Lebanon 29612
I-89 Exit 18 / NH 120 Improvements

UVLS RPC

Transportation Advisory Committee

September 14, 2021

Agenda

- Welcome and Introductions
- Project Intro, Schedule & Status
- Purpose & Need Development
- Alternatives Screening
- Next Steps
- Contact Information
- Questions

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Lebanon 29612 – NH Route 120

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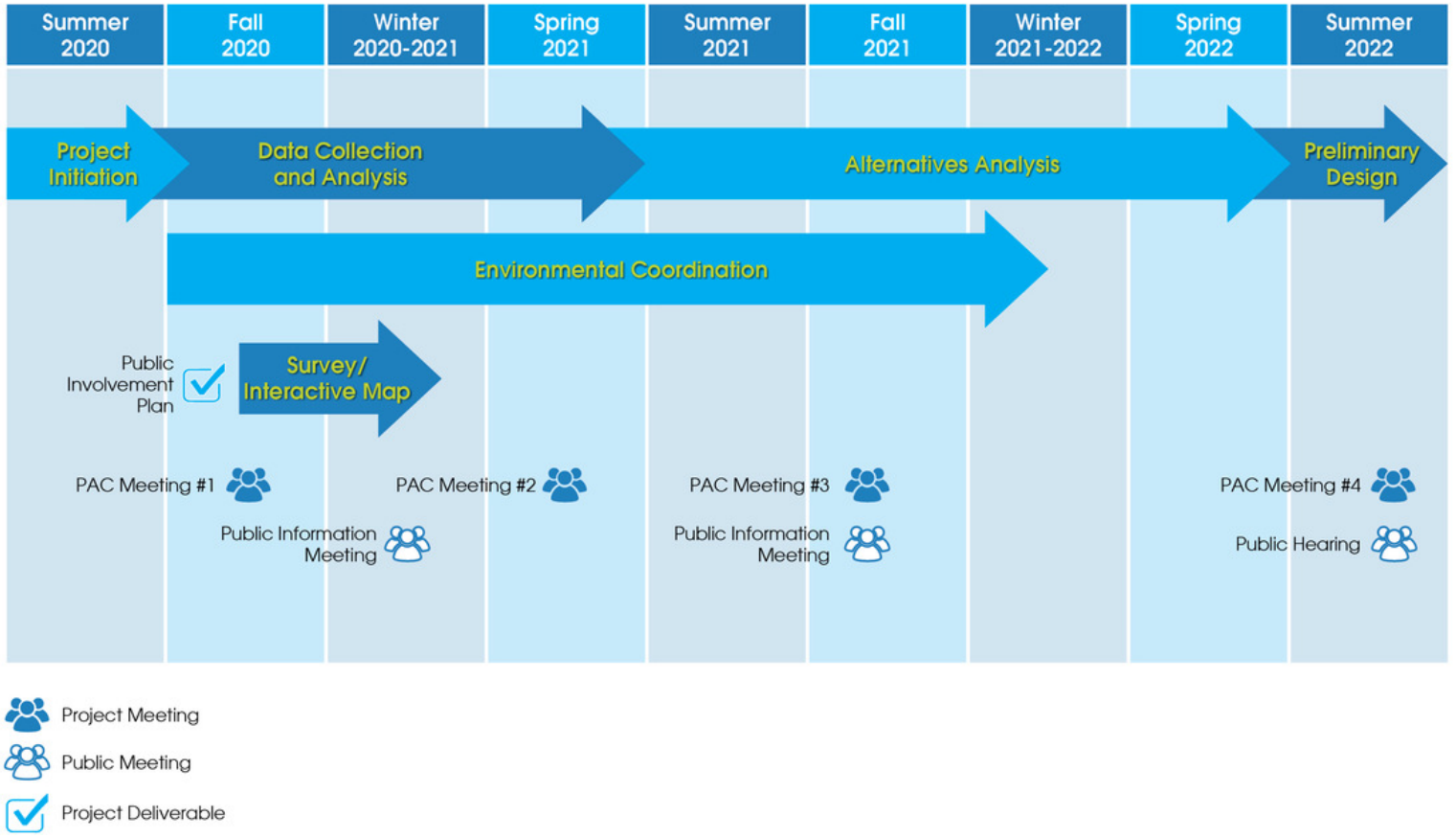
Current Project Schedule (Summer '21)



