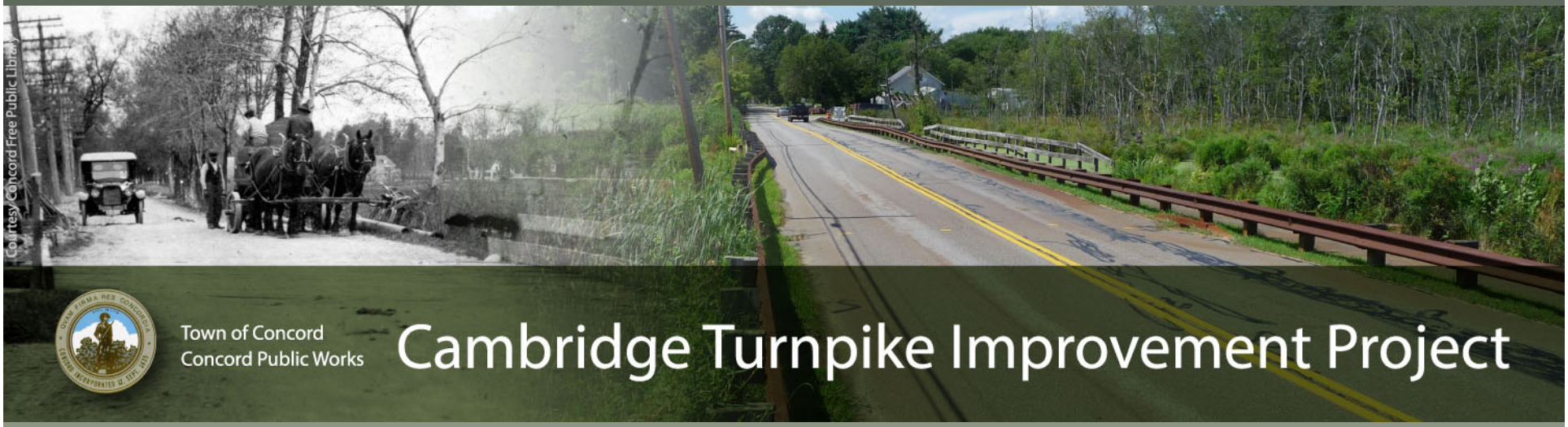
PUBLIC WORKS COMMISSION

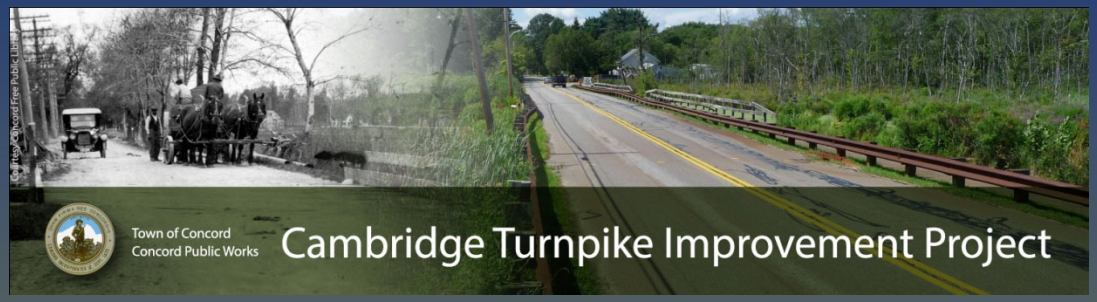
DECEMBER 11, 2019



Town of Concord
Concord Public Works

Cambridge Turnpike Improvement Project

PROJECT UPDATE MEETING



INTRODUCTIONS

Town of Concord Public Works:

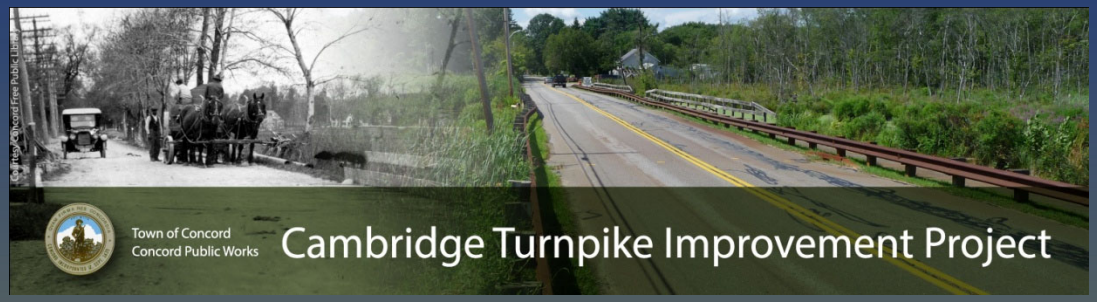
Alan H. Cathcart, Interim Director, Public Works

Stephen Dookran, P.E. – Town Engineer

Stephane Cherduville, EIT – Public Works Engineer

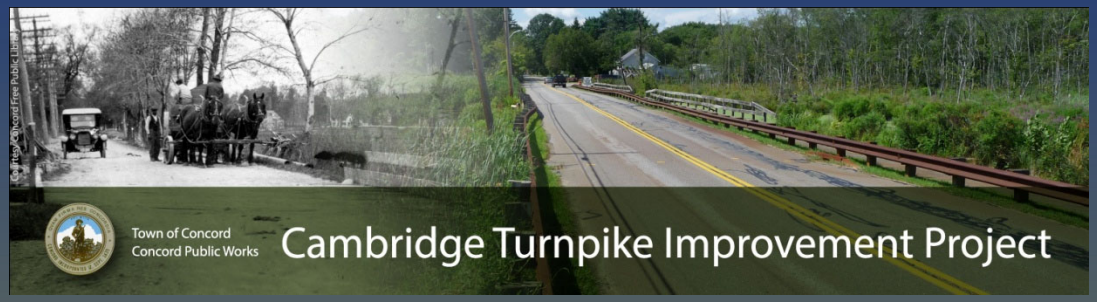
CMA Engineers , Inc :

