

February 5, 2014

Michael Pivero, Road Agent
Town of Newton
PO Box 378
2 Town Hall Road
Newton, NH 03858

Re: Roadway Condition Evaluation

Dear Mr. Pivero:

KVPartners completed a Roadway Condition Evaluation on selected roadways identified by the Town as most in need of repairs. The evaluation included field investigations, roadway condition assessment, recommendations and cost estimating. This work was developed to a level of detail adequate to plan a multi-year Capital Improvements Program (CIP) for these roadways.

The following roadways were included in the evaluation:

- Smith Corner Road (Plaistow TL to Williamine Drive)
- Crane Crossing Road (Kingston TL to West Main Street)
- Heath Street (Pond Street to North Main)
- Pond Street – Section 1 (Heath Street to Whittier Street)
- Pond Street – Section 2 (Valley Drive to Chase Road)
- Meadow View Drive (Pond Street to circle)
- Gale Village Road (North Main to Maple Avenue)
- Maple Avenue (North Main to the South Hampton TL)
- Thornell Road (North Main Street to South Main Street)
- Wallace Street/Chase Road (South Main Street to Pond Street)

Scope of Evaluation

The field investigations for the roadway segments included visual observation of the roadway pavement conditions; roadside drainage patterns; locations of roadway cross culverts and drainage systems; approximate roadway widths and lengths; any severe cross slopes; and any obvious safety concerns. Adequate detail was collected to develop a plan for improvements and to determine budget level construction cost estimates. Town Staff was interviewed to determine road maintenance history and to identify problem areas. No field survey was completed.

Recommendations

The pavement rehabilitation recommendation was based on the pavement condition observed, need for roadway regrading and need for roadside drainage improvements. Options considered included a reclaimed base course with new bituminous concrete pavement or shim and overlay. In general, if the pavement was distressed, with significant cracking, rutting and other evidence of base failure, the reclaimed base course option was recommended. If the pavement was cracked but still showed no evidence of rutting or major cracking a shim and overlay of the existing pavement was recommended. In short sections of pavement that were in relatively good condition, but between two areas where the pavement was in poor condition, the reclaimed base option was continued through those areas for construction practicality. The reclaimed base course option is preferred on a roadway in poor condition,

although more expensive initially than a shim and overlay, the pavement will last significantly longer (well over 10 years vs. only a few years for the overlay) and will probably be less expensive when considered on a long-term basis.

The shim and overlay option includes a total of 2" of bituminous concrete applied in a ½" shim layer (average thickness) and a 1½" overlay. The reclaimed base course option includes in-place pavement reclamation to a depth of about 12", a 2½" binder course and a 1½" surface course.

Roadside drainage improvements and improvements where ponding was evident were recommended. Roadside improvements included bituminous berm (12" wide by 4" high so plow damage will be minimized) and vegetated swales (18" deep, 2-foot wide bottom, and 3:1 side slopes). Berm was only recommended where a swale could not be installed without significant impacts to the roadside and to abutting properties. New discharge locations were only added where necessary. All drainage recommendations are conceptual and field survey and design will be required to verify the details and constructability of the concepts.

Specific recommendations for improvements to each roadway segment are depicted on the attached 8½" x 11" Schematic Plans. The 2003 NAIP Imagery available from GRANIT was used for the base maps for this area with proposed concepts shown graphically.

Cost Estimates

Cost Estimates were developed for each roadway segment. The cost estimates are planning level for establishing budgets only (see attached estimates). Following is a summary of project estimates:

Roadway	Approximate Cost	Length of Roadway (FT.)	Average Cost per foot
SMITH CORNER ROAD	\$120,000	2,150	\$56
CRANE CROSSING ROAD	\$68,000	1,000	\$68
HEATH STREET	\$384,000	4,300	\$89
POND STREET (SECTION 1 AND 2)	\$260,000	4,100	\$63
MEADOW VIEW DRIVE	\$106,000	1,300	\$82
GALE VILLAGE ROAD	\$227,000	3,300	\$69
MAPLE AVENUE	\$189,000	4,200	\$73
THORNELL ROAD	\$354,000	5,500	\$64
WALLACE STREET/CHASE ROAD	\$178,000	2,350	\$76
TOTAL PROGRAM	\$1,886,000	30,200	