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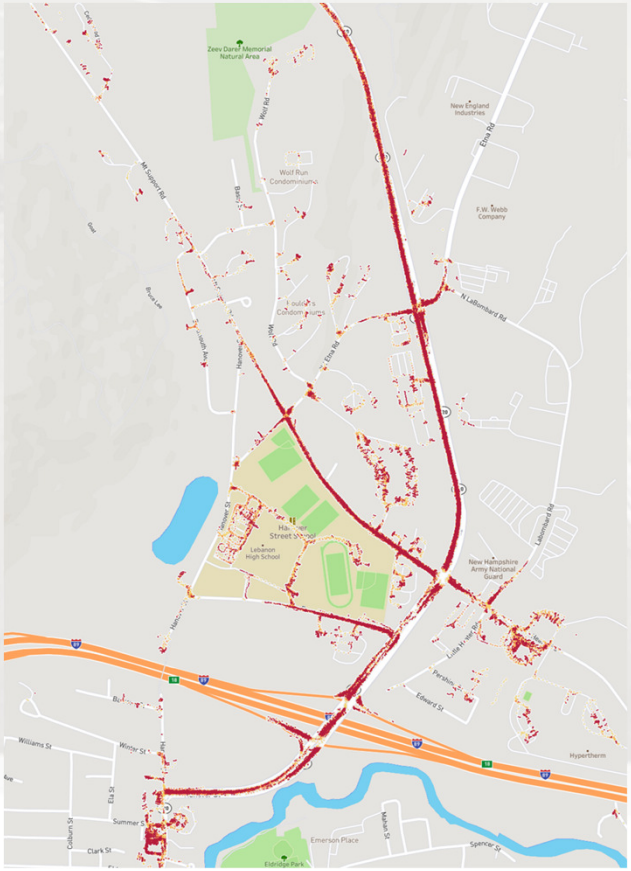
Project Status – General

- Primarily focused on Environmental & Traffic Data Collection Efforts
- Refined Base Traffic Model (2024~2044)
- Reviewed Operational Deficiencies
- Collected PAC Comments
- Refined Purpose and Need Statement
- Refined Matrix Screening Categories



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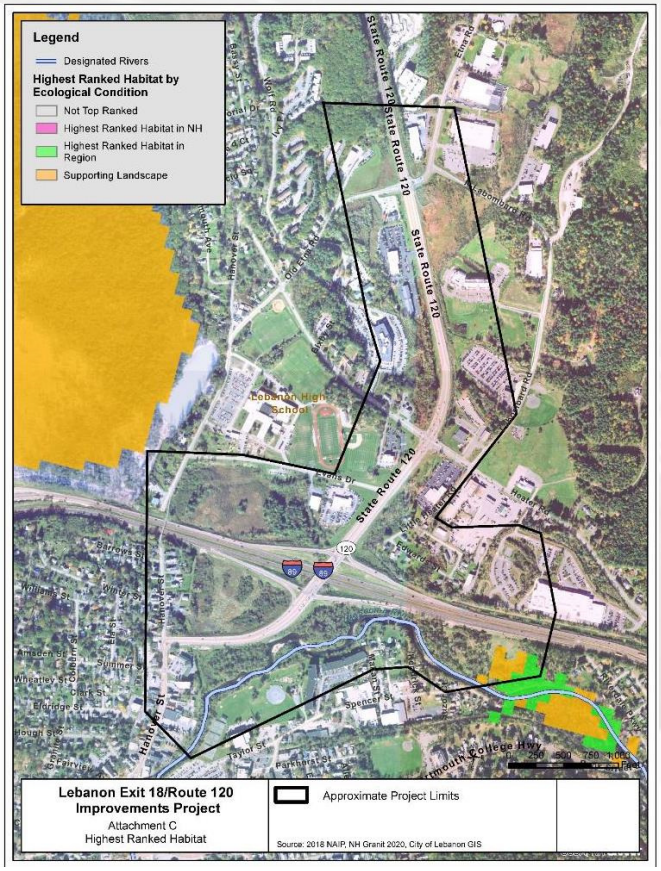
Project Status – Data Collection

- Initial Desktop Screening:
  - Wetland areas
  - Habitats
  - Floodplains
  - Conservation lands
  - Threatened and endangered species



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Project Status – Agency Coordination

- NH Natural Heritage Bureau DataCheck
  - Two state-listed plant species
    - Crested sedge (NH E)
    - Appalachian barren-strawberry (NH T)
  - One vertebrate species
    - Wood turtle (special concern)
- USFWS IPaC resource list
  - Identified ESA Species
    - Northern Long-eared Bat
    - No critical habitat
  - Migratory Birds
    - Bald Eagle
    - Bobolink
    - Prairie Warbler
- Attended NHDOT Natural Resources Agency Meeting April 2021

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Project Status – NEPA

- Field Evaluation
  - Stream Crossing Assessments
  - Wetland Delineations
  - Invasive Species Mapping
  - Corridor Impacts & Assessments

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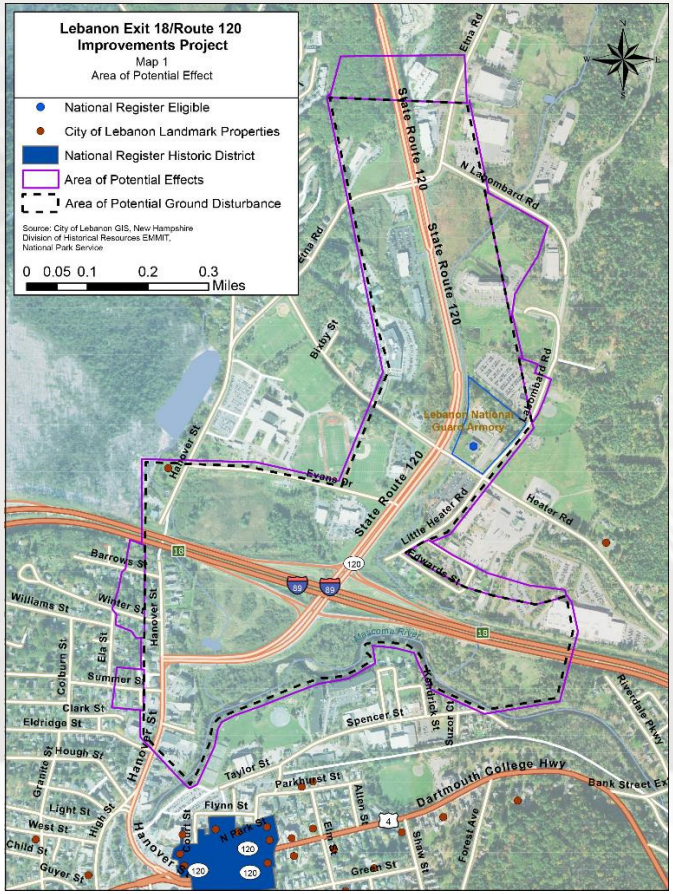
Project Status – NEPA