Bill Straub, P.E. – Principal/Project Manager



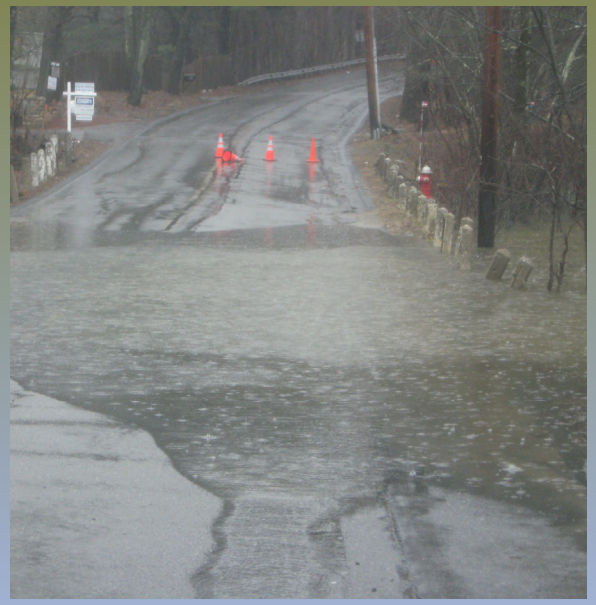
Topics this evening

- Project Objectives
- Project Phasing
- Status of Construction
- Construction Impacts & Traffic Management
- Project Budget & Funding Sources
- Critical Schedule Issues
- Current Upcoming Schedule

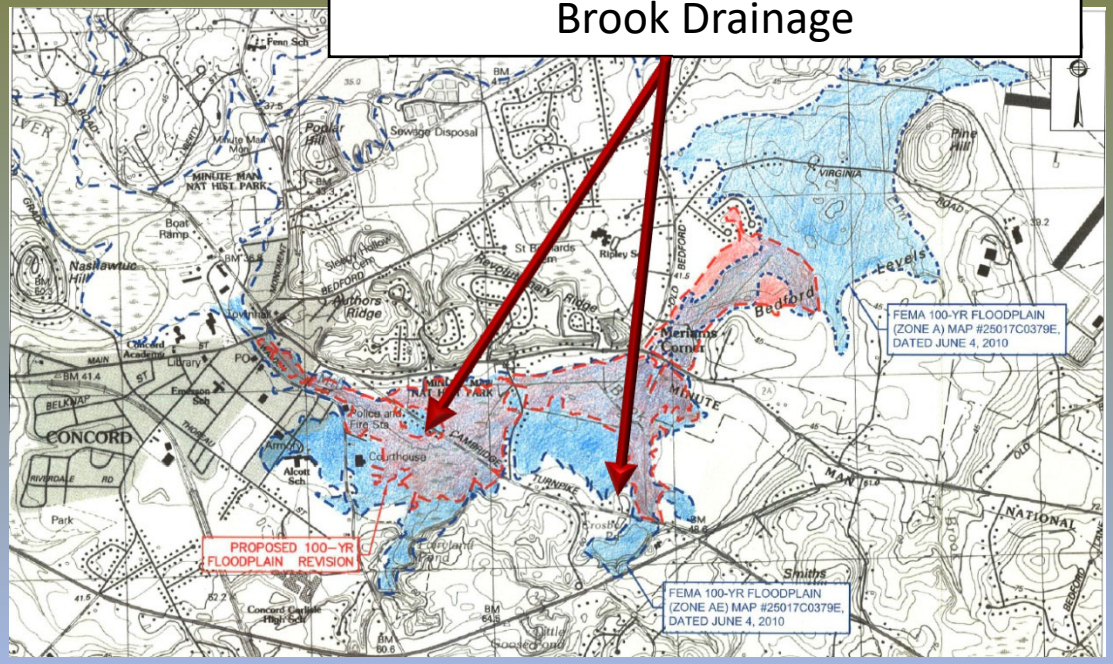


- # Flooding is central issue

FEMA modified 100-yr Flood Levels in 2015
Raise roadway profile
Increase waterway openings

