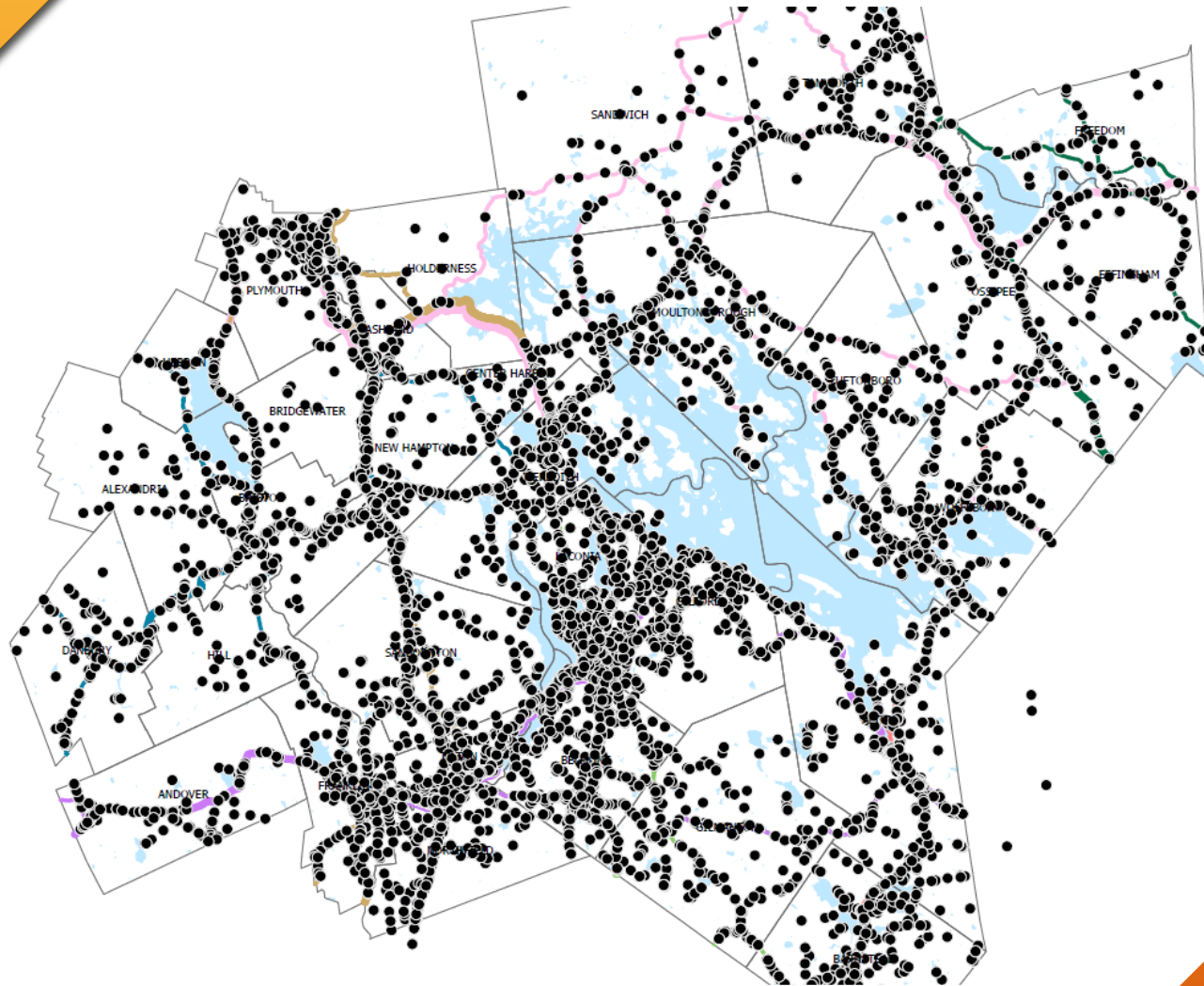
| NHDOT Item #                   | Description  | Unit | Unit Cost    | Phase 1: Tobey Road to Foster Street |               | Phase 2: Foster Street to Fairgrounds Rd. |              |
|--------------------------------|--|------|--------------|--------------------------------------|---------------|---|--------------|
|                                |  |      |              | Quantity                             | Total Cost    | Quantity                                  | Total Cost   |
| <b>Earthwork</b>               |  |      |              |                                      |               |   |              |
| 201.1                          | Clearing and Grubbing                                  | Acre | \$ 25,000.00 | 0.5                                  | \$ 12,500.00  | 0   | \$ -         |
| 203.1                          | Common Excavation                                      | CY   | \$ 18.00     | 8,200                                | \$ 147,600.00 | 111                                       | \$ 2,000.00  |
| 203.2                          | Rock Excavation  | CY   | \$ 90.00     | 1,000                                | \$ 90,000.00  | 5   | \$ 450.00    |
| 214                            | Fine Grading   | Unit | \$ 25,000.00 | 1                                    | \$ 25,000.00  | 1   | \$ 2,500.00  |
| <b>Base Courses</b>            |  |      |              |                                      |               |   |              |
| 304.1                          | Sand   | CY   | \$ 30.00     | 1,333                                | \$ 40,000.00  | 0   | \$ -         |
| 304.2                          | Gravel   | CY   | \$ 35.00     | 1,333                                | \$ 46,866.67  | 0   | \$ -         |
| 304.3                          | Crushed Gravel   | CY   | \$ 40.00     |                                      |               |   |              |
| <b>Pavements</b>               |  |      |              |                                      |               |   |              |
| 403.11                         | Hot Bituminous Pavement, Machine Method                | Ton  | \$ 90.00     |                                      |               |   |              |
| 403.12                         | Hot Bituminous Pavement, Hand Method                   | Ton  | \$ 200.00    |                                      |               |   |              |
| 410.22                         | Asphalt Emulsion for Tack Coat                         | Gal  | \$ 8.00      |                                      |               |   |              |
| 417                            | Cold Planing Bituminous Surfaces                       | SY   | \$ 5.00      |                                      |               |   |              |
| <b>Structures</b>              |  |      |              |                                      |               |   |              |
|                                | Retaining Wall   | SF   | \$ 150.00    |                                      |               |   |              |
| <b>Incidental Construction</b> |  |      |              |                                      |               |   |              |
| 603.00215                      | 15" R.C. Pipe 2000D                                    | LF   | \$ 100.00    |                                      |               |   |              |
| 604.124                        | Catch Basin, Type B, 4'-Diameter                       | EA   | \$ 4,000.00  |                                      |               |   |              |
