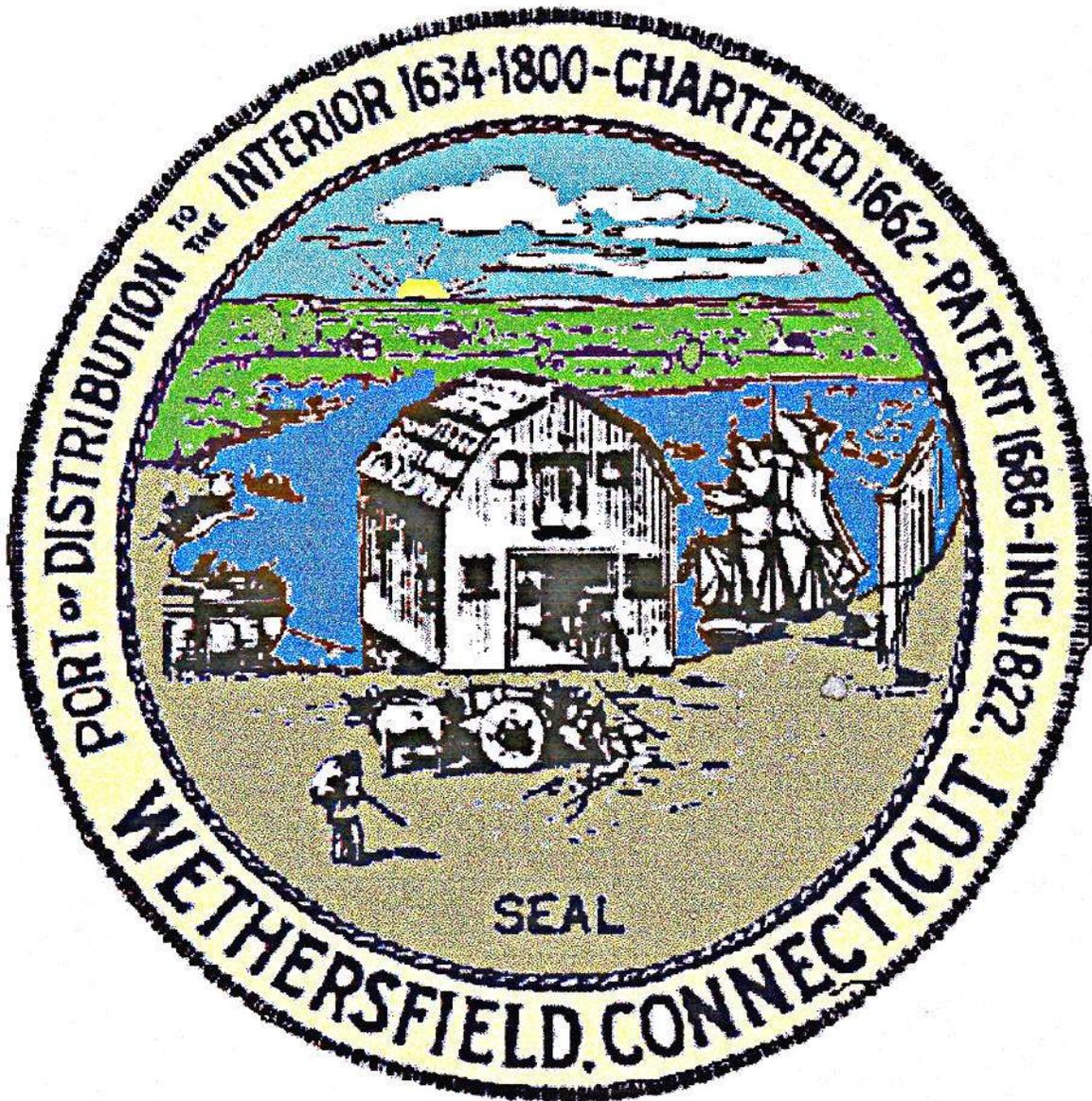


Town of Wethersfield, Connecticut

Pavement Management Policy



Adopted July 16, 2012

This document has been prepared in response to input from a working committee group charged by Mayor Donna Hemmann, and consists of input from members of the Town Council Public Works and Infrastructure Committees, Capital Improvements Advisory Committee, and town staff from office of Town Manager, Engineering Division, and Physical Services Division.

Goals

The Town of Wethersfield has a commitment to the residents and traveling public to keep and maintain the town 104 miles of roadway in a safe and passable condition and provide upkeep and maintenance in the most cost effective manner.