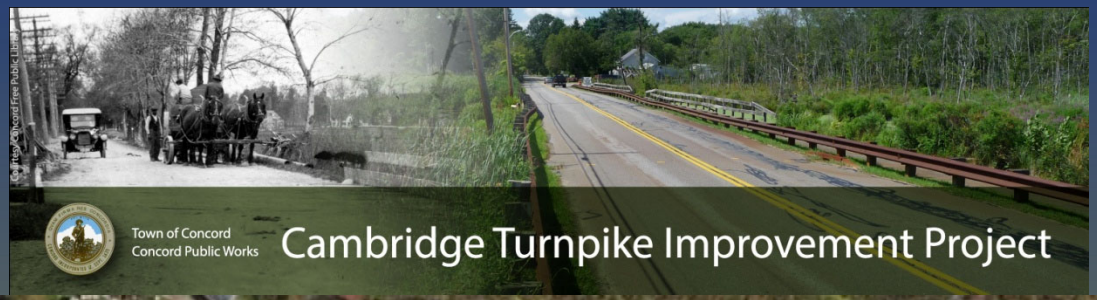


Cambridge Turnpike crosses Mill Brook Drainage



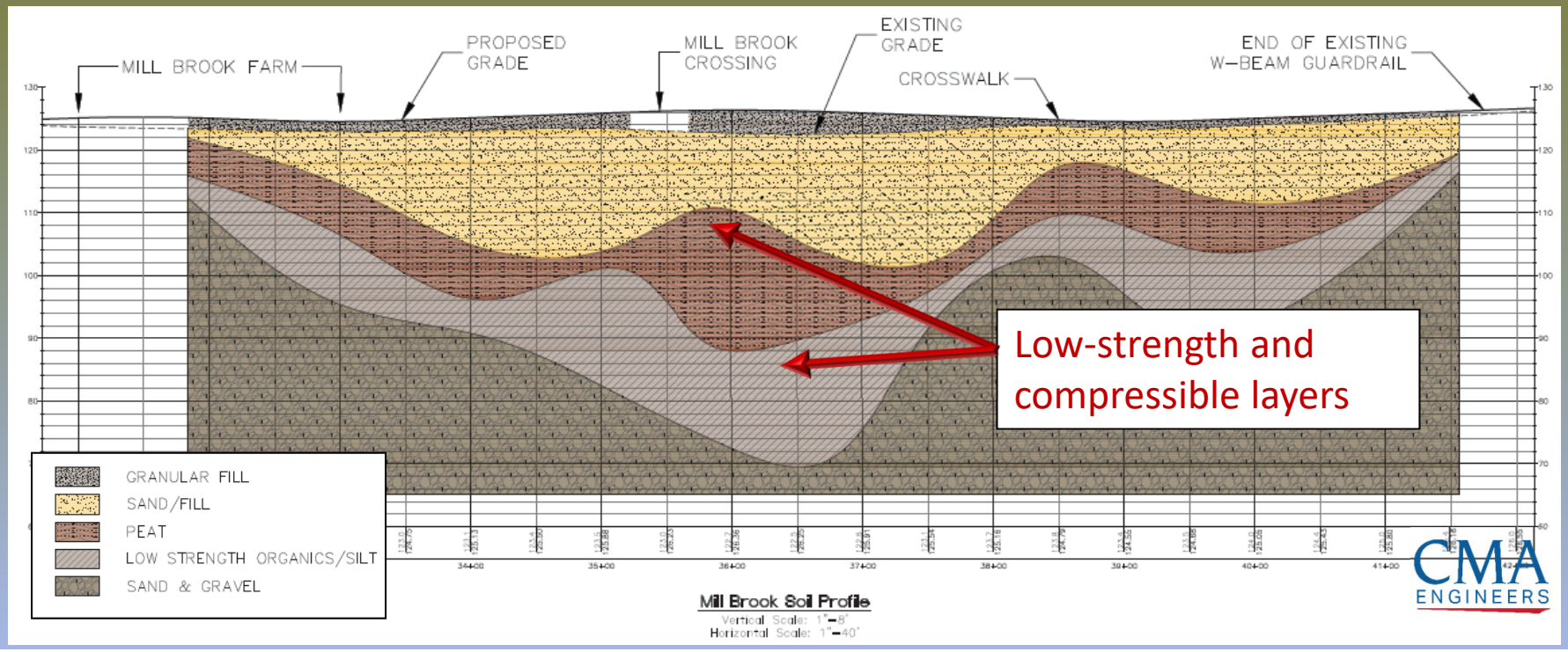
Cambridge Turnpike Corridor

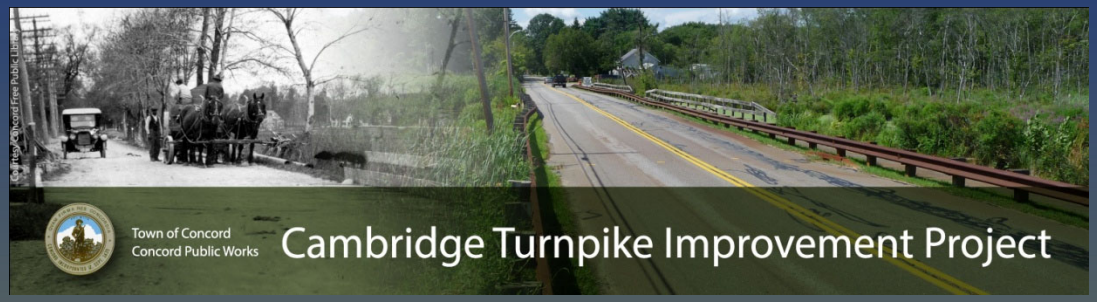
6,600 feet from Lexington Road to Crosby Corner (Routes 2 and 2A)



