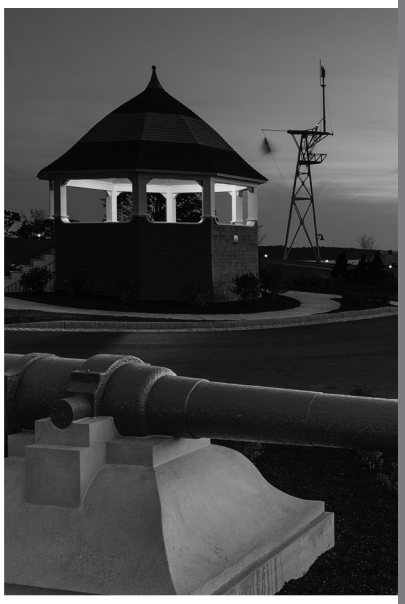
Relationships.
Responsiveness.
Results.



2021 Pavement Condition Study Final Report Casco, Maine

PREPARED FOR:
Town of Casco
635 Meadow Road
Casco, Maine 04015

February 2021

SUBMITTED BY:
Gorrill Palmer
707 Sable Oaks Drive
Suite 30
So. Portland, ME
04106 207.772.2515

Town of Casco, Maine
Pavement Condition Study

Table of Contents

Introduction

Gorrill Palmer was retained by the Town of Casco to complete pavement and gravel roadway condition assessments for all municipal roadways.

The purpose of the study was to assess the pavement and gravel condition of the municipal roads and to develop a five-year plan for improving the roadway conditions. By continuing to complete these roadway evaluations on a regular basis, it is possible for the Town to better gauge how quickly the road surface is deteriorating and, consequently, how best to allocate resources.

We understand the Town intends to use this report for budgeting, prioritizing, and developing their annual capital improvement plans. The pavement software database will be provided to the Town so updates can be made to track the road improvement work in subsequent years. We recommend the Town continue to inventory pavement condition ratings every three years.

Definitions

Pavement Management: The process of planning maintenance and repair of a network of roadways in order to optimize pavement conditions over the entire network.

Preventive Maintenance: Cost-effective treatments to an existing roadway system and preserves the system, retards future deterioration, and maintains or improves the functional condition of the system (without significantly increasing the structural capacity).

Pavement Rehabilitation: To extend the service life of a paved road and/or improve road strength and load carrying capacity.

The following graphic illustrates the cost implications if the preventive maintenance roads are neglected. It is significantly less expensive to perform regular preventive maintenance on a roadway than to rehabilitate or reconstruct a roadway. Roadway rehabilitation and reconstruction often costs three to six times the amount of preventive maintenance and road reconstruction typically costs at least six times the amount of preventive maintenance. Therefore, it is most cost-effective to complete regular preventive maintenance to maintain the roadways, so they do not reach the point where they require costly rehabilitation or reconstruction treatments.