| 604.4                          | Reconstructing/Adjusting Catch Basins                  | LF   | \$ 750.00    |                                      |               |   |              |
| 604.62                         | Drainage Manhole Cover and Frames                      | EA   | \$ 700.00    |                                      |               |   |              |
| 606.18001                      | 31" W-Beam Guardrail with 8" Offset Block (Steel Post) | LF   | \$ 45.00     |                                      |               |   |              |
| 606.82                         | Anchorage for Beam Guardrail                           | EA   | \$ 4,000.00  |                                      |               |   |              |
| 608.24                         | 4" Concrete Sidewalk (F)                               | SY   | \$ 70.00     |                                      |               |   |              |
| 608.54                         | Detectable Warning Plates                              | SY   | \$ 500.00    |                                      |               |   |              |
| 609.01                         | Straight Granite Curb                                  | LF   | \$ 60.00     |                                      |               |   |              |
| 615.024                        | Relocating Traffic Sign Type B                         | EA   | \$ 600.00    |                                      |               |   |              |
| 615.02201                      | Traffic Sign Type B, Breakaway Mounts                  | SF   | \$ 180.00    |                                      |               |   |              |
| 618.7                          | Flaggers   | HR   | \$ 55.00     |                                      |               |   |              |
| 619.1                          | Maintenance of Traffic                                 | Unit | \$ 1.00      |                                      |               |   |              |
| 628.2                          | Sawed Bituminous Pavement                              | LF   | \$ 4.00      |                                      |               |   |              |
| 632.0104                       | Retroreflective Paint Pavement Marking, 4" Line        | LF   | \$ 0.50      |                                      |               |   |              |
| 632.0124                       | Retroreflective Paint Pavement Marking, 24" Line       | LF   | \$ 0.75      |                                      |               |   |              |
| 645.531                        | Silt Fence   | LF   | \$ 5.00      |                                      |               |   |              |
| 646.31                         | Turf Establishment with Mulch and Tackifiers           | SY   | \$ 7.00      |                                      |               |   |              |
| 692                            | Mobilization   | Unit | \$ 1.00      | 131,171                              | \$ 132,000.00 | 24,270                                    | \$ 24,270.00 |
| 698.13                         | Field Office Type C                                    | Mo.  | \$ 2,000.00  | 9                                    | \$ 18,000.00  | 4   | \$ 8,000.00  |
| 699                            | Miscellaneous Temporary Erosion and Sediment Controls  | \$   | \$ 30,000.00 | 1                                    | \$ 30,000.00  | 1   | \$ 5,000.00  |
|                                | Utility Pole Relocations                               | EA   | \$ 15,000.00 | 1                                    | \$ 15,000.00  | 0   | \$ -         |