- Evaluate impacts / effects through:
  - Continued Agency coordination
  - National Environmental Policy Act (NEPA) compliance
  - Section 4(f) (e.g. parks, historic properties)
  - Section 6(f) (e.g. national parks, forests, wildlife refuges, recreation areas)
  - Supporting studies



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Project Status – NEPA
Cultural Resources & Section 106

- Submitted Request for Project Review Form to NH Division of Historical Resources (NHDHR)
- Undertook site walk with NHDHR April 2021
- Initiating Section 106 consultation (Lebanon Historical Society)
- District Area Form Req'd for Hanover Street (South of I-89). Study scheduled wk/o 9/20
- Phase 1A Archeological Survey found 10 archeologically sensitive areas, if impacted Phase 1B study required

For more information on how you can become a consulting party contact:

Jamie Sikora
Environmental Program Manager
Federal Highway Administration
NH Division Office
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Concord, NH 03301
Jamie.Sikora@fhwa.dot.gov

SECTION 106 CONSULTING PARTY PROCESS IN NEW HAMPSHIRE

In the National Historic Preservation Act (NHPA), Congress established a comprehensive program to preserve the historical and cultural foundations of the Nation as a living part of community life. Section 106 of NHPA is crucial to that program, because it requires consideration of historic preservation in the multitude of Federal actions that take place nationwide and throughout New Hampshire.

Section 106 requires Federal agencies to consider the effects of their actions on historic properties and provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on Federal projects prior to implementation.

U.S. Department of Transportation Federal Highway Administration

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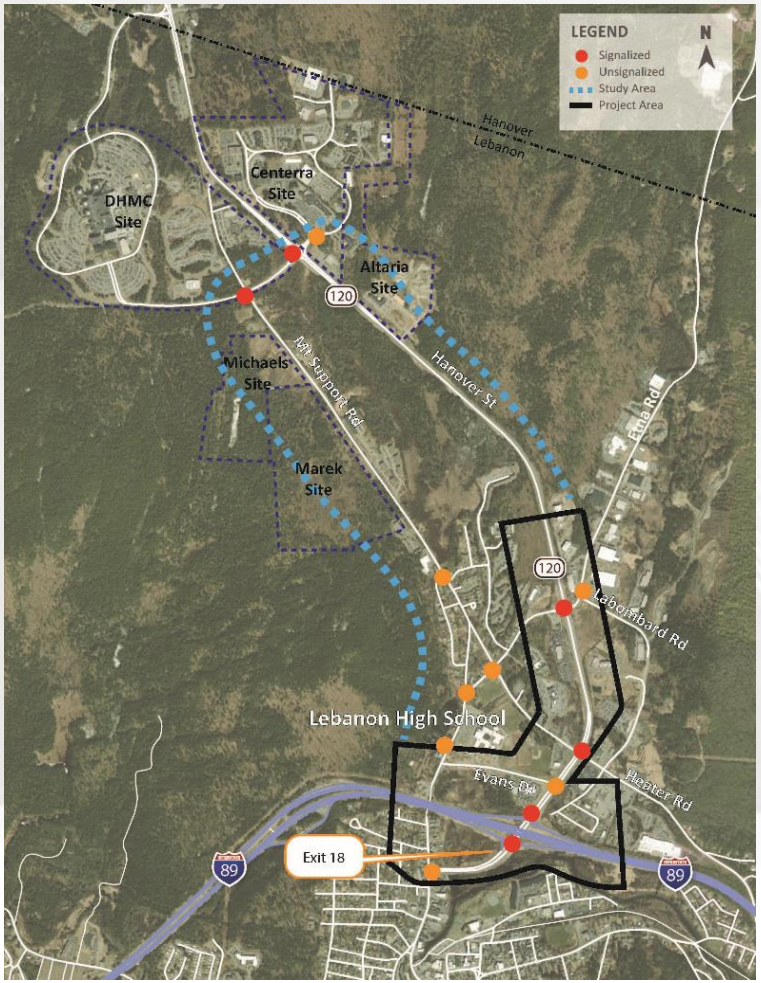
Project Status – Traffic Analysis

- Key Network Intersections
  - Hanover St / NH 120
  - I-89 Exit 18 interchange
  - Evans Dr / NH 120
  - Heater Rd / NH 120
  - Etna Rd / NH 120
  - Mt Support Rd / Lahaye Dr
  - Lahaye Dr / NH 120