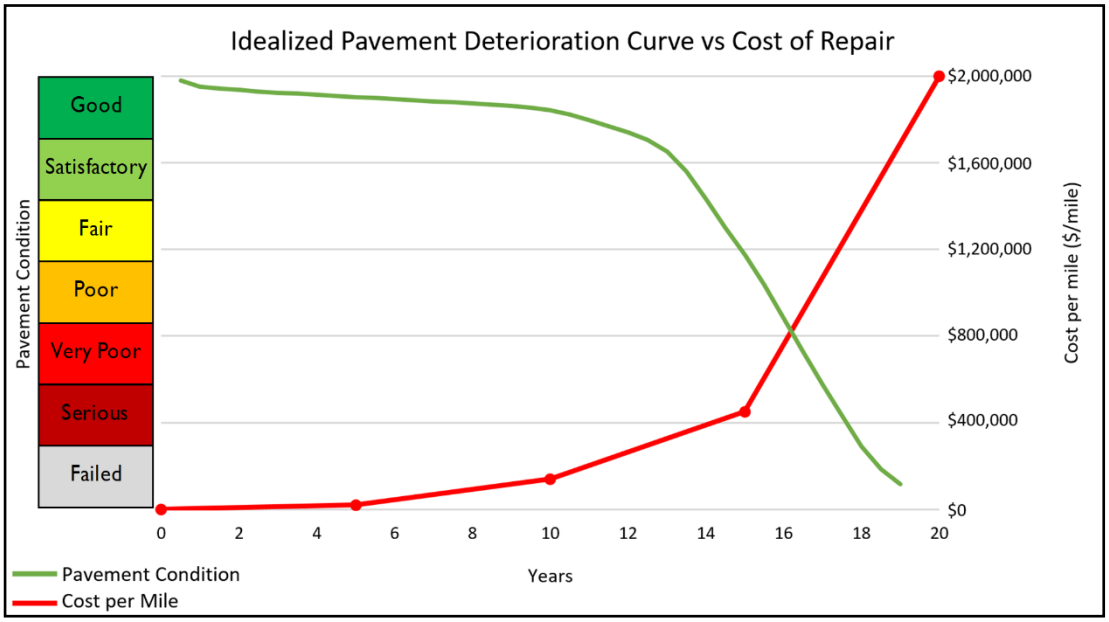


Figure 1 – Idealized Pavement Deterioration Curve

Note: The cost per mile costs are approximate and can vary greatly depending on many different variables such as distress type, distress severity, distress frequency, etc.

The pavement and gravel conditions were evaluated in the field and entered into the Road and Sign Management Software (RSMS), Version 16.2.21, distributed by the Maine Local Roads Center (MaineDOT). The pavement condition rating methodology is summarized on the following pages.

Data Collection

The initial geographic information system (GIS) and database files for the Town of Casco's road network were provided by the Town who first purchased RSMS in 2014. State-aid roads and private roads were excluded from the evaluation. Several of the roads were split into

sections based on their prior paving history or dimensional characteristics. For example, a road that had been partially paved in prior years would be segmented so that the segment with newer pavement would not artificially improve the condition rating of the portion that had not been recently paved.

Field Inventory

The data collection was performed by Gorrill Palmer between the dates of December 28 – December 30, 2020. The survey work was performed by one person to ensure consistent ratings and results for each road section. Approximately 26 miles of local Town paved roads were evaluated while approximately 6 miles of local Town gravel roads were evaluated.

The pavement condition data was collected using a pavement distress survey approach developed by the Maine Local Roads Center. The RSMS Field Manual states that the survey may be completed while driving and it is not necessary to stop to perform any of the survey work. However, based on our experience, our field inspector also stopped periodically to better observe the condition of each road segment. The distress survey records the extent and the severity of commonly occurring pavement distresses. Gravel distresses were recorded only for the extent of commonly occurring gravel distresses.

For pavement, the critical distresses include the following types of cracking and damage: alligator cracking, transverse/longitudinal cracking, edge cracking, and patching/potholes. In addition, overall pavement roughness, rutting, and roadside drainage were observed. A brief description of each type of distress and corresponding photographs are provided below:

- Alligator Cracking: A series of interconnected cracks in the pavement resembling alligator skin or chicken wire. This type of cracking is typically caused by repeated traffic loadings and often indicates fatigue failure.

Alligator Cracking – New Road

- Longitudinal/Transverse Cracking: Cracks running parallel and/or perpendicular to the roadway. These types of cracks are typically caused by inadequate support, reflection of underlying layers, or a precursor to alligator cracking.

Longitudinal Cracking – Burgess Road

- Edge Cracking: Cracks begin parallel to and within 24 inches of the pavement edge. Cracking is either a fairly continuous straight crack or crescent-shaped cracks in wave-formation. Edge cracking can be caused by the lack of adequate road shoulders or damaged shoulders due to erosion or other causes.

Edge Cracking – Jim Small Road

- Patching/Potholes: Patching is where original pavement has been replaced, but patch is failing. Potholes are where pavement has broken, leaving a bowl-shaped depression. A pothole is either not patched, or the patch is failing.

Patching/Potholes – Stone Road

- Roughness: Uneven roadway surface that affects the comfort of the ride.

Roughness – Ward Circle

- Rutting: Channels in the wheel path caused by displacement of pavement material. Rutting generally indicates a structural deficiency in the base gravel or the road subgrade.

Rutting – Ring Landing Road

- Roadside Drainage: Proper drainage allows water to flow off the pavement freely and allows water in the pavement subbase to drain and be conveyed away from the road. Lack of drainage often results in damage to the pavement structure, either through frost heaving, resulting in pavement cracking, or weakened subbase resulting in structural damage to the pavement system.