| Phase 1: Tobey Rd. to Foster St.      |                 | Phase 2: Foster St. to Fairgrounds Rd. (Sidewalk & Curbing) |               |
|---------------------------------------|-----------------|---|---------------|
| Minor Item Allowance (20%)            | \$ 336,000.00   | Minor Item Allowance (20%)                                  | \$ 62,000.00  |
| 2023 Base Estimate                    | \$ 2,015,000.00 | 2023 Base Estimate  | \$ 370,000.00 |
| 2034 Base Estimate                    | \$ 2,731,000.00 | 2034 Base Estimate  | \$ 502,000.00 |
| 2023 Construction Engineering (25%)   | \$ 504,000.00   | 2023 Construction Engineering (25%)                         | \$ 93,000.00  |
| 2034 Construction Engineering (25%)   | \$ 683,000.00   | 2034 Construction Engineering (25%)                         | \$ 126,000.00 |
| Contingency                           | 10%             | Contingency   | 10%           |
| 2023 Construction Cost (CN)           | \$ 2,721,000.00 | 2023 Construction Cost (CN)                                 | \$ 500,000.00 |
| 2034 TYP Construction Cost (CN)       | \$ 3,688,000.00 | 2034 TYP Construction Cost (CN)                             | \$ 679,000.00 |
| 2023 Prelim. Engineering (20% PE)     | \$ 545,000.00   | 2023 Prelim. Engineering (PE)                               | \$ 75,000.00  |
| 2029 TYP Prelim. Engineering (20% PE) | \$ 738,000.00   | 2029 TYP Prelim. Engineering (PE)                           | \$ 102,000.00 |
| 2023 Right-of-way (RW)                | \$ 80,000.00    | 2023 Right-of-way (RW)                                      | \$ 80,000.00  |
| 2032 Right-of-way (RW)                | \$ 103,000.00   | 2032 Right-of-way (RW)                                      | \$ 103,000.00 |
| 2023 Total Project Cost               | \$ 3,346,000.00 | 2023 Total Project Cost                                     | \$ 655,000.00 |
| NHDOT TYP Total Project Cost          | \$ 4,529,000.00 | NHDOT TYP Total Project Cost                                | \$ 884,000.00 |