Marsh Crossings and Bridges

Geotechnical challenges





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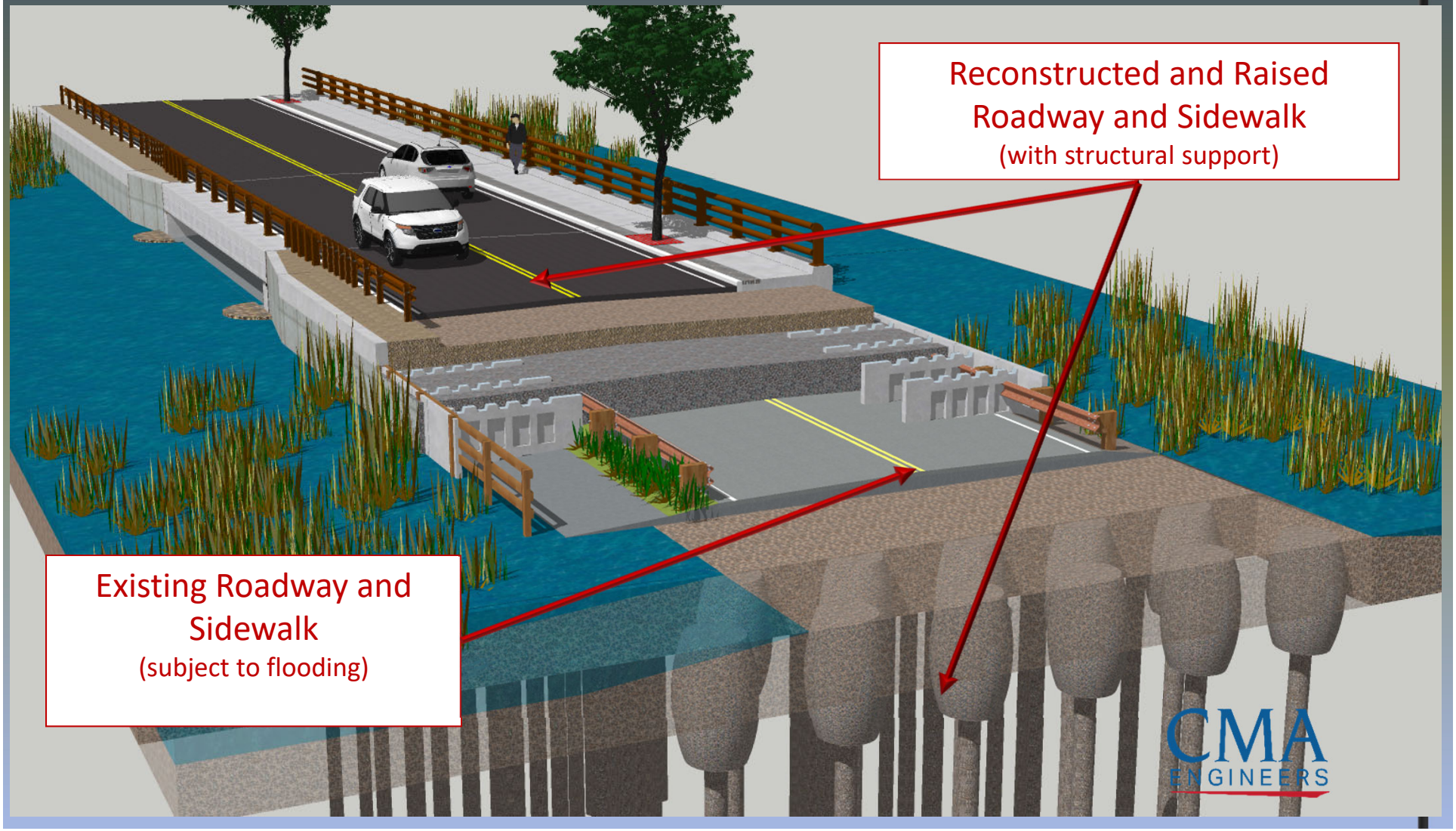
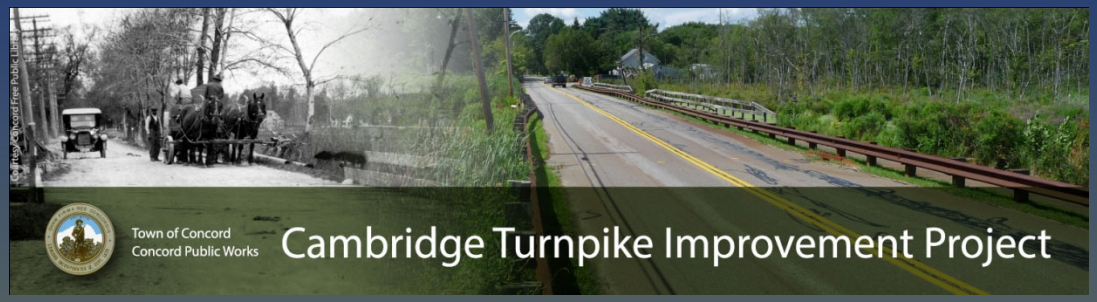
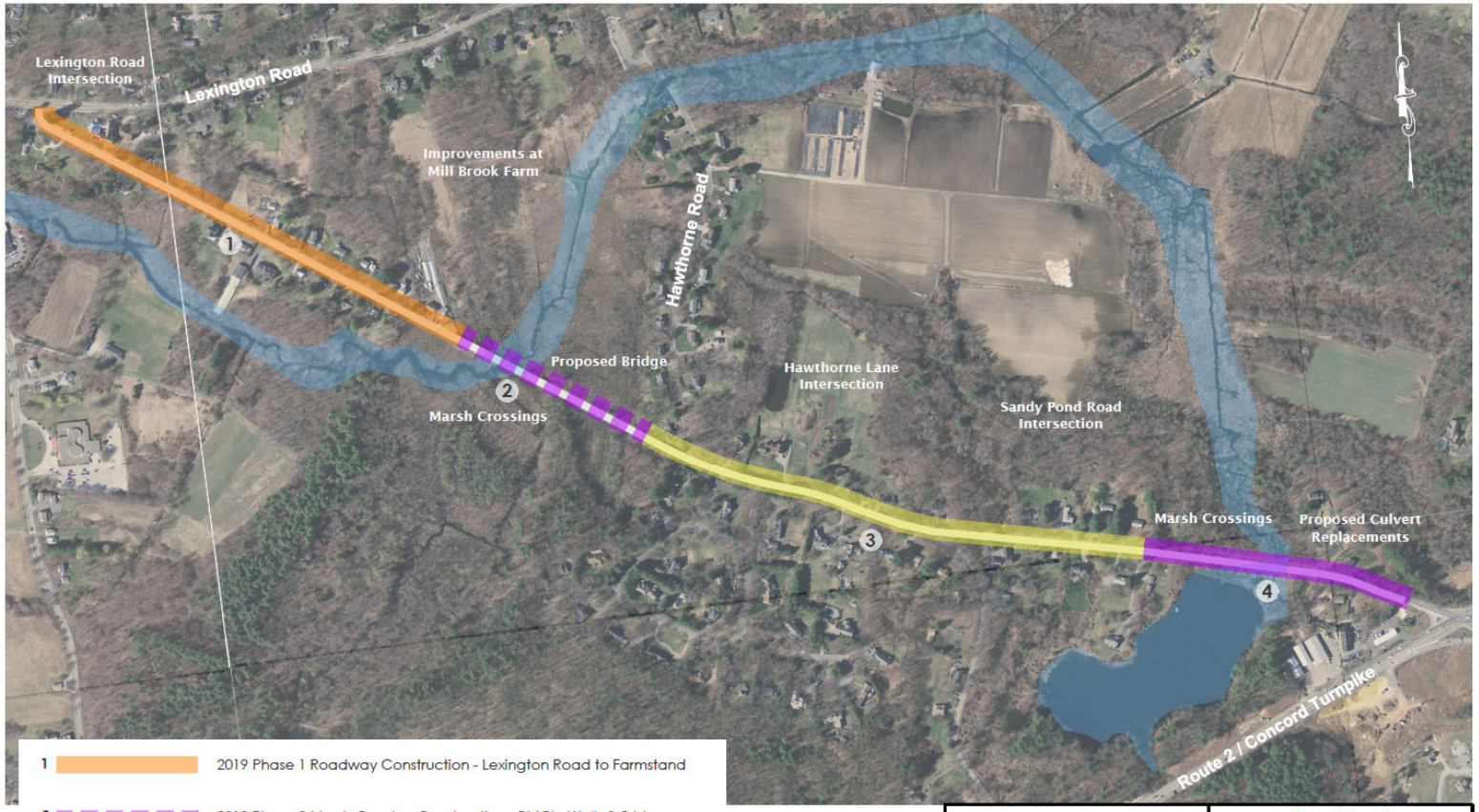
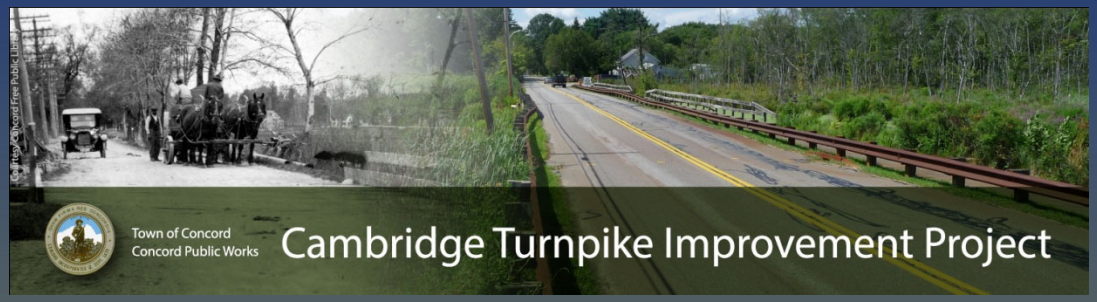