The Town recognizes that roadway pavement in New England has a limited lifespan, which can be extended through proper and scheduled maintenance. The Town has devised a system of both preventive and routine maintenance which includes crack sealing, mulch sealing (cold applied crack seal), pothole patching and deep surface repairs. Structural repairs which include overlays, mill and overlays, reclamation and reconstruction are more intensive and expensive to extend pavement life cycles.

A Street which received little to no maintenance would be expected to last 20 to 30 years before it needed to be completely reconstructed. The quality of the original construction, soil conditions under the road surface, flooding and drainage, traffic volumes will all have a dramatic effect on the expected life span.

Pavement Maintenance Strategy

Recognizing the importance and value of the town streets as an asset, the Town has developed a master database of the pavement condition of each road segment in town. The database identifies all defects such as potholes, utility cuts, rutting, distortions, delaminations, transverse and longitudinal cracking. The limits and extent are included in the database to allow the town to develop a strategy for pavement maintenance. Each defect is a symptom of a specific type of problem.

The town has had this Road manager database in place since 1995 and now has a good history for predicting useful pavement life and recommendations for repair strategies and the most cost effective use of town funds for repairs. The following graph depicts the actual deterioration rates of roads in Wethersfield.

Insert VHB graph here

Rating and Ranking of Streets

The Town of Wethersfield has since 1995 used VHB consulting engineers to inspect and rate the pavement condition of our roads. Every 5 years the firm will visually inspect every road segment and log the location and extent of the various road defects. The Town engineering staff updates the database in between the VHB inspections, noting preventative and routine maintenance work (crack sealing) and the milling and overlay and reconstruction work.

The rating system uses the road defects to rate the condition of the pavement between 0 and 100, where a score of 100 is a perfect, new road surface. In 1995, the average Town Pavement Condition Index or PCI was 75. The average PCI has varied over the years, peaking at 80 in 2005 upon completion of a roadway bond program, and infusion of several million of tax dollars into the pavement maintenance category. Our current PCI is 76.

Goal is to achieve and maintain a Town wide PCI of 80 or better. The town engineering staff is charged with the physical inspection of all roads and update of database every 5 years minimum, and the annual update of database to reflect work done that previous season.

Pavement Repair Strategies

The Town is constantly looking and new and innovative technologies available for repair of our roads, but uses the following methods on a recurring basis due to their cost effectiveness and ease of availability of contractors and bids. It was agreed and understood that not all available funds should go to worst roads- we need investment in roads that are in fair/good shape as integral part of the repair strategy in order to improve overall average PCI.

The following repair strategies have been identified as the available solutions for our town. Town will consider alternate methods such as nova chip, chip sealing etc on case by case basis

Crack Sealing

There are two types of crack sealing available and utilized by the town as a routine maintenance strategy.

Hot crack sealing is a method where molten rubberized asphalt is applied in roadway cracks to seal the joint from rain and runoff. The process is hand applied thru a wand type sprayer, and is then coated with an anti tracking sealer such as Glenzoil.

Cold crack sealing, also known as mulch sealing applies a patented cold product into the cracks, then a cover material consisting of a sand/stone mix with leaf compost or other organic is applied as a cover topping to prevent tracking, and is best for roads with high traffic volumes.

Both these methods are state DOT approved and are very cost effective repairs which extend the life of a roadway by 5 to 7 years.

Bituminous Overlay

A bituminous overlay is a cost effective method to renew the structural integrity of a roadway. Depending on the engineering department review of driveways, curbs, sidewalks, and storm drainage system, the overlay can be accomplished by itself or in combination with a milling or grinding operation. The overlay essentially is a new top layer, generally 2.0 to 2.5 inches thick applied over roads which are still structurally sound. Often there are localized areas which require deep surface repairs to remove and replace stone base.

If slope of the driveway aprons require, the roadway surface is milled off generally to the same thickness as the proposed overlay. Local potholes are filled and deep surface repairs made as required. Often the milling operation can be used to address minor gutter drainage problems to assure flow of stormwater in the gutter reaches nearby catch basins. Milling can go curb to curb, or be limited to the gutters only. The engineering staff inspects the conditions of the catch basins structures and will contract to replace the tops as required during this process.

In similar manner, the bituminous curbing condition is evaluated and an engineering judgment made as to whether the curb should remain or be replaced, based on extent of damage or failure.

The new bituminous overlay is generally a 2.0 to 2.5 inch thick layer of asphalt across the entire roadway width. Often a truing and leveling course of 0.5 to 0.75 inch is placed first to address grading and cross slope deficiencies.

Reclamation and Reconstruction

Bituminous reclamation and roadway reconstruction are options available when the structural condition of the road surface is too damaged to allow an overlay, but the base and storm drainage systems are still in good shape.

Test cores are taken thru the pavement and base and a sieve analysis is done to determine the soil consistency an engineering judgment is made whether the ground up pavement and base when mixed would form a suitable base for overlay.