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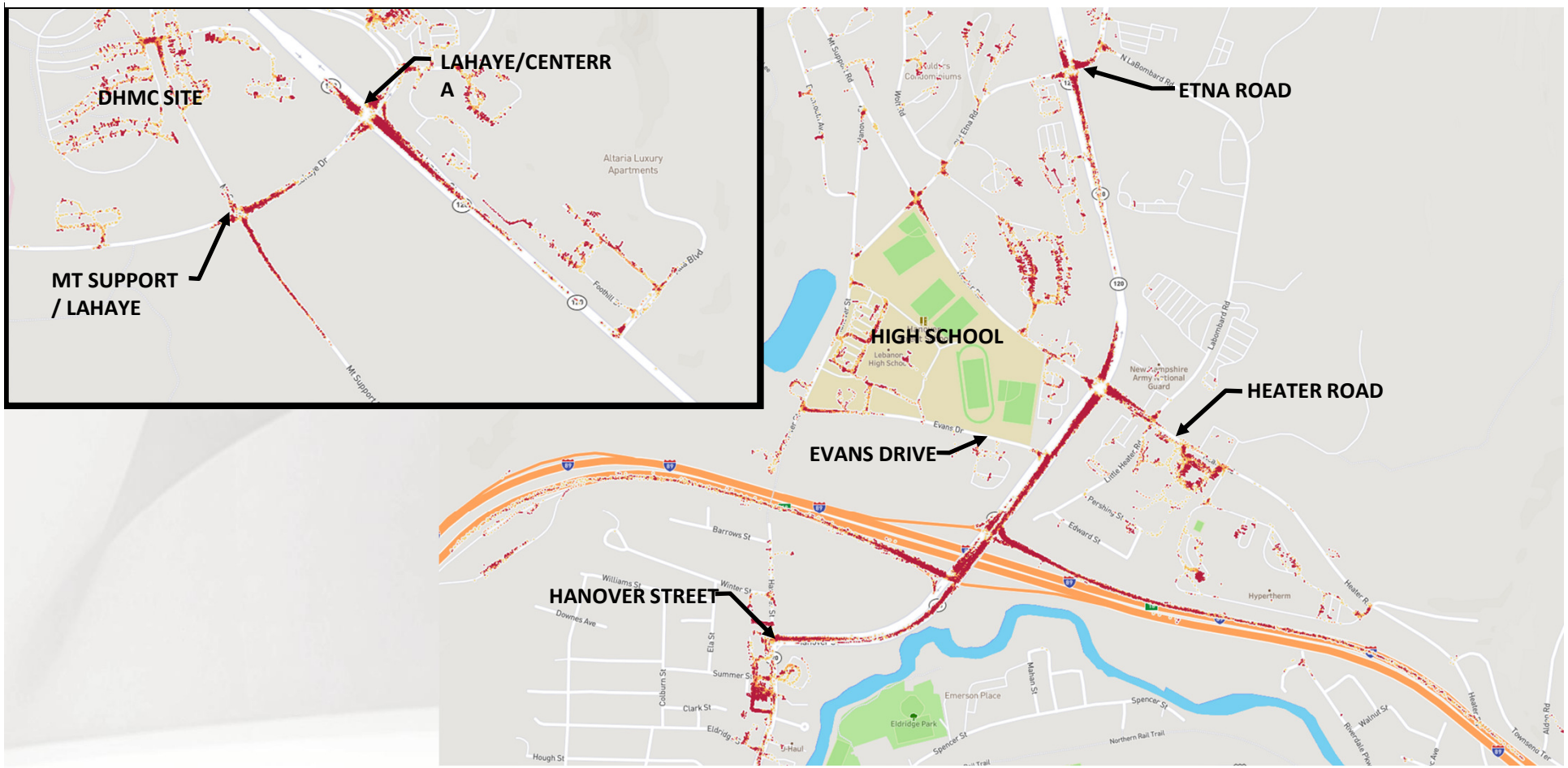
High-Level Corridor Observations



Project Status – Public Outreach

- Public Outreach & Stakeholder Input Critical to Project's Success & Determination of Need
  - Project Advisory Committee Established
  - Use of Virtual Public Involvement Tools (Interactive Website Maps & Surveys)
  - Refinement of Alternatives
  - Advocate & Build Support for Project