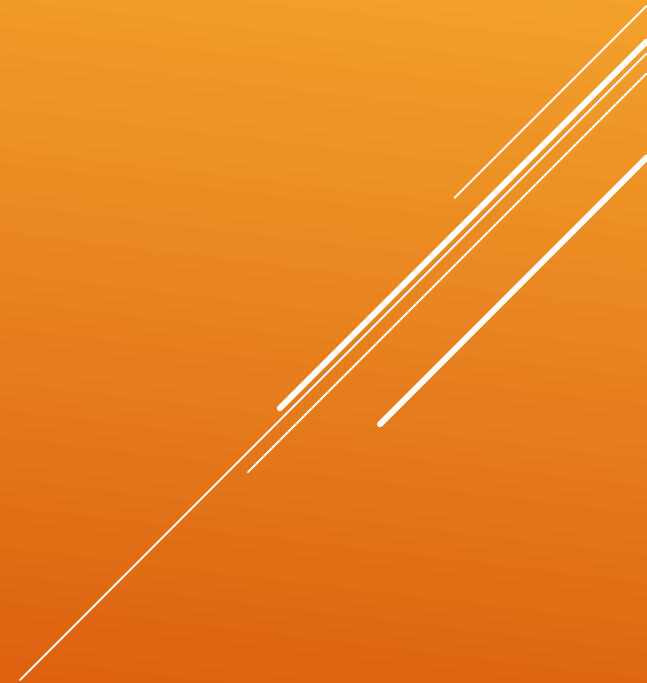
# CRASH DATA MAP

- ▶ Crash data from 2017 – 2022
- ▶ Not perfect but working with what we have
- ▶ Only fatal accidents have been through QA/QC at NHDOT.
- ▶ ~18,000 reported accidents