Roadside Drainage – South Casco Village Road

The severity of each of the seven pavement distresses was estimated and recorded on a none/low/medium/high scale. For example, low severity cracking would be considered a hairline crack in the pavement whereas a high severity crack would be a 1-inch wide crack.

Similar to severity, extent of pavement distress was measured on a none/low/medium/high scale where low is less than 10% of the roadway segment and high is greater than 30% of the roadway segment for any specific distress. Copies of the field data forms are included in Appendix D. In this study, we entered data directly into the RSMS software on a laptop computer.

Gravel distresses were only evaluated for severity, not extent. These distress conditions include the following: rock/clay, rutting, loose aggregate, corrugations, potholes, dust, cross section, and roadside drainage. A brief description of each type of distress and corresponding photographs are provided below:

- Rock/Clay: Rocks larger than 6" and/or areas of clay in the road surface. Road lacks any apparent and suitable base material, and/or natural materials provide no support for anticipated traffic loading.

Rock/Clay – Lord Road

- Rutting: Long, narrow depressions caused by a vehicles' tires.

Rutting – Bramble Hill Road

- Loose Aggregate: Loose material on the road surface.

Loose Aggregate – Lord Road

- Corrugations: A series of bumps perpendicular to the road surface, resembling a washboard.

Corrugations – Maine Local Roads Center (2011)

- Potholes: Areas where the road surface has eroded leaving a bowl-shaped depression

Potholes – Varney Road

- Dust: Fine particles that are raised by wind or vehicular traffic, reducing visibility.

Dust – Maine Local Roads Center (2011)

- Cross Section: Loss of crown, inhibiting natural drainage of water from the center to the sides of the road.

Cross Section – Maine Local Roads Center (2011)

- Roadside Drainage: Same as paved roads.

Roadside Drainage – Jim Small Road

While our survey generally followed the RSMS methodology, our survey work did include stopping the vehicle and inspecting the road distresses in more detail. To improve the accuracy of the inventory, at least one distress area for each road segment was observed from outside the vehicle.

In addition, a representative photograph of the survey section was taken for each road segment. The photographs are linked to the Road Segment in the RSMS database.

Survey sites were randomly selected by the surveyor in areas felt to best represent the roadway segment.

Maintenance Status

Over the years, the MaineDOT has provided several methods for conducting a pavement management survey. The RSMS software and methodology is a simplified method that can be implemented by communities, often without technical assistance from a consultant or MaineDOT, if so desired. Other methods generate Pavement Condition Ratings (PCRs) based on the results of the pavement evaluation. The RSMS software does not generate PCRs, rather it computes a "maintenance status" for each road segment. The maintenance status is determined based on the pavement distress type(s) and distress severity and extent as observed in the pavement evaluation. A description of each of the maintenance status

categories is as follows:

- No Maintenance: These roads are in excellent condition and require no maintenance.
- Routine: These roads are in reasonably good condition, and only periodic lower cost repairs are required to maintain their condition. This would include crack sealing, fog sealing, pothole repair, and maintaining gravel shoulders.
- Preventive: These roads are in fair condition and require more expensive repairs designed to minimize further deterioration before it becomes a serious issue. This would include drag shims, thin overlays, and/or improving ditches. It is imperative that these roads receive preventive treatment within 3 to 4 years so they do not decline even further into the Rehabilitate or Reconstruct status categories.
- Rehabilitate: These roads require significant repairs with higher costs, but generally will add many years of life if done correctly. This would include reclaiming the roadway base and re-building the road with new gravel and pavement.
- Reconstruct: These roads have reached the end of their useful life and must be completely rebuilt from the gravel subbase and new pavement. This is generally the most expensive category to complete. This category includes reconstructing the roadway, from the gravel subbase to the surface pavement.

The results of the pavement evaluation and the maintenance status for each town road are shown in the tables in Appendix A. The data are presented in three different tables, including:

- Table 1: Paved Network Inventory – Municipal Road/Section (Alphabetical)
    - Table 1 provides an alphabetical listing of the municipal roads in Casco, including maintenance status.
- Table 2: Paved Network Inventory – Municipal Road/Section (By Treatment)
    - Table 2 organizes the municipal roads in Casco by their maintenance status. Within each maintenance status, the roads are organized alphabetically.
- Table 3: Costed Repair Options – Municipal Road/Section (Alphabetical)
    - Table 3 provides costed repair options for each of the municipal roads/sections in Casco. This Table provides several different treatment options, and their

associated costs, for a roadway segment based on its Maintenance category. Each of the options are individual treatment options for a roadway segment: multiple options *should not* be lumped together when considering the cost to provide a treatment for the roadway. Only one (1) treatment per roadway segment should be selected during budget development.