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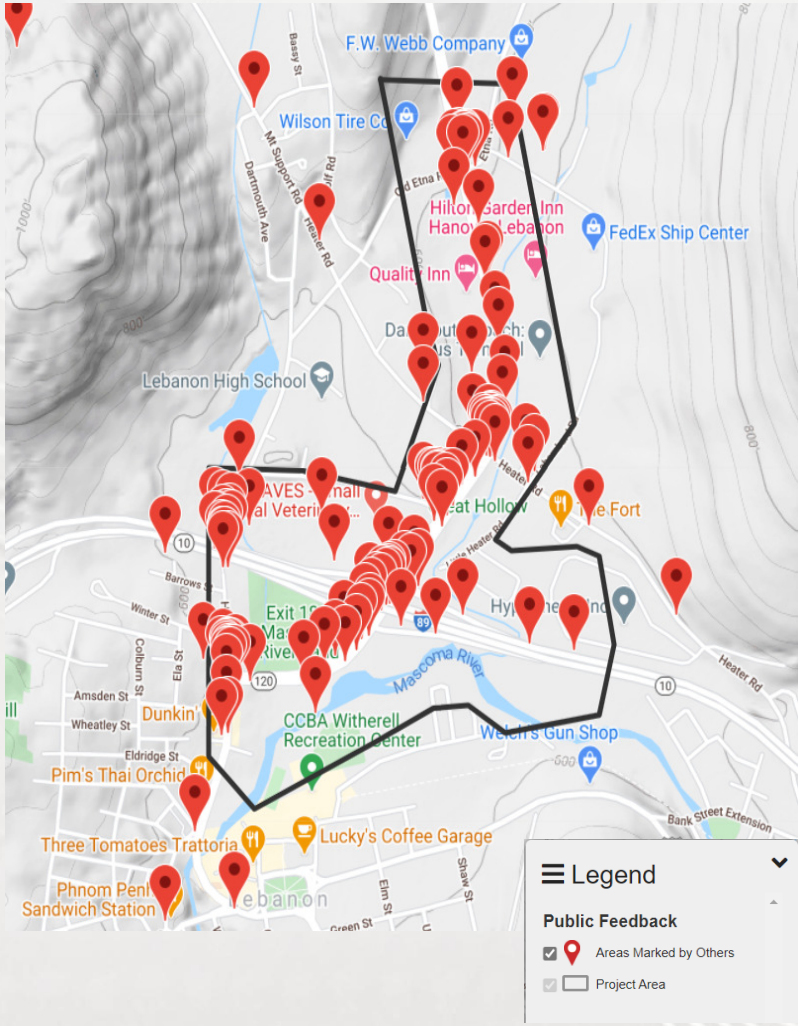
Project Status – Public Outreach

- Major Points of Emphasis to Date
  - Substandard multimodal facilities & disconnected nodes
  - Traffic Speeds & Safety
  - Operational deficiencies at Interchange, Heater & Etna Road Intersections
  - Preservation of environmental resources
  - Future Year Forecasting
  - Unknown long term pattern shifts and pandemic implications



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Purpose & Need Statement Development

Purpose & Need Development

Purpose: The purpose of the project is to improve the operations, mobility, and safety of the I-89 Exit 18 interchange and NH Route 120 corridor for all travel modes, including bicyclists, pedestrians, transit users, and vehicle operators.

Need:

- There are existing vehicular operational deficiencies at the I-89 Exit 18 interchange and along the NH Route 120 corridor that lead to long delays, queuing, and safety issues.
- Operational deficiencies include consistent congestion during the AM and PM weekday peak hours. Safety issues include queuing on the interchange off-ramps that extend onto the shoulder of the I-89 mainline roadway.
- There are limited and disconnected pedestrian, bicycle, and transit facilities both along and across the NH Route 120 corridor that can lead to safety issues such as conflicts between bicyclists, pedestrians and vehicles and crossings at unmarked locations. Limited multimodal facilities can also result in more users choosing to drive, adding to vehicular congestion.

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Purpose & Need Development

- Other Goals and Objectives
  - Improve transit access and operations
  - Enhance access to non-motorized transportation networks
  - Improve corridor accessibility for public schools on Hanover Street for all travel modes
  - Minimize project impacts on neighborhood cohesion, natural and cultural environmental resources
  - Build a transportation infrastructure that supports future economic growth and land use / development needs of community