If it is determined to be feasible, a roadway reclamation project includes grinding up the pavement and up to 8 or 10 inches of the stone base below that, and mixing and replacing it, regrading the shape to form a new road base. The grinding usually fluffs the grade so that excess material must be removed to an off site location for disposal. Two new pavement layers, generally 2 inches thick each are placed on top of the regraded and compacted base. New curbing is also required.

If the test cores reveal little or no available base to use, the road is selected for reconstruction. This process is the removal of the pavement and stone base layers down to 18 inches below grade wherein a new 6 inch gravel subbase, 8 inch process stone base, and two 2 inch courses of bituminous pavement are replaced. New curbing is included in this process. The engineering office also evaluates the need for adjustments, repairs and replacements to the storm drain collection system, and even extensions of that system.

Procedures and Timelines for Pavement Maintenance Projects

Based on 2012 dollars, the VHB Road manager program has determined that the Town must expend \$1.2 Million. The 2012-13 FY Budget adopted by Town Council established a dedicated Road Tax levy which sets aside a guaranteed amount of funds for pavement maintenance.

The state funding to Wethersfield comes in the two forms, Town Aid for Roads (TAR) and Local capital Improvement Program funds (LoCIP). The combination of these funds over the past several years is about \$400,000. The town has historically used TAR in combination with the town General Funds to perform preventive and routine maintenance work. WE have then set aside the LoCIP funds for major reconstruction projects often taking several years allotment to fund a particular street reconstruction.

The Town generally strives to do both a spring and a late summer/fall paving program. Once the Town Council adopts a budget, the engineering staff uses the Road Manager program to make preliminary selections of roads based on cost benefit analysis. Generally speaking, crack sealing is the most cost effective repair, followed by overlay, mill and overlay, reclamation then reconstruction.

A certain percentage of the Pavement Maintenance budget is provided to the Physical Services division for roadway materials such as pothole patch, bituminous concrete, catch basin top replacement, curbing and like repairs.

Another portion of these funds are dedicated to hot and cold crack sealing.

The LoCIP funds are allocated toward a major road reconstruction project in the \$500,000 construction value range. Application is made via Town Council resolution to the State Office of Policy and management for approval of these grants. A target road must be predetermined. This is done by engineering division staff with Road Manager input.

The balance of the budget is then applied to the selection of roads for overlay of streets. In general the engineering staff uses the Road manager software to make initial road selections. Each road segment is visited in the field to confirm the condition status and types of defects, and a cost estimate is prepared. The preliminary list is shared with the various utility companies so they may compare with their own CIP programs for waterline, sewer or gas main replacements, etc. The MDC will also use CCTV to inspect their sanitary sewers and examine condition of the pipes. If required the

utilities are given a year to make repairs or improvements to their infrastructure and the road overlay is postponed.

In 2012, the Mayor requested a work group be convened to discuss strategies to address how roads are selected for milling and overlay. Of specific concern were small residential cul de sacs which would see little traffic volume and therefore the cost benefit value would always remain low. Secondly we streets of such condition that the Town Manager or Town Council had received petitions or numerous complaints.

The working committee has directed staff to consider the following when making recommendations for which streets to include in the annual road program:

- Annual review by Physical Services, MDC, CNG of roads selected for repair by Engineering,
- Annual review of public record, including complaint log received at Town Manager, Physical Services, Engineering, Town Clerk and town council.
- Set aside portion of dollars for small cul de sac and low volume residential streets (start with \$200,000 per year for first 2 years, then reduce to \$100,000 per year dedicated to cul de sac projects)
- Priority Inclusion of roads which were uncompleted in previous year program

Road selection process steps

1. Budget adopted by town Council.
2. Portion of funds set aside for town highway maintenance, crack sealing, reconstruction projects
3. Review if any roads uncompleted from last season as first priority
4. Update prices used in Road manager to reflect previous season actual costs
5. Using Road Manager, develop a 3 year look out Preliminary (to look at neighborhood grouping to minimize mobilization costs and ensure environmental justice)
6. Engineering staff drives/walks each road to confirm computer listed defects, and to identify additional repairs or problems (eg need for underdrains, added catch basins, etc)
7. Engineering staff reviews complaints, petitions, exhaustive maintenance/work order records

8. Engineering staff reviews CIP adopted and 5 years out for conflicts or other funding sources
9. Engineering Staff prepares preliminary selection based on above, then prepares detailed cost estimates and measurements of work involved. Test cores may be necessary if looking at reclamation or reconstruction. Police, Parks and Rec., schools, garbage collection, fire dept., and state DOT are slo coordinated.
10. Staff meets with Capital Improvement Advisory Committee to determine final list including cul-de-sac or low volume residential streets.
11. List distributed to physical services and MDC, CNG for review/conflicts with their projects
12. Final selection roads coordinated with utilities
13. Staff reviews state and CRCOG bids for final pricing and awards
14. Bids recommended to Town Council for award
15. Work scheduled with paver, milling, police, and pave prep vendors, residents, utilities, schools, and special functions schedules, and of course the weatherman.