Data Analysis

The overall maintenance status of the municipal roads in Casco was determined by calculating the total miles of roadway within each maintenance status category. The following table and chart present the maintenance status of the municipal roads in 2020.

Maintenance Status of Municipal Paved Roads

Maintenance Status	2020 Mileage	Percent of Total Mileage
No Maintenance	9.61	37.5%
Routine	4.70	18.4%
Preventive	6.88	26.9%
Rehabilitate	3.20	12.5%
Reconstruct	1.21	4.7%
Total	**25.80**	**100%**

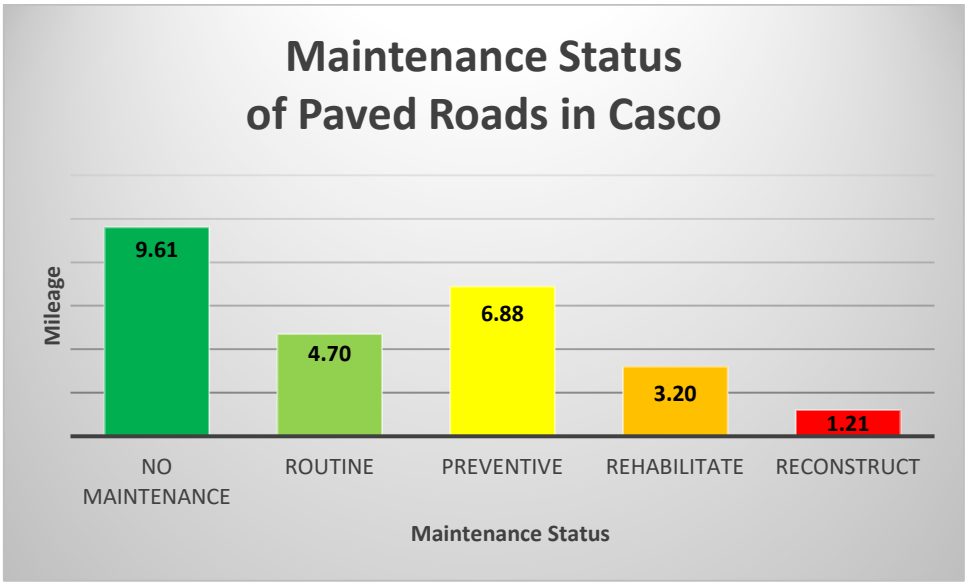


Figure 2 – Maintenance Status of Paved Roads in Casco

Routine & No Maintenance

Approximately **56%** of the Town paved roads are in the Routine or No Maintenance status categories. This is likely due to pavement overlay and/or reconstruction projects that have occurred in recent years. We understand the following roadway sections have received treatment in recent years:

- Cooks Mills Road
- Edwards Road
- Johnson Hill Road
- Libby Road
- Mayberry Hill Road
- Point Sebago Road
- Tenney Hill Road 1 and 4

Preventive

As shown, approximately **27%** of the Town paved roads are currently in the Preventive status category. We recommend these roads receive treatment within 3 to 4 years. Some roads with medium to medium-high traffic that fall within the Preventive status are:

- Leach Hill Road
- Quaker Ridge Road

If these roads do not receive proper treatment within a few years they may deteriorate into the Rehabilitate or Reconstruct status categories, which will result in higher repair costs. See Appendix A for details on the roads included in the various maintenance status categories.

Rehabilitate

As shown, approximately **13%** of the Town paved roads are in the Rehabilitate status category. As stated previously, roads in Rehabilitate condition require significant repairs that often require major funding. However, these repairs will generally increase the roadway lifespan by many years. Such repairs would include reclaiming the roadway base and/or re-building the road with new gravel and pavement. It is our recommendation that the Town address these roadway repairs as the paving budget allows for it. Repairing roads that are in Rehabilitate condition will be less costly than allowing further deterioration of the roadways into the Reconstruct condition.