Project Phasing

Project Phasing Presented at April 2019 Public Preconstruction Meeting

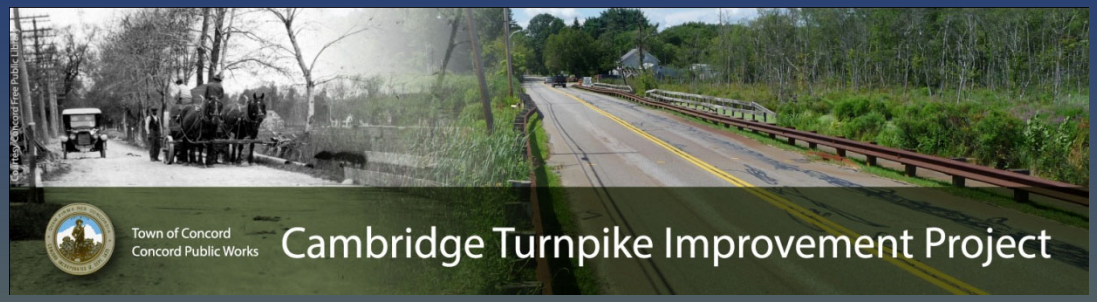




Project Phasing

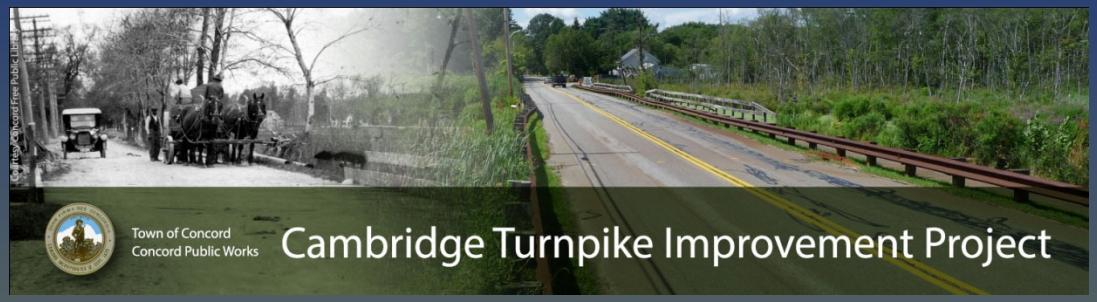
Construction in two Phases

- Phase I (Areas 1 & 3): conventional roadway, drainage and utility construction
- Phase II (Areas 2 & 4): deep ground improvements, structures, roadway