# BICYCLE PEDESTRIAN PLAN





Contents: Context, Vision,  
Development, Existing Conditions,  
Trends, Projects, Action Plan



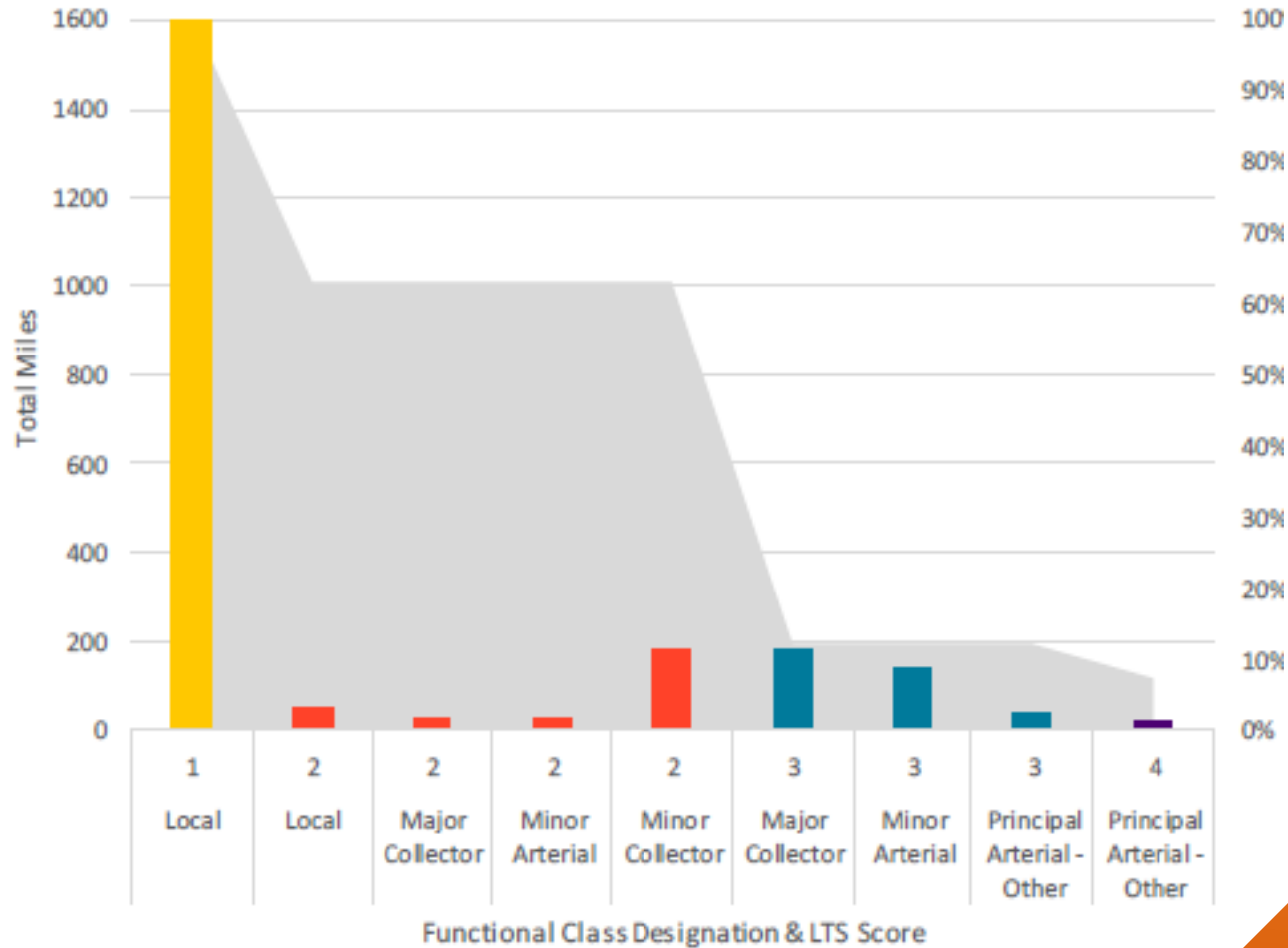
Formatting updated for readability



Action plan updated to meet  
grant application requirements

# UPDATED BIKE PED PLAN

LTS Score by Functional Class



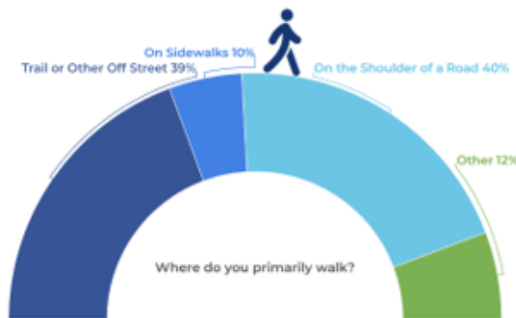
# LEVEL OF TRAFFIC STRESS (LTS)

- ▶ Findings
  - ▶ High # of roads with low LTS
  - ▶ Low connectivity as corridors & connectors have high LTS
- ▶ Recommendation
  - ▶ New TYP projects
  - ▶ Utilize NHDOT paving schedule for painting wider shoulders
    - ▶ Minimize road expansion
    - ▶ Slows vehicles
  - ▶ Further data collection for speed

## Walking Data

### Top 3 Reasons for Walking

- 1 For Exercise
- 2 To Be Outdoors
- 3 To Walk a Pet



The leading factors that **prevent** respondents from walking more are:

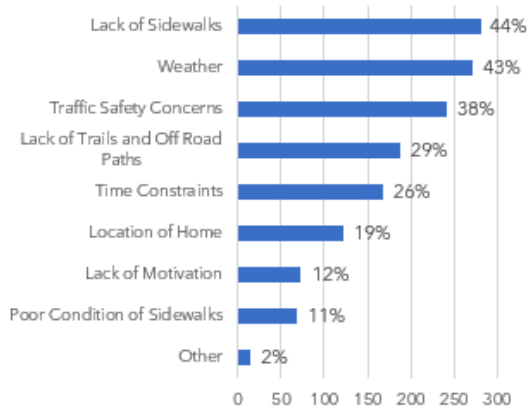
- o Lack of Sidewalks
- o Weather
- o Traffic Safety Concerns

The main improvements that would **encourage** respondents to walk more are:

- o More Trails or Off-Road Walking
- o More Sidewalks
- o Better Maintained Sidewalks

- Most of the respondents walk on either the shoulder of a road or trails and off-street paths
- Only 10% of walkers used sidewalks

What **prevents** you from walking more or at all?

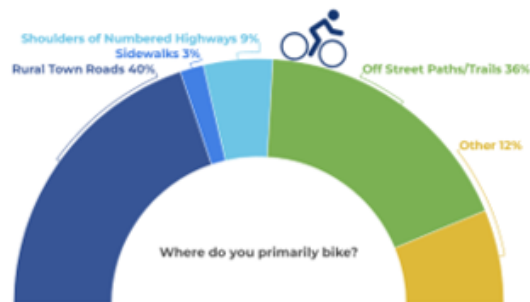


**46%** of respondents believe that there are places in their community in need of repaired or new sidewalks

## Bicycling Data

### Top 3 Reasons for Bicycling

- 1 For Exercise
- 2 To Be Outdoors
- 3 To Spend Time with Others



The leading factors that **prevent** respondents from biking are:

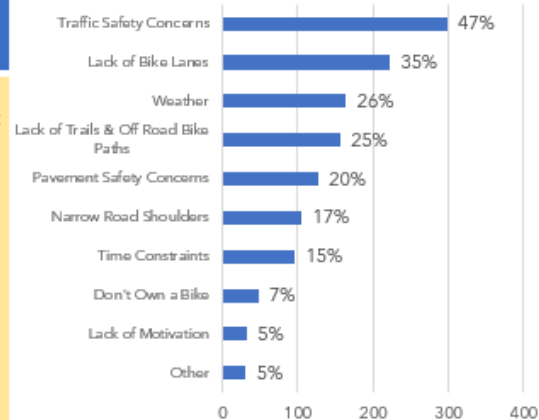
- o Traffic safety concerns
- o Lack of bike lanes
- o Weather

The main improvements that would **encourage** respondents to bike more are:

- o 4ft. shoulders on paved roads
- o More off-road bike paths and trails
- o Dedicated on-street

- Most bikers ride on either rural town roads or off-street paths and trails

What **prevents** you from biking more or at all?