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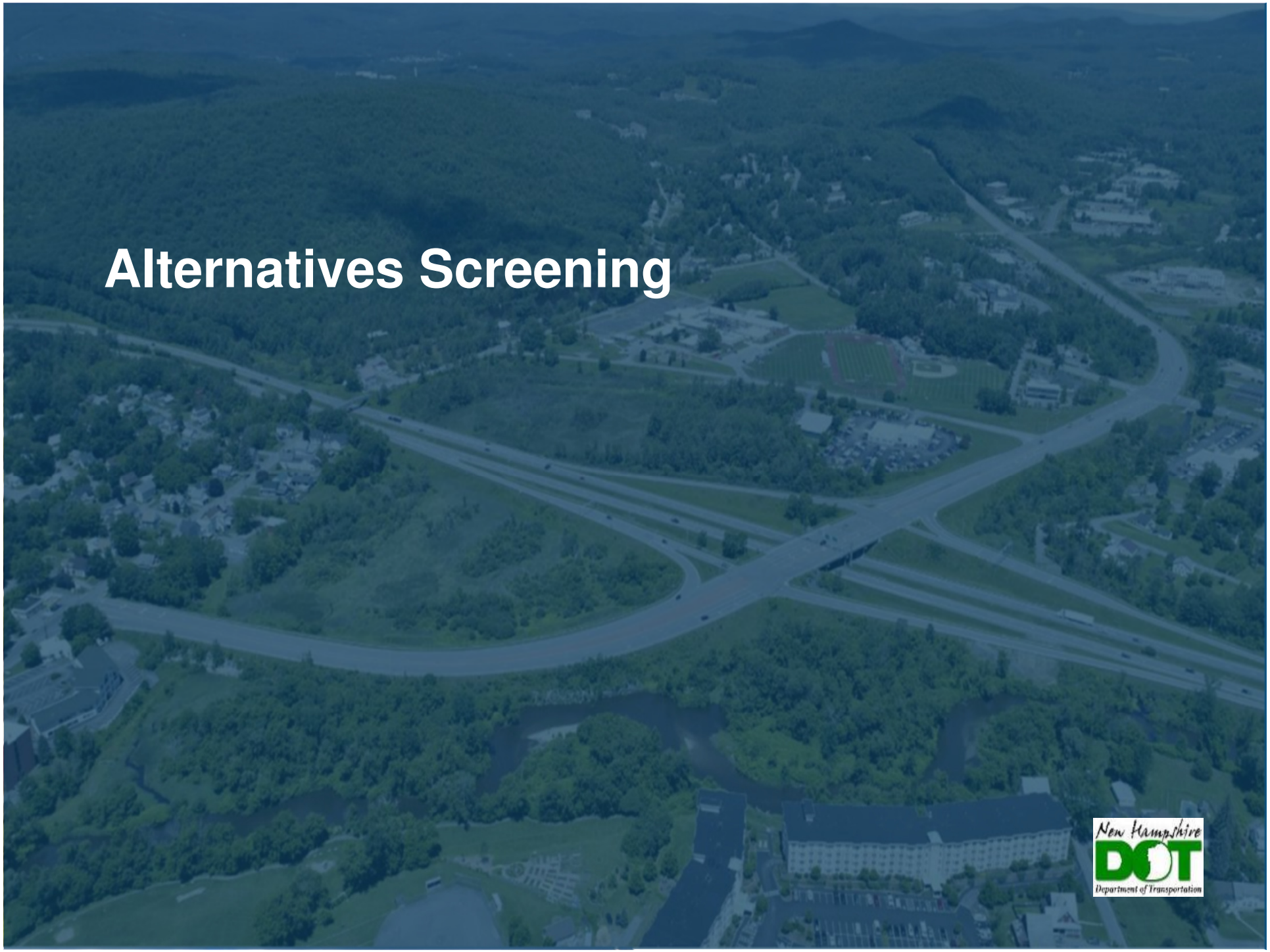
Alternatives Screening



Alternatives Screening Levels

Level 1 Screening

Utilize available data from existing traffic analysis and data gathering efforts to provide high level qualitative and quantitative review to identify fatal flaws, general performance characteristics, and environmental impacts. Eliminate infeasible alternatives or alternatives that do not meet Purpose and Need. Identify alternatives to best achieve the project goals for consideration.

Evaluate feasibility of up to ten (10) potential ideas and consolidate for Level 2 Screening by:

- Evaluating existing base traffic model and understanding of the traffic patterns
- Evaluating past NHDOT studies, RPC and NH Route 120 Working Group Charrette recommendations comparing with Project Purpose and Need
- Consolidating stakeholder input
- Order of magnitude cost comparisons
- Collaborating with Department staff

Level 2 Screening

Consider environmental impacts and construction challenges. Eliminate / classify alternatives that do not perform well and are not recommended. **Identify up to two (2) efficient, effective, and contextually-appropriate build alternatives.** Define No-Action or No-Build Alternative and carry through as third alternative.

Level 3 Screening

Develop Conceptual Designs for two (2) build alternatives. Provide illustrative designs for roadways and major structures to allow for evaluation of resource impacts and permitting needs, and satisfactorily demonstrate the pertinent design criteria.

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Level 1 & Initial Screening Categories