Rationale for Phasing

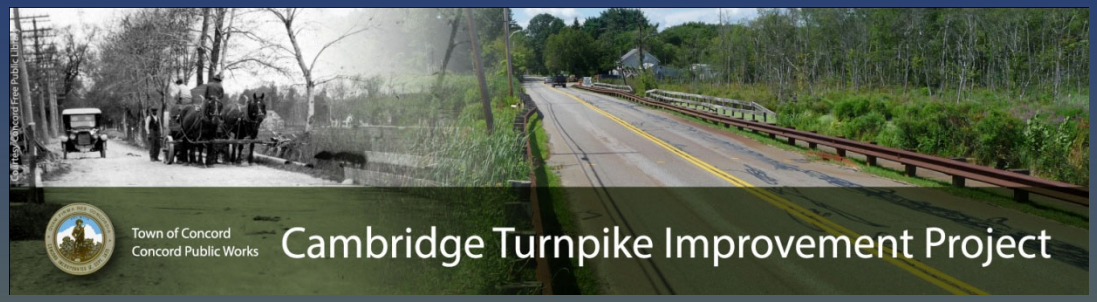
- Expediting the start of construction
- Budget Constraints
- Environmental permitting/potential time of year work restrictions
- Maintain two access/egress
- Utility & Stakeholder coordination
  - National Grid & Verizon work timeframes
  - Concord Museum Renovations
  - Minimize impacts to Farm Stand
- Lower bids for grouping similar construction types



Construction Status

Phase I: J. Tropeano, Inc.

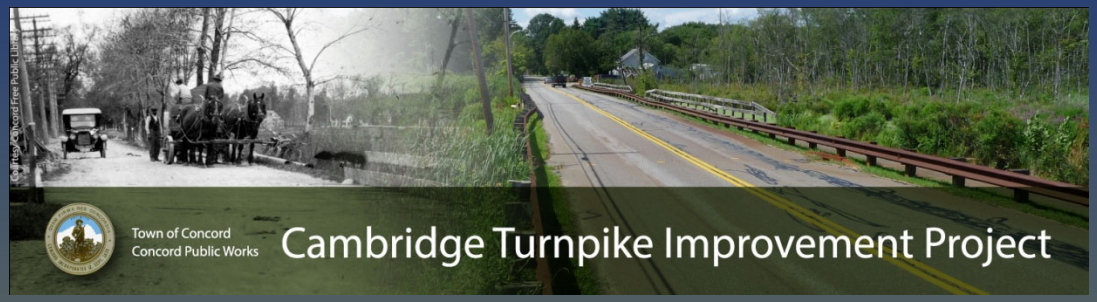
- Bid June 2018; commenced work September 2018
- Original Scheduled Completion: December 2019
- Current Status
  - Work Area 1 Completed: water main, underground conduit, drainage, binder pavement, curbing, stone walls & partial sidewalk
  - Work Area 3 Completed: water main, underground conduit, binder pavement & stone walls
  - Work Area 1 Remaining: relocate overhead utilities, complete sidewalks, brick crossings, final paving & landscaping
  - Work Area 3 Remaining: complete drainage, curbing, sidewalks, final paving & landscaping



Construction Status

Phase I: J. Tropeano, Inc.

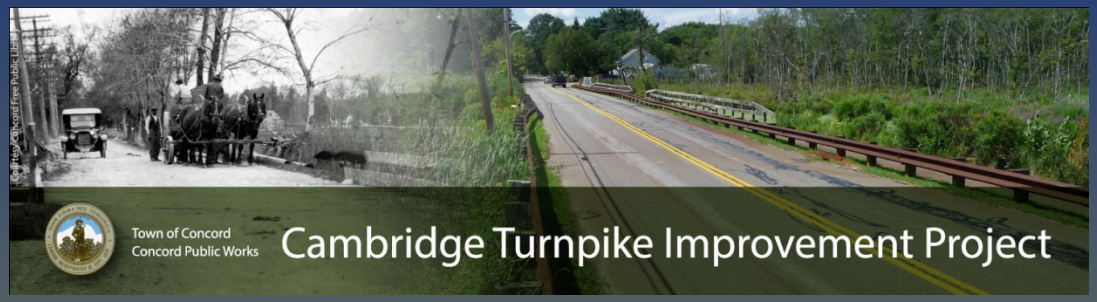
- Current Scheduled Completion: Spring 2020
- Phase I Delays: National Grid & Overhead Utilities
  - NG Employee lockout June 2018 – December 2018
  - Delays with gas main construction: two distribution mains and the high-pressure transmission main
  - Relocation of overhead utilities to underground



Construction Status

Phase II: George Cairns & Sons, Inc.

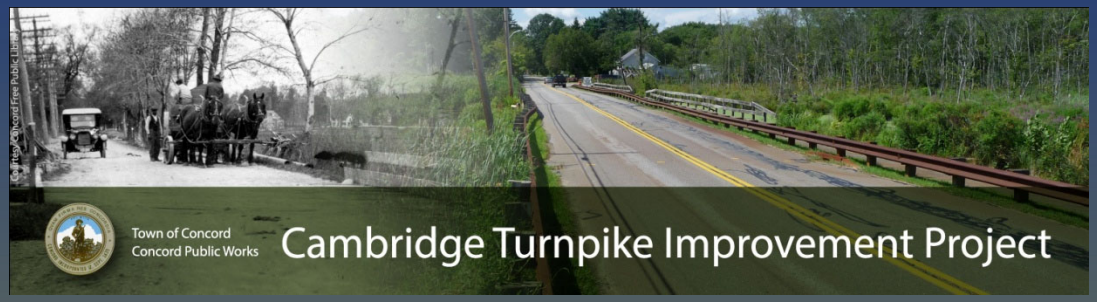
- Original Scheduled to commence in December 2018, complete Phase II work in 2019
- Bid authorization November 2018; commenced work March 2019 after bid dispute
- Two season construction schedule presented in February 2019, w/ bridge open in October 2019, & Crosby Culverts done April 2020 – August 2020



Construction Status

Phase II: George Cairns & Sons, Inc.