Reconstruct

Approximately **5%** of the Town paved roads are in the Reconstruct status category. This

is the most costly repair as the roads in the Reconstruct condition require a full-depth reconstruction with new gravel and pavement. As noted previously, the RSMS software does not calculate a PCR value for each roadway segment. PCR values are numerical ratings that allow roads to be ranked according to condition. The output from RSMS does not provide this ability to rank the roads. However, in our opinion, the paved roads in Reconstructive condition in most need of full reconstruction based on assumed traffic volume are:

- New Road
- South Casco Village Road
- Stone Road

Drainage

Drainage issues were observed and noted on many of the Town roads. Specific drainage concerns were added in the notes section of the RSMS database. Drainage is identified as a distress in the RSMS evaluation methodology and is rated in extent and severity for each road section, similar to the other pavement distresses. Given the rural nature of Casco, we recommend open channel ditching with culverts at driveways. Ditches should be excavated and maintained to a depth that matches the road's subgrade and allows any subsurface ground water to drain to the ditches. Ditch embankments should be stabilized with vegetation, erosion control blankets, and riprap. We recommend installing stone check dams along steep ditches that experience erosion. The following roads appeared to be most in need of ditching and drainage improvements:

- Leach Hill Road
- Quaker Ridge Road

There are more roads with poor drainage, however the roads listed above are prioritized with greater importance based on the Town of Casco's priorities.

Maintenance Status of Municipal Gravel Roads

Maintenance Status	2020 Mileage	Percent of Total Mileage
Routine	4.55	94.8%
Reconstruct	0.25	5.2%
Total	**4.80**	**100%**

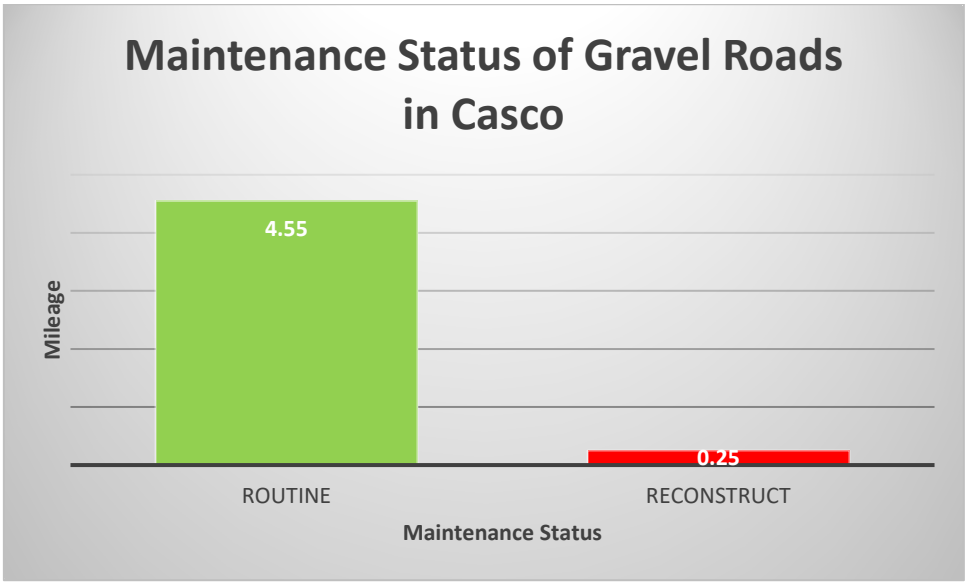


Figure 3 – Maintenance Status of Gravel Roads in Casco

As shown, approximately **95%** of the Town gravel roads are in the Routine maintenance category. Treatments for gravel roads in the Routine category include:

- Adding up to 4" of gravel to the surface.
- Routine Grading, to smooth and reshape the roadway surface
- Spot Grading, to target particular areas of the roadway as needed.

The rating system for gravel roads only considers the extent, and not the severity, of distresses. No Maintenance, Routine, and Reconstruct are the only maintenance status categories for gravel roads. The gravel rating system is more of a general rating system when compared to the pavement rating system.

Jim Small Road is the only gravel road that falls under the Reconstruct maintenance category. Rutting, loose aggregate, low cross section, and poor drainage were all noted on the gravel portion of Jim Small Road. Treatment for gravel roads in the Reconstruct category involves the addition of up to 15" of gravel to the base and surface of a roadway.