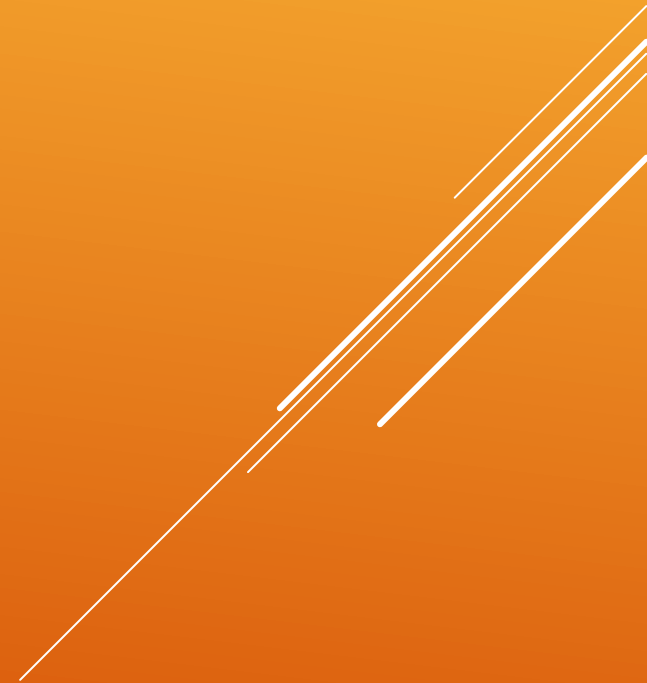
**81%** of respondents would like more off-street paths and trails in their community.

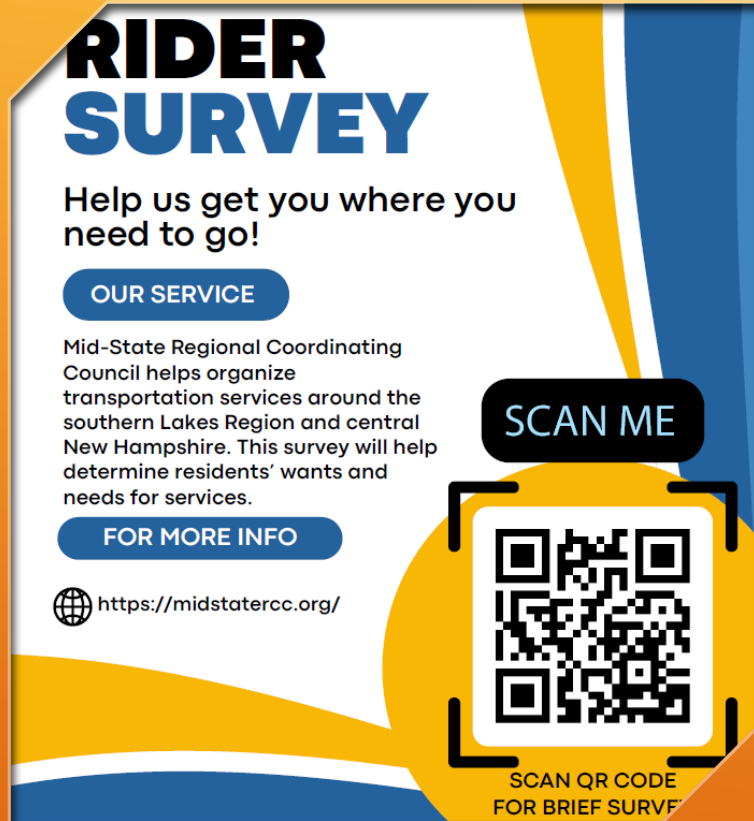
## Respondent Data

- ❖ 634 responses were received, which is over double that of the 2011 survey
- ❖ 79% of respondents were 50 years or older, a 12% increase from 2011
- ❖ About half of the respondents were from Laconia, Hebron, Gilford, or Meredith
- ❖ 69% of respondents believe that local governments should be responsible for improving bicycle and pedestrian infrastructure