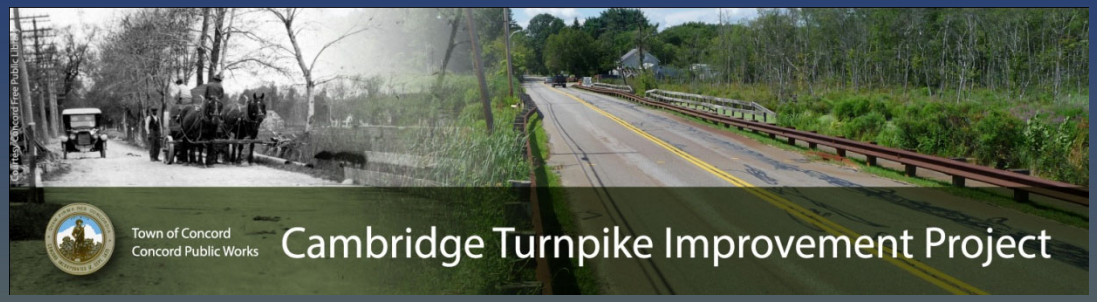
- Current Status of Phase II Work
  - Work Area 2 Completed: partial water main, bridge, retaining walls, utility conduits, drainage, roadway construction, binder pavement



Construction Status

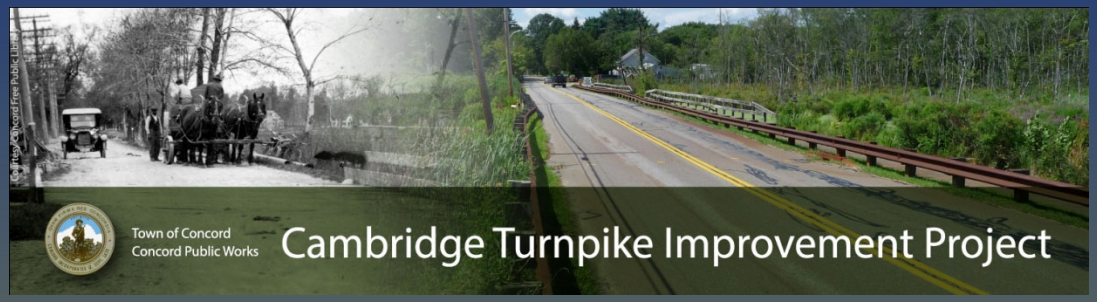
Phase II: George Cairns & Sons, Inc.

- Current Scheduled Completion
  - Bridge open May 2020
  - Work area 4 (Crosby) August 2020
- Phase II Delays
  - Delayed start of Deep Ground Improvements (impacted by Verizon)
  - Delayed start and slow initial progress of bridge construction



Critical Schedule Issues

- Overhead utility relocations in Work Area 1
- National Grid transmission main tie over
- Interim utility poles in Work Area 4
- Evaluating options to advance Phase II work in the winter


