

## **2017 NCC TRANSPORTATION IMPROVEMENT PLAN PROJECT FORM**

**Email address:** [spenney@plymouth-nh.org](mailto:spenney@plymouth-nh.org)

**Originating Agency:**

Unless the originating agency is the NHDOT, please ALSO check 'Other' and enter the name of the City/Town, Planning Commission, or Transit Agency.

- City/Town **X**
- Planning Commission
- NH DOT
- Transit Agency
- Other **X (Town of Plymouth)**

**Contact Person:** – Name, Address, Phone and Email

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**Project Road (s):** Center portion of Highland Street (formerly the early 20<sup>th</sup> century alignment of NH Route 25) from Broadway Street west to Reservoir Road. Project includes rebuild of the misaligned, offset Ward Bridge Road intersection with Highland Street.

**Project Length:** Approximately 1800 linear foot reconstruction of Highland Street including drainage and sidewalk upgrades with an associated 250 linear foot rebuild of misaligned Old Ward Bridge Road intersection with Highland Street.

**Project Origin and Destination:** The project area is the central portion of Highland Street, a primary municipal arterial street between the downtown Plymouth Village and the Tenney Mountain Highway (NH Route 25) commercial areas. The 1800 linear foot project scope is located between Broadway Street and Reservoir Road with an additional 250 feet of work at the Old Ward Bridge Road misaligned intersection of Highland Street included as a major traffic/pedestrian safety correction.

## **Vicinity Map:**

Please email a .pdf version of your vicinity map to [kgray@nccouncil.org](mailto:kgray@nccouncil.org)

- Map submitted **X**
- Map submittal pending

## **Purpose and Need:**

The Purpose and Need Statements attempt to distill the intent of the proposal and the appropriateness of any proposed solutions in solving the transportation problem and meeting any other listed goals and objectives.

The project seeks to mitigate traffic safety concerns caused by the deterioration of 1800 feet of Highland Street with reconstruction of pavement, subsurface, drainage and sidewalks providing enhanced safe travel for vehicles, pedestrians, and public transportation along this main municipal thoroughfare. Included in the project scope is reconstruction of the Old Ward Bridge Road intersection on Highland Street will address significant design safety concerns at the busy elementary and regional high school campus entrance.

Highland Street formerly served as the alignment of NH Route 25 before its 1930s relocation northwest near the Baker River and was originally constructed of concrete slabs, reflecting the ineffective technology of that era. Roadway drainage, although dutifully maintained over the years, has not held up to increasing traffic and the constant heaving that concrete slabs in the roadway subgrade create. Historically, Highland Street was also known as the Coos Road in Plymouth's post-Revolutionary War years and provided access to the county seat at Haverhill.

Highland Street hosts the town's elementary and regional high school campuses at of Old Ward Bridge Road adjacent to Highland Street. The misaligned intersection at Old Ward Bridge Road creates a safety hazard with poor turning radii of school buses directly located next to pedestrian sidewalk facilities.

Municipally-sponsored rebuild of the western portion of Highland Street from where it connects to NH Route 25 (Tenney Mountain Highway) has progressed with slow but steady determination over the last 15 years, primarily with municipal funding. However, the project area between Broadway Street and Reservoir Road has steadily deteriorated in that time with significant pavement heaving due to original cement slab underlay and constant roadway flooding and ponding due to poor or missing drainage infrastructure.

Pavement overlays and emergency repairs to drainage have provided temporary relief to the dual problems of poor subgrade and surface combined with inadequate and outdated drainage but these are temporary fixes at best. Reconstructing this portion of Highland Street will result in two-thirds of this main municipal thoroughfare being totally brought up to modern traffic standards. Completion of the Highland Street rebuild on the eastern terminus with downtown Plymouth is planned for the future once this critical section of the road is reconstructed.

**Description of Proposal Location:**

Highland Street within its overall two-mile length services five zoning districts for the Town of Plymouth and serves as the de facto bypass through town to NH Route 25 and points west. The 1800 foot length of this project is located centrally along Highland Street and serves both the Single Family Residential and Civic Institutional zones, experiencing over 5900 AADT mixed vehicle counts (2014) per day including passenger vehicles, light duty delivery trucks and school buses. As the central portion of Highland Street, this project reflects an area has not been fully repaired or reconstructed for many decades and which encompasses both the regional elementary and high schools, many professional office buildings and significant numbers of residences.