# 2021 SURVEY RESULTS

REGIONAL COORDINATING COUNCIL  
(RCC) RIDER SURVEY



A flyer for a rider survey. The title 'RIDER SURVEY' is in large, bold, blue letters. Below it, the text reads 'Help us get you where you need to go!'. There are two blue buttons: 'OUR SERVICE' and 'FOR MORE INFO'. The 'OUR SERVICE' button is followed by a paragraph: 'Mid-State Regional Coordinating Council helps organize transportation services around the southern Lakes Region and central New Hampshire. This survey will help determine residents' wants and needs for services.' Below this is a globe icon and the URL 'https://midstatercc.org/'. A large QR code is centered on a yellow circular background, with a black 'SCAN ME' button above it. Below the QR code, it says 'SCAN QR CODE FOR BRIEF SURVEY'.

**RIDER SURVEY**

Help us get you where you need to go!

**OUR SERVICE**

Mid-State Regional Coordinating Council helps organize transportation services around the southern Lakes Region and central New Hampshire. This survey will help determine residents' wants and needs for services.

**FOR MORE INFO**

 <https://midstatercc.org/>

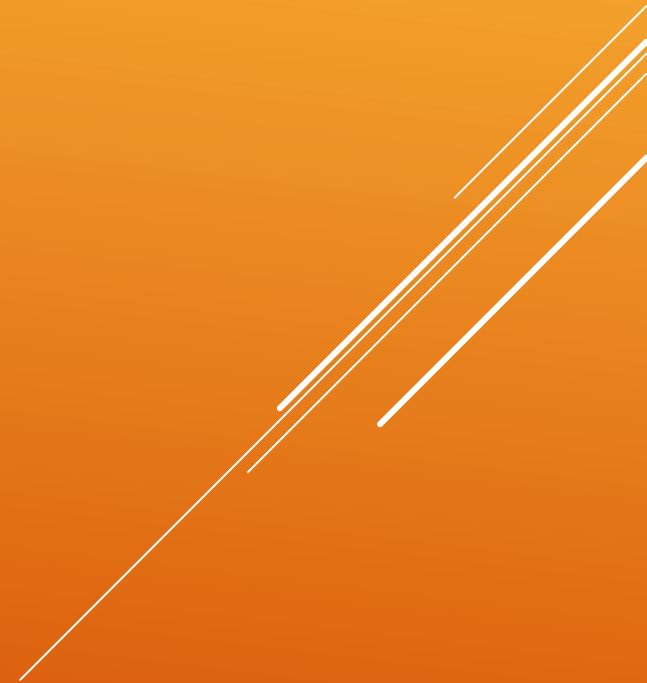
**SCAN ME**

SCAN QR CODE FOR BRIEF SURVEY

- ▶ LRPC & CNHRPC Updating RCC Plan
  - ▶ Required for RCC funding every 5 years
- ▶ Funded through additional grant with NHDOT
- ▶ Survey out until March 31<sup>st</sup>

# MID STATE RCC RIDERSHIP SURVEY

# STATEWIDE ASSET DATA EXCHANGE SYSTEM (SADES)



Culverts & Other  
Closed Drainage  
System (CCDS)

Pavement As-Built  
Status

Stream Crossing

Pedestrian  
Infrastructure

- Curb Ramps
- Sidewalks
- Pedestrian Push Buttons

Aquatic Restoration  
Mapper

Overhead  
Structures

Tidal Crossings

Guardrails

Road Surface  
Management  
System

# AVAILABLE DATA

[NH Statewide Asset Data Exchange System \(SADES\) \(arcgis.com\)](https://nhsades.maps.arcgis.com)