LEBANON 29612 - NH 120 AND I-89 EXIT 18

INITIAL ALTERNATIVES (LEVEL 1) SCREENING MATRIX

Option / Alternative	Source	Mobility and Safety				Local Economy / Development	Environmental		Right-of-Way (ROW) / Costs		Purpose & Need	Advance to Level 2 Screening	Comments
		Traffic Congestion & Delay	Bicycle Mobility	Pedestrian Mobility	Transit Access / Operations		Natural Resources / Wetlands	Cultural Resources (Historic)	Property / ROW	Cost			
No Build	Current study requirement	🔴	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🟢	🔴	Yes	
NH NH 120 Corridor Wide Option / Alternative													
Install countdown timers at all at-grade ped/bike crossings (signals)	2017 NH 120 Study #19	🔴	🟢	🟢	🔴	🟢	🟢	🟢	🟢	🟢	🟡	Yes	Interim level of improvement; by itself, it will not meet the P&N; Any new signal system will include countdowns
Construct separated multi-use ped/bike path on east side of NH 120	2017 NH 120 Study #27	🔴	🟢	🟢	🟡	🟢	🔴	🟡	🟡	🟡	🟡	Yes	Bike/Ped trail by itself will not meet the P&N, advancement is based upon combining with roadway capacity enhancements.
Evaluate six-lane NH 120 section from Exit 18 through Lahaye Rd	2017 NH 120 Study #31	🟢	🟡	🟡	🟢	🟢	🔴	🟡	🟡	🟡	🟢	Yes	Will address corridor capacity needs and improve corridor delay for transit; can be combined with other ped/bike connectivity alternatives; Will likely not be compatable with high capacity, two lane roundabouts.
Establish a bike share program to serve NH 120 corridor	2017 NH 120 Study #28	🔴	🟢	🔴	🔴	🟢	🟢	🟢	🟢	🟢	🟡	Yes	Bike share program by itself will not meet the P&N, advancement is based upon combining with roadway capacity enhancements.
Add sidewalk from Hanover St to DHMC	Interactive map	🔴	🔴	🟢	🟡	🟢	🔴	🟡	🟡	🟡	🟡	Yes	Yes to sidewalks along NH 120 within project study limits. Sidewalk outside project limits may need to be sought via other means such as local investment and TAP program.
NH 120 / Hanover St Option / Alternative													
Reconnect Hanover St across I-89 for full vehicular traffic	2017 NH 120 Study #1	🟢	🔴	🔴	🟢	🟢	🔴	🔴	🔴	🔴	🟡	Yes	Worthy of study to determine if traffic redistribution will result in reduced lane needs along NH 120 to justify the cost and environmental impacts.
Reconnect Hanover St across I-89 for bus traffic only	2017 NH 120 Study #2	🟡	🔴	🔴	🟢	🟢	🔴	🔴	🔴	🔴	🔴	No	Limiting access for transit use only will likley redcue corridor delay and improve school bus accessibility but will not likely reduce lane needs along NH 120 to justify the cost and environmental impacts.
Consider roundabout	Interactive map	🟢	🔴	🔴	🟡	🟢	🔴	🔴	🟡	🟡	🟢	Yes	A single lane roundabout with right turn slip lane appears to be viable for 2044 design year flows
Consider no-stop SB thru movement from NH 120 to Hanover	Interactive map	🟢	🔴	🔴	🟡	🟢	🔴	🔴	🔴	🔴	🟡	Yes	Alternative endorsed by the City Engineering Department and included in City corridor study for Hanover Street.
NH 120 / Exit 18 Interchange Option / Alternative													
Construct diverging diamond at I-89 Exit 18 interchange	2017 NH 120 Study #6	🟢	🔴	🔴	🟡	🟢	🔴	🟡	🟡	🔴	🟢	Yes	Innovative solution to handle high left turn and thru volumes within potential footprint of the existing bridge
Extend/widen I-89 Exit 18 northbound off-ramp/deceleration lane	2017 NH 120 Study #7	🟢	🔴	🔴	🟡	🟢	🔴	🟡	🟡	🔴	🟢	Yes	Not the solution but potentially part of the solution
Investigate feasibility of utilizing former I-89 SB rest area to accommodate SB queuing	2017 NH 120 Study #9	🟢	🔴	🔴	🟡	🟢	🟢	🟡	🟡	🔴	🟡	Yes	Similar to frontage road off-ramp; accommodates longer storage without interference with SB I-89 traffic flows
Build a SPDI	Interactive map	🟢	🔴	🔴	🟡	🟢	🔴	🟡	🟡	🔴	🟢	Yes	Innovative solution to handle high left turn and thru volumes, will not be accommodated within footprint of existing bridge
Widen I-89 to 3 lanes NB/SB between Exits 17-19	Interactive map	🟡	🔴	🔴	🟡	🟢	🔴	🔴	🟡	🔴	🔴	No	Will not address congestoin on NH 120. Might improve safety on I-89.
NH 120 / Evans Dr Option / Alternative													
Make Evans Dr right-in/right-out only from NH 120 SB	2017 NH 120 Study #36	🟢	🔴	🔴	🔴	🟢	🟢	🟢	🟢	🟢	🟢	Yes	Will need to be used in combination with other corridor improvements
Add 3rd SB lane on NH 120 from Evans to interchange	Interactive map	🟢	🔴	🔴	🟡	🟢	🔴	🟢	🟡	🔴	🟢	Yes	Will need to be used in combination with other corridor improvements;
NH 120 / Heater Rd Option / Alternative													

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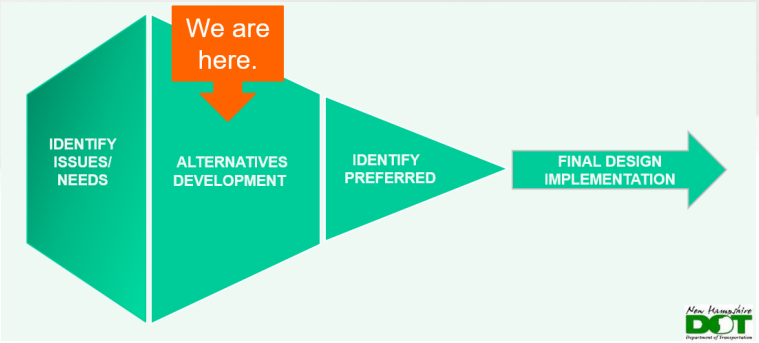
Level 2 Screening

- Refine Level 2 Screening Matrix
- Perform Sensitivity Analysis of Future Traffic Forecasts
- Identify Feasible Intersection Alternatives for Level 2 Review
- Consolidate Level 1 & Level 2 Survivors
- PAC Meeting No.4 (Fall ‘21)