More detailed descriptions of treatment options for paved and gravel roads are included in the Treatment Alternatives section in the following pages.

Prioritization of roads to receive treatments ultimately rests with the Town and should be partially based on criteria such as traffic volume and road importance (provides access to town facilities such as schools, emergency facilities, health facilities, and town office, for example). The Town of Casco has stated that Leach Hill Road, Lord Road, and Quaker Ridge Road are the priority roads for the near future. These roads have been prioritized in the 5-Year Improvement Plan described later in the report.

Treatment Alternatives

Multiple treatment options are available to maintain and repair roads in the various maintenance status categories.

We have provided information on benefits, general longevity, and relative cost. As shown, the estimated service life of each alternative can vary significantly and is dependent on multiple factors such as local climate, quality of the construction, and condition of the underlying pavement/gravel and pavement/gravel sub-base, among others. There is no standardized guidance providing information on the longevity of a given treatment with any degree of certainty. The tables below summarize the various treatment alternatives for paved and gravel roads within a given maintenance status category.

Paved Treatment Alternatives

Maintenance Status	Treatment Alternative	Description	Estimated Service Life (1)	Comments
Routine	Patching	This treatment alternative consists of removing and replacing the defective pavement with new pavement matching the depth of the surrounding pavement. Patching can also include filling potholes to the normal road grade.	Varies	Field verify locations.
	Crack Seal	This treatment alternative involves placement of specialized materials (such as rubberized liquid asphalt) into cracks to prevent infiltration of water into the underlying pavement layers.	3 - 8 Years	Field verify locations.
Preventative	Sand Seal	This treatment alternative involves the application of asphalt binder covered with a fine aggregate. This alternative is used to improve the skid resistance of slippery pavements and to seal against air and water intrusion.	1 - 2 Years	Does not improve the overall strength of roadway.
	Chip Seal	This treatment alternative consists of spraying the pavement surface with liquid asphalt and then immediately covering with aggregate and rolling.	5 - 10 Years	Does not improve load-associated cracking, Not recommended for use on high volume roadways.
	Drag Shim (3/4")	This treatment consists of a ¾" shim course of pavement. The shim course is applied to the existing pavement to smooth out any distortion (rutting, small depressions, etc.) prior to the surface course. The shim allows for a more uniform roadway and for a more evenly compacted surface layer, which extends the pavement life and ride quality.	No information found	Cost effective if only used in areas where needed. Locations should be field verified prior to shimming.
	Thin Overlay (3/4 - 1")	This treatment alternative consists of a ¾" - 1" surface course of pavement placed in one lift.	5 - 12 Years	Inspect existing pavement condition prior to overlaying to help avoid reflecting cracks. Consider shimming in areas that meet the "Shim & 1" Overlay" description. Not recommended in areas with alligator cracking.
	Shim & 1" Overlay	This treatment alternative consists of a 3/4" shim course of pavement and a 1" surface course of pavement. The shim course is applied to the existing pavement to smooth out any distortion (rutting, small depressions, etc.) prior to the surface course. The shim allows for a more uniform roadway and for a more evenly compacted surface layer, which extends the pavement life and ride quality. It is listed as a preventative treatment to allow the town to budget for future maintenance, as well as existing needs.	5 - 12 Years	This treatment is the prefered option for Preventaive status as it improves roadway strength, cross slopes, and ride quality.
	Thick (>1") Overlay	This treatment is similar to the Light/ Future overlay, but uses a 1.25 - 2" course of surface pavement to address a roadway build-up that has been further deteriorated, and therefore needs a more structural treatment.	5-12 Years	Shimming may also be recommended to smooth out any distortion in the existing pavement surface.
	Overlay w/ 2" Cold Mix, top w/ 1" HMA	This treatment alternative consists of a 2" overlay of cold mix pavement and surfaced with a 1" overlay of hot mix asphalt. The cold mix asphalt is a blend of coarse and fine aggregate combined with soft emulsified asphalt, typically used for paving low volume rural and secondary roads.	No information found	
	Mill & Fill 1.25"	This treatment grinds down (mills) the existing pavement and then an overlay is placed. This treatment is used where it is necessary to maintain the existing finish grade of the roadway at approximately the same elevation due to adjacent driveways or curbing with limited reveal.	5-12 Years	This treatment is ideal in urban areas where ditches aren't present.
Rehabilitate	Reclaim & Revert to Gravel	A full depth reclamation treatment pulverizes the existing pavement and mixes some of it with the existing base material. The material is then re-graded and compacted.	No information found	
	Shim & 2" Overlay	This treatment is similar to the Shim & 1" Overlay, but uses a 3/4" shim and a 2" course of surface pavement to address a roadway build-up that has been further deteriorated, and therefore needs a more structural treatment.	5-12 Years	Existing gravel depths should be verified prior to paving to insure proper service life.
	Reclaim (6-8" base), 2" Binder, 1.5" Surface HMA	A full depth reclamation treatment pulverizes the existing pavement and mixes some of it with the existing base material. The material is then re-graded and prepared for a 2" base course and 1.5" surface course pavement.	10-15 Years	Pavement depths shall be in accordance with town/state specifications.
	Reclaim (6-8" base), Stabilized, 2" Binder, 1.5" Surface HMA	A full depth reclamation treatment pulverizes the existing pavement and mixes some of it with the existing base material. The material is then re-graded and prepared for a 2" base course and 1.5" surface course pavement.	10-15 Years	Pavement depths shall be in accordance with town/state specifications.
	PM RAP Reclamation	Existing pavement is removed and recycled at a pavement plant. The recycled asphalt pavement (RAP) is then placed on roadway and regraded and compacted.	No information found	
Reconstruct	Reclaim & Revert to Gravel	A full depth reclamation treatment pulverizes the existing pavement and mixes some of it with the existing base material. The material is then re-graded and compacted.	No information found	
	Reconstruct w/ 18" Gravel, 2" Binder, 1" Surface HMA	This treatment is a full reconstruction of the roadway; including the removal of all pavements and gravels. A new layer of gravel is then placed at a depth of 18". Finally a new 2" base course and 1" surface course of pavement are placed. This treatment should be applied on low volume rural and secondary roads.	Up to 20 Years	Gravel and pavement depths shall be in accordance with town/state specifications.
	Reconstruct w/ 24" Gravel, 2" Binder, 2" Surface HMA	This treatment is a full reconstruction of the roadway; including the removal of all pavements and gravels. A new layer of gravel is then placed at a depth of 24". Finally a new 2" base course and 2" surface course of pavement are placed. This treatment should be applied on arterial and collector roads.	Up to 20 Years	Gravel and pavement depths shall be in accordance with town/state specifications.