**Purpose:**

What problem(s) is the proposal addressing?

This project addresses two interrelated safety problems. The first safety concern is the overall poor condition of Highland Street in the project scope area (Broadway Street to Reservoir Road) which is constantly deteriorating due to poor drainage and under par subgrade/surface conditions. Continual heaving, pavement cracking, water ponding and flooding increase safety stress levels for travel on this portion of Highland Street for the 5900 AADT drivers who traverse it daily. Relatively high volume traffic counts and poor roadway conditions combined exacerbate safety concerns in this predominantly residential neighborhood.

These overall conditions are compounded by the misaligned four-way intersection at Highland Street and Old Ward Bridge Road which is the entrance to the local and regional school campus (elementary and high school). Narrow travel lanes on Old Ward Bridge Road and an insufficient turning radius for school buses combined with a lack of breakdown lane between OWB Road and adjacent pedestrian sidewalks create a serious safety hazard for students both being bused and traveling to school as pedestrians.

**Need:**

Is evidence available to support the need for the proposed project? For example, crash history, turning movement counts, AADT, signal warrant analysis, etc.

Plymouth Police Department accident data for a five-year period between February 2012 and February 2017 showed 79 accidents occurring on Highland Street. Of the sixty-three streets, Interstate 93 and two state/federal highways recorded in that data (NH Route 25 and US Route 3), numbers of accidents on Highland Street were the third highest recorded with the next closest count to Highland being 27 accidents in the same time period. As mentioned earlier, NHDOT AADT 2014 counts for Highland Street were 5900. Plymouth's population estimated by

the NH Office of Energy and Planning for 2015 was 6427; a relatively small number as compared to the AADT through this residential neighborhood which connects to schools, Route 25 western commercial area and the eastern downtown village and Plymouth State University campus.

### **Goals and Objectives:**

Beyond those mentioned in the Purpose statement, what other issues will be addressed by the project?

Realization of the Highland Street central area 1800 foot upgrade and associated Old Ward Bridge Road intersection rebuild will greatly enhance the walkability of the street by its associated sidewalk reconstruction. Plymouth is a municipality in which pedestrian and bicycle travel is highly evident, owing to its hosting of the majority of the Plymouth State University campus along eastern Highland Street and Plymouth's very walkable village downtown. Although the present condition of existing sidewalks along portions of Highland Street is fair to poor in most areas, the majority of the two mile length of Highland Street has sidewalks in place, with the exception of west of Hatch Plaza to the NH Route 25 intersection.

The Plymouth State University public transit bus (which serves ALL community riders free of charge) travels regularly along Highland Street with many fixed route stops along its length. Deterioration of the travel way portion of the street inflicts wear and tear on the public transit bus along with traffic safety issues associated with poor drainage and road surface quality.

### **Proposal and Scope of Work:**

Describe the project proposal and identified scope of work

The scope of work will reconstruct 1800 linear feet of Highland Street from Broadway Street west to Old Ward Bridge/Reservoir Road including excavation of cement-slab subgrade, new pavement installation, new drainage structures and sidewalk replacement to ADA standards. This reconstruction will greatly alleviate roadway surface (and sidewalk) pavement deterioration due to heaving from improper subgrade (cement slabs) and mitigate ponding/flooding of surface runoff from insufficient drainage infrastructure.

Also included in the project scope would be the realignment of the Old Ward Bridge Road intersection at Highland Street connecting to the elementary and regional high school campus. Reconstruction of the intersection to a length of 250 feet down Old Ward Bridge Road would

include minor (1300 SF) ROW acquisition, lane width/turning radius increase, at-grade sidewalk separation from the travel lane and overall safety and drainage improvements in this school zone. Presently, school buses and larger vehicles must swing wide into other lane/ sidewalk area to make the turn. Sight distance exiting Old Ward Bridge Road is off because of offset Reservoir Road intersection alignment directly across Highland Street from OWB Road.

**Alternatives:**

What alternatives to the proposal described above have been considered?

There is no alternative to implementing reconstruction of the roadway, sidewalk, drainage and Old Ward Bridge Road intersection as described in the project scope. The project must occur to provide necessary safety redress to the traffic and pedestrian issues created by the continuing deterioration of the structures due to age and original construction deficiencies.