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Next Steps

Project Development Process

- ✓ Collect data and identify issues
- ✓ Confirm goals / establish vision
- Develop corridor concepts
- Evaluate alternatives
- Select preferred alternative
- Develop preliminary design
- Conduct Public Hearing
- Advance into final design
- Implement based on available funding

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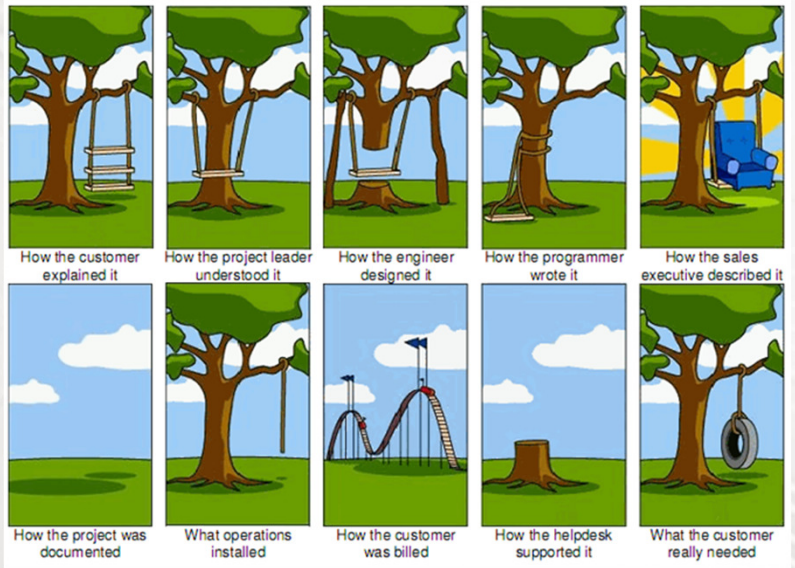
Project Development Process
What We Face

- Traditional Challenges
  - Conflicting Interests
  - Funding
  - Scope Creep
  - Land Use Planning Changes & New Developments
- New Challenges
  - Pandemic Traffic Pattern Shifts
  - Short term vs. long term trends & perceptions
  - Travel Demand Management Strategies



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Project Development Process - How it started

- Route 120 Corridor Workgroup
  - Active approximately 2013 - 2017
  - Developed list of potential improvements
- NH 120 Project Introduced for 2015-2024 Ten Year Plan
  - Total Cost: $2,688,000
  - Scope of Work:
    - Construct Diverging Diamond at I-89 Exit 18
    - Add NB left turn lane at NH Route 120/Old Etna Road
    - Reconfigure Existing Lanes to provide Third NB Thru Lane through Heater Road Intersection
    - Construction Year Funding 2020
  - **Currently Construction in 2024**

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Project Development Process – Utilize our Resources

- Upper Valley Lake Sunapee Regional Planning Commission (UVLSRPC), City of Lebanon, & Town of Hanover
  - Unified vision for Bicycle & Pedestrian Networks for NH 120, Mount Support Road & adjacent roadways
  - UVLSRPC NH Route 120 North Corridor Plan
- Upper Valley Transportation Management Association (UVTMA)
  - Travel Demand Management Opportunities & Vision

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Project Development Process – Utilize our Resources

- **UVLSRPC NH Route 120 North Corridor Draft Plan .**
  - Tier 1 Projects
    - I-89 Exit 18/NH 120 - Traffic capacity/congestion and multi-modal improvements at Exit 18 between Hanover St and Etna Rd. (TYP 29612)
    - Lahaye Drive/NH 120 - Pedestrian and bicycle improvements along Lahaye Drive between Mt. Support Rd and Centerra Parkway, incl. pedestrian crossing improvements at NH 120. (TA)
    - City of Lebanon - Road reconstruction; complete street/safety improvements including reconfiguration NH 120/Hanover St intersection and roundabout at Hanover St/High St/Hough St intersection.
  - Tier 2 Projects
    - Address Pedestrian & Bicycle Gaps on NH 120 (Lebanon, Hanover, NH 120)
    - Mount Support Road Pedestrian & Bicycle Improvements (City of Lebanon)
    - NH Route 120/Etna Road/Old Etna Road Sidewalks (City of Lebanon)
    - Lombard Road Sidewalks connect Heater & Lombombard Road to Dartmouth Coach

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Project Development Process – Utilize our Resources

- UVLSRPC NH Route 120 North Corridor Draft Plan
  - Tier 3 Projects
    - NH 120/Evans – Improve intersection safety at Evans & NH 120 (TYP 29612)
    - NH 120/Etna Road - Improve intersection congestion (TYP 29612)
    - NH 120/Heater Road – Improve pedestrian crossing actors NH 120 (TYP 29612)
    - City of Lebanon - Road reconstruction; complete street/safety improvements including reconfiguration NH 120/Hanover St intersection and roundabout at Hanover St/High St/Hough St intersection.
    - NH 120 Wildlife Crossings North of Etna Road (2 culvert upgrades)
  - Tier 4 Projects
    - Heater Road Interchange
    - NH 120 Speed Zones
    - Reconnect Hanover Street w/ Vehicular Bridge
    - Add lanes to NH 120 (TYP 29612)

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NHDOT Contact Information

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Questions?