Coordination with Utility Companies, licensed excavators & Private Property owners (NEW)

Using the Engineering Department roster of licensed contractors, the companies who perform the majority of excavation work throughout Wethersfield, including licensed contractors and utility companies are required to review and officially clear the streets proposed for resurfacing or reconstruction by the Town. Currently there are 42 entities who are involved in the Town clearance process.

Infrastructure in streets identified as "cleared" by each entity are expected to be highly reliable, showing little to no signs of failure and/or frequent emergencies. By clearing the street the company is indicating that the streets will not be cut into for a minimum of 5 years for resurfacing candidates, and 10 years for reconstruction candidates.

If one of these 42 entities is unable to clear a proposed Town resurfacing or reconstruction project due to a need for major work, the Town will defer the resurfacing or reconstruction for up to one year. During this time, that company's necessary excavation work must be completed.

All other service or other minor conflicting work is expected to be completed prior to the resurfacing or reconstruction. Where necessary, the Town will

defer resurfacing for not more than 60 days to allow these projects to take place.

The Public Works Department has responsibility for sending letters to private property owners of proposed resurfacing or reconstruction street candidates. In the event that the property owner needs an upgrade or new service, the notification letter informs them of the pending Town project and educates them of what it means for a street to become "Guaranteed," warning that "now is the time to install or upgrade services". The Town will allow at least 60 days from the time of the notice delivery to perform the needed work.

Restriction of Street Opening of Newly Paved Streets (NEW)

No permit shall be issued for any street excavation/opening which would disturb the pavement of any road having been constructed, reconstructed or overlaid until a period of five years after 'the completion of said construction, reconstruction or overlay, except in the case of an emergency or hardship as described below. The five-year period as articulated herein shall be calculated from December 31st of the year in which said road was constructed, reconstructed or overlaid and run five years thereafter. When in the opinion of the Director an extreme emergency does not exist, driving, dry boring, coring or jacking methods may be used to accomplish the installation subject to the approval of the Director. Extreme care must be taken to protect existing underground utilities at all times.

A. Emergency Opening

In the event that a person shall be required to open a street and/or roadway as a result of an emergency, said emergency opening shall be reviewed by the Designated Public Works official and if the said Designated Public Works official shall determine that no such emergency existed, then the person so opening the street and/or roadway shall pay a fee of \$1,000.00 for the first non-emergency opening, \$5,000.00 for a second non-emergency opening, and \$10,000.00 for a third non-emergency opening which occur during a calendar year.

B. Hardship Condition

In the event in which the property owner has a hardship condition which requires a street opening permit to be issued contrary to Section XXX, the Town of Wethersfield may grant relief upon the following:

1. Recommendation of the Designated Public Works official and approval of Town Manager, and
2. Majority vote of the Town of Wethersfield Town Council.

Requests for a hardship waiver need to be in writing and must include the following information: the location of the excavation; a description of the work to be performed including size of excavation; why the work was not performed before the street was resurfaced or reconstructed; why the work cannot be deferred until after the expiration of the applicable time limitation; and why the work cannot be performed at another location. In determining whether to grant the waiver, the Town will consider the following factors: the impact of the proposed excavation on the neighborhood; the applicant's need to provide services to a property or area; the importance of facilitating the deployment of new technology; and the public's health, safety, welfare, and convenience.

C. Roadway Restoration.

In the event that an emergency or hardship requires the opening of a roadway that has been resurfaced by the Town within the previous five years, a full width restoration will be required. The restoration will consist of six inch dense graded aggregate base course, and a six inch hot mix asphalt base course, Mix 1-2, brought to existing grade, within the excavated area. A full width, curb to curb, milling two inches in depth to extend 20 feet beyond the limit of excavations will be performed after proper settlement in the trench area. The Allowable time for the settlement shall be 45 days unless otherwise directed by the Designated Public Works official. The final surface course shall be a two inch hot mix asphalt surface course, Mix 1-5. See detail at end of chapter.

Trench restoration may be permitted under special circumstances and at the option of the Town of Wethersfield and the Designated Public Works official for openings having a minimum impact on the longevity and serviceability of the street in question. See detail at end of chapter.

D. Exemptions

Street openings and excavations performed by the Town of Wethersfield or agents of town