Notes

(1). Estimated Service Life is highly variable and dependent on many variables, such as climate, quality of construction, existing pavement and subbase conditions, and drainage.

Gravel Treatment Alternatives

Maintenance Status	Treatment Alternative	Description
Routine	Add Gravel (Up to 4")	This treatment consists of adding gravel to the surface up to a depth of 4".
	Routine Grading	This treatment consists of using a grader to smooth the roadway surface, helping to maintain its shape, drivability, and structural integrity.
	Spot Grading/Blading	This treatment consists of targeting particular areas for grading as needed. Blading is also a grading technique used to refinish the roadway surface, which would target areas as needed.
Reconstruct	Add 12" of Gravel to Base and 3" to Surface	This treatment is necessary when a road needs reconstruction of the base as well as the surface. Once the base and surface have been graveled, the road will regain its structural integrity and serviceability.

The RSMS Software computes repair costs for multiple treatment alternatives, based on the maintenance status of a given road segment. The tables in Appendix A provide these cost estimates for each road segment. The cost estimates are based on unit price data (see Appendix C) for each treatment alternative and the area of road to be treated. It is very important to understand, that the unit costs used to generate the total costs are strictly for the pavement and drainage treatments. These costs do not include other repairs such as curbing, culverts, catch basin/manhole repair, other utility improvements, etc. The final cost of a project may vary significantly depending on many factors, such as length of road, width of road, other improvements, etc. Also note that all costs are presented in 2021 dollars and do not account for inflation.

5-Year Roadway Improvement Plans

Gorrill Palmer has prepared two 5-year roadway improvement plan options, as follows:

- Option 1 – $400,000 for the first year, followed by an annual budget of $200,000. This is the current Town budget for capital roadway improvement projects.
- Option 2 – Ascending annual budget. $250,000 in Year 1, followed by a $50,000 increase to the budget each year, concluding with $450,000 in Year 5.