Town of Concord
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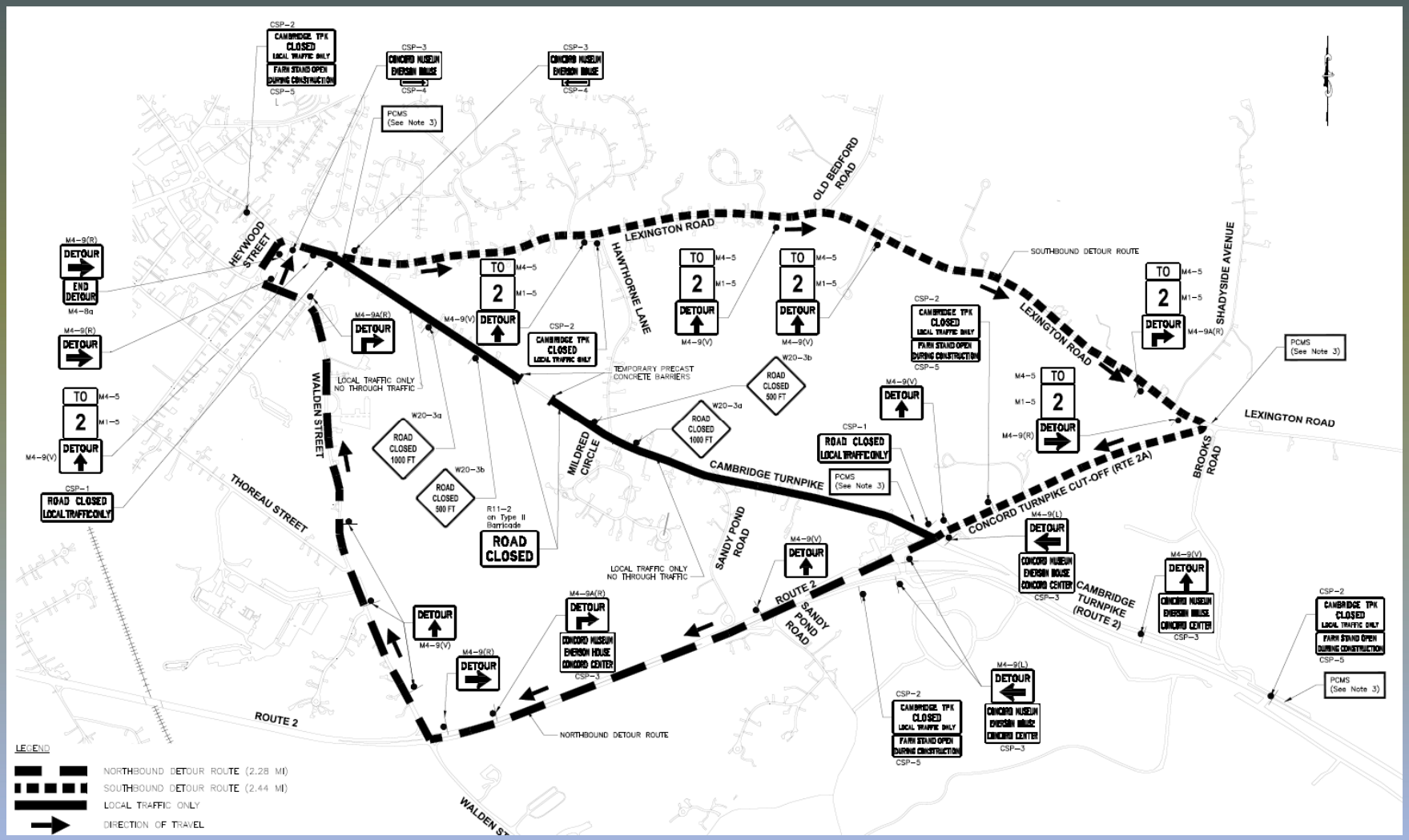
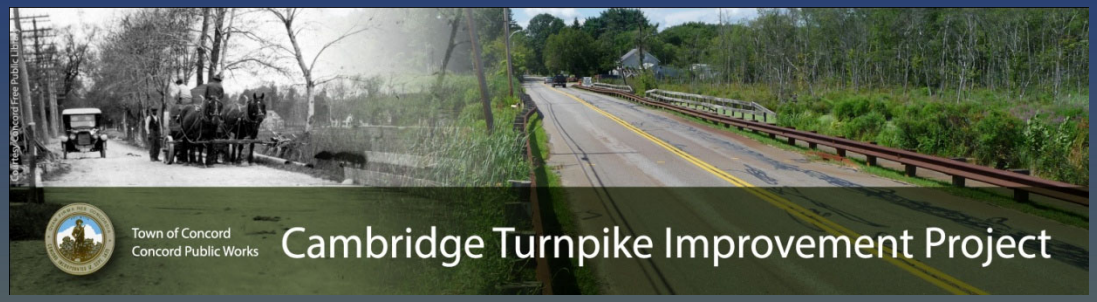
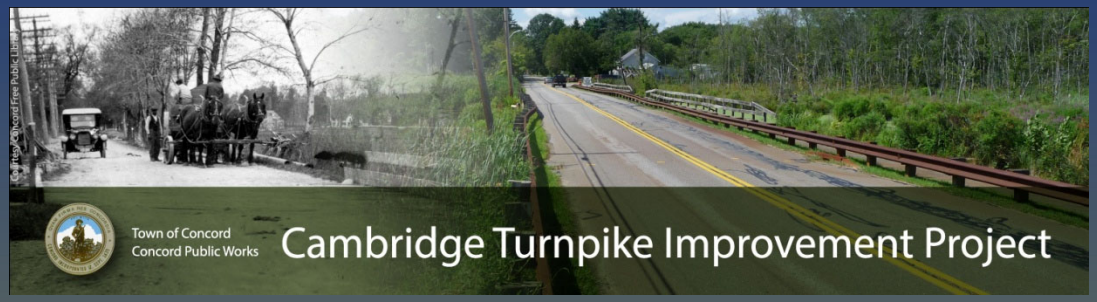
Detour Plan


HEYWOOD STREET
LEXINGTON ROAD
OLD BEDFORD ROAD
HAWTHORNE LANE
SHADYSIDE AVENUE
SOUTHBOUND DETOUR ROUTE
WALDEN STREET
THOREAU STREET
MILDRED CIRCLE
CAMBRIDGE TURNPIKE
CONCORD TURNPIKE CUT-OFF (RTE 2A)
BROOKS ROAD
SANDY POND ROAD
ROUTE 2
CAMBRIDGE TURNPIKE (ROUTE 2)
NORTHBOUND DETOUR ROUTE
LOCAL TRAFFIC ONLY NO THROUGH TRAFFIC
TEMPORARY PRECAST CONCRETE BARRIERS
ROAD CLOSED
ROAD CLOSED 1000 FT
ROAD CLOSED 500 FT
ROAD CLOSED LOCAL TRAFFIC ONLY
CAMBRIDGE TPK CLOSED LOCAL TRAFFIC ONLY
FARM STAND OPEN DURING CONSTRUCTION
CONCORD MUSEUM EMERSON HOUSE
CONCORD MUSEUM EMERSON HOUSE CONCORD CENTER
PCMS (See Note 3)
DETOUR
END DETOUR
TO 2
LEGEND
NORTHBOUND DETOUR ROUTE (2.28 MI)
SOUTHBOUND DETOUR ROUTE (2.44 MI)
LOCAL TRAFFIC ONLY
DIRECTION OF TRAVEL



Construction Impacts

- Detoured Traffic
- Concord Museum
- Mill Brook Farm Stand
- Residents on CT, Mildred Circle & Sandy Pond
- Construction and cut-through traffic on Hawthorne
  - Crosby area will be closed in spring 2020
  - Gate could be added now – eliminate Hawthorne cut-through, but also limit resident options



Project Budget

- J. Tropeano, Inc. (Phase I): $4,065,318
- George Cairns & Sons (Phase II): $7,824,210
- Total Construction: $11,889,527
- Construction Costs Increases
  - Planned added work (Sandy Pond water main and roadway)
  - Unanticipated construction conditions
  - Construction administration and resident engineering