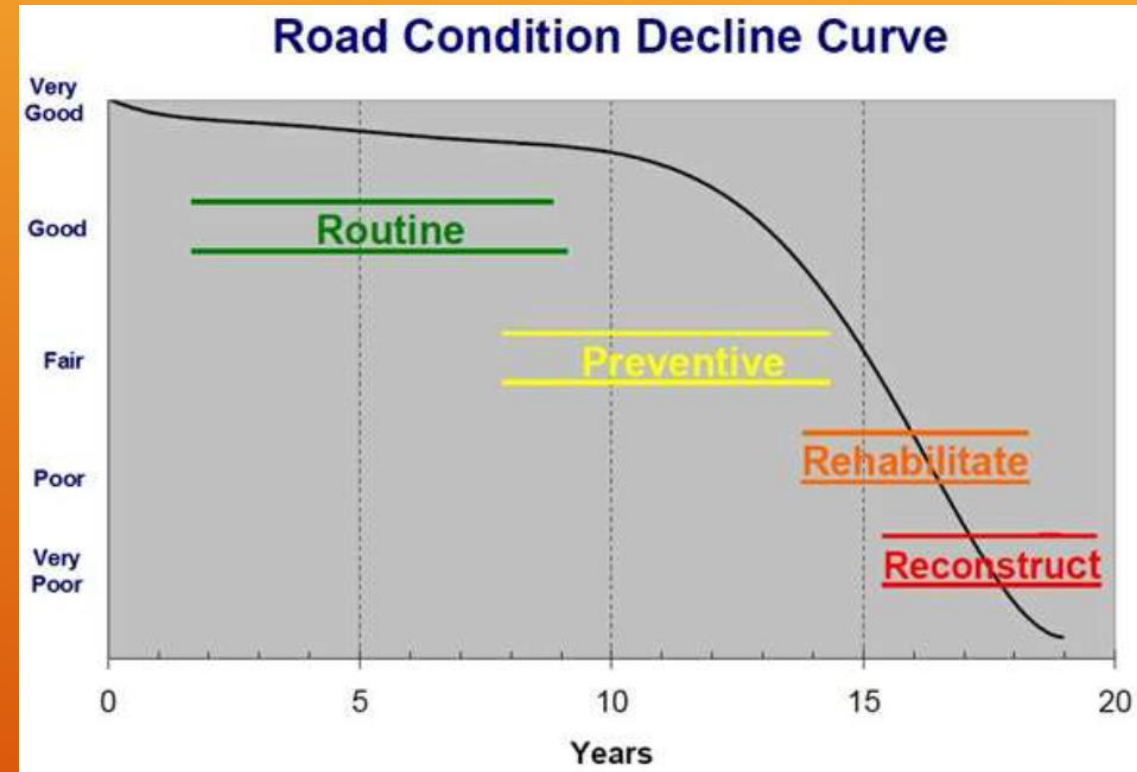
Or <https://nhsades.maps.arcgis.com/home/index.html>

(also view "Gallery" tab)



- ▶ Provides an overview and estimate of road system conditions and approximate costs for future improvement
- ▶ AASHTO estimate every \$1 spent to keep a road in good condition avoids \$6-14 needed later to rebuild once it has deteriorated
- ▶ Coordinate with local road agent to incorporate their specific repair techniques and local costs.
- ▶ Works well in conjunction with CCDS

# ROAD SAFETY MANAGEMENT SYSTEM





# APRIL TAC MEETING

April 1<sup>st</sup> at Franklin Free Public Library from 2:00 – 4:00PM

- ▶ Focus on Stormwater & Drainage
  - NHDES Stormwater and Wastewater Asset Management Program
    - Deborah Loiselle, NHDES Stormwater Coordinator
    - Sarah Ridyard, P.E., NHDES Sustainability Engineer
  - New Hampshire Stream Crossing Replacement Prioritization Project
    - Polly Crocker, NHDES Watershed Management Specialist
    - Koorosh Asadifakhr, UNH Grad Student Low Impact Design (LID)
- ▶ Contact Sean Chamberlin for questions on this presentation as well as more information regarding TAC or other transportation topics.
  - ▶ [schamberlin@lakesrpc.nh.gov](mailto:schamberlin@lakesrpc.nh.gov)
  - ▶ (603) 279-5335

## Other topics not discussed:

- Processed Glass Aggregate (PGA)
- Concord Laconia Connector – Transit route
- EV Planning
- Legislation tracking
- Transition to DPW
- Complete Streets
- Solar Eclipse travel planning

Q&A

A decorative graphic consisting of several parallel white lines of varying lengths, slanted diagonally from the bottom right towards the top right, set against the orange background.

An illustration of a large, multi-story building with a black roof and a central steeple. The building has several dormer windows and rows of windows. To the left is a smaller white building with a black roof. The background features blue hills and a white sky. The text "Thank You!" is written in a black serif font on the right side of the illustration.

Thank You!

L · R · P · C