The Town of Plymouth has added monies to a CIP fund for continuing maintenance and repair of Highland Street for over fifteen years as part of a long-term maintenance and repair strategy and has spent many hundreds of thousands of those dollars to repair and reconstruct the western portion of the street near the NH Route 25 commercial district. However, the amount of funding required (**\$1,107,232 estimate**) for this particular scope of work (reflecting only 20 percent of the two-mile length of Highland Street) greatly exceeds the monies held in capital reserve in spite of this fiscal due diligence. This is a situation where ‘catch-up’ is never achieved and the Highland Street deterioration, despite continuing patchwork repairs and CIP annual appropriations, continues to increase on a busy municipal thoroughfare.

**Priority:**

Is the proposal identified as a priority in a local or regional plan (for example: local master plan, local bicycle/pedestrian plan, corridor study, regional transportation improvement plan, etc.) If yes, provide an internet link to the pertinent section of the plan(s).

Municipal capital reserve funds (CIP) specifically earmarked for Highland Street are presently at approximately \$451,000. This amount reflects the highest level of monies presently in the CIP for any municipal category. However, as noted before, the deterioration of the street continues at a much faster pace than the increase of the CIP funds and the other 80 percent of needed improvements to the (eastern) remainder of Highland Street still await redress.

As noted below in “Supporting Evidence Documentation”, the identification of Highland Street/Old Ward Bridge Road intersection as important areas of transportation redress has been cited in several documents such as the 2008 Plymouth Master Plan, 2017 Plymouth Master Plan update, municipal accident reports and the submission of 2014 and 2016 TAP applications to NHDOT which included portions of the project scope.

**Cost Estimate-Engineering: (Preliminary, Final and Construction Engineering combined)**

**\$212,367.00**

**Cost Estimate-Right of Way:**

**\$10,000.00**

**Cost Estimate-Construction:**

**\$884,865.00**

**Cost Estimate-Structures: No ‘structures’ (per se) required**

(Standard construction fixtures such as manholes, catch basins, headwalls, guardrail, granite curbing et cetera costs itemized and listed on submitted construction estimate budget.)

**Cost Estimate-Capital:**

**None**

**Cost Estimate-Operational:**

**None**

**Cost Estimate-Details:**

What is the source of the above cost estimate?

**Cost estimate details are submitted as documentation addenda in this application.** The cost estimate details were provided by the Town’s consulting engineer Michael Vignale, P.E. of KV Partners LLC, New Boston, NH and are current to 3-1-17.

### Supporting Evidence Documentation:

- Corridor Study (Email excerpt)
- Local Transportation Study/Plan (Email excerpt)
- Regional Planning Study/Plan (Email excerpt) X **(NCC-authored Plymouth Master Plan 2017 update of Transportation Chapter cited importance of Highland Street as bypass and need for maintenance work on roadway and sidewalks as safety concern.)**
- Crash Reports X **(Plymouth Police Department)**
- Turning Movement/Traffic Volume Data X **(NHDOT)**
- Special Studies (Road Safety Audit/Warrant Analysis, etc
- Ridership Estimates
- Safe Routes to School Travel Plan
- No Documentation Available
- Other X **(2008 Plymouth Master Plan Implementation Chapter “Transportation Policies, Tasks and Strategies” Item #s 1,2, 3, 4, 9 and 18. )**

### Detailed Potential Impacts:

Mark all known potential impacts within or adjacent to the proposed project area and submit or coordinate with your regional planning commission to create and submit a detailed map of the project location and surroundings. Towns should submit to their regional planning commission, regional planning commissions should submit to DOT.

- Water resources, aquifers, wetlands
- Wildlife habitats
- Flood zones
- Park/Recreational areas
- Recreational/multi-use trails
- Scenic/historic/cultural resources
- Low income, minority, elderly housing
- Retail/tourism destinations
- Employment centers
- Municipal services/schools X **(Temporary traffic rerouting at Old Ward Bridge Road depending on construction timetable/academic year.)**
- Culvert/bridge
- Bike lanes/sidewalks/crosswalks
- Transit Service/public transportation routes
- Park and Ride facilities
- Signalized intersections
- Active railroads

- Commuter sheds
- Freight corridors
- Other active or proposed transportation improvements
- No known impact
- Other X ( **Minor ROW acquisition will be required (1300 SF) from landowner abutting Old Ward Bridge Road. Temporary construction easements may be required at points along the 1800 foot and 250 foot project scope areas. Identified by Town's consulting engineer).**

**\*Supporting documentation for this application is submitted electronically as attachments.**