Based on the assessed condition of the road, the total costs to maintain and rehabilitate all the paved roads in the Town of Casco is approximately $3,100,000. As shown, about 18% of the roads are in the rehabilitate or reconstruct category and require a significant expenditure to repair and improve. This is a challenge and will require diligence and substantial additional funding if the Town wants to address these roads.

Option 1 - $400,000 in Year 1, Annual Budget of $200,000 Years 2 – 5

Gorrill Palmer has prepared a 5-Year Roadway Improvement Plan based on the Town of Casco's plan of a $400,000 budget for 2021, followed by an annual budget of $200,000 from 2022 to 2025.

This plan focuses on addressing the roads in the preventive and routine treatment category within the five-year plan to keep these roads from getting worse and becoming more expensive to repair. Leach Hill Road, Lord Road, and Quaker Ridge Road receive treatment based on the Town of Casco's priorities.

This plan was designed to limit the deterioration of roads in the Preventive maintenance category. Lakewood Road receives treatment earlier in the plan compared to the Town priority road of Quaker Ridge Road because of Lakewood Road's current Preventive

condition. In our opinion, if PCR's were assigned to these roads, Lakewood Road would have a worse rating compared to the Preventive segments of Quaker Ridge Road. Therefore, Lakewood Road receives treatment before the segments of Quaker Ridge to prevent the deterioration of Lakewood Road into the Rehabilitate category.

Drainage improvements have been prioritized in conjunction with roadway surface treatments. Proper drainage from the roadway to a ditch or the use of a closed drainage system is vital for the lifespan of a roadway. Effective drainage results in less water seeping under the roadway base and subbase and helps prevent the weakening of the roadway. Cracking and other distresses mentioned above are minimized when water can freely travel off of the roadway surface and into a ditch or closed drainage system.

The 5-year plan, Option 1, is included in Appendix B. It should be noted, this 5-year plan neglects all roads in the No-Maintenance, Rehabilitate, and Reconstruct maintenance categories due to budget constraints. Additionally, all gravel roads except for Lord Road are also neglected in Option 1. Here is a summary of roads addressed in the 5-year plan (Option 1):

- 100% of Routine paved roads
- 100% of Preventive paved roads (and associated ditching)

We have provided a second budget option in the following section that assumes additional funds will be available and addresses all the Routine paved roads and some Rehabilitate paved roads.

Option 2 – Ascending Annual Budget

Gorrill Palmer has prepared a plan based on a more idealized scenario for town roadway maintenance and capital improvements. Option 2 starts with a $250,000 budget in Year 1, and the budget increases by $50,000 each year:

- Year 1 = $250,000
- Year 2 = $300,000
- Year 3 = $350,000
- Year 4 = $400,000
- Year 5 = $450,000

This plan addresses surface and drainage treatments for all paved roads in the Preventive and Routine maintenance categories, as well as 0.86 miles of roads in the Rehabilitate maintenance status. Leach Hill Road, Lord Road, and Quaker Ridge Road all receive treatment based on the Town of Casco's priorities.

The 5-year plan, Option 2, is included in Appendix B. It should be noted, this 5-year plan neglects all roads in the Reconstruct maintenance category due to budget constraints. Additionally, all gravel roads are neglected in Option 2 except for Lord Road. Here is a summary of the roads addressed in the 5-year plan (Option 2):

- 100% of Routine paved Roads (and associated ditching)
- 100% of Preventive paved Roads (and associated ditching)
- 25% of Rehabilitate paved Roads (and associated ditching)

Use of Report

Care should be taken when using this report. Identified roadway conditions should be considered average over the length of each road segment. It is entirely possible that some sections of any given road segment may be in better or worse condition than the average. The roadway treatments identified in this report should not be considered as final design options. Before any project bidding is requested or construction is scheduled: additional site visits should be made, while design plans and specifications should be prepared to clearly identify the desired final product and construction scope of work. Other improvement work may be necessary as well. For instance, the Town may need to include repairs and replacement of catch basins, culverts, or other underground utilities, raising the profile of a road, and safety improvements. All of these will affect the final cost of the construction project.

Another consideration when scheduling the roadway improvements is the impact on neighborhoods. The Town should consider the number of mobilizations required by a paving contractor when planning overlays on local roads to reduce cost. If several roads are in need of treatment in a neighborhood based on the current maintenance status, the Town should review other roads in the neighborhood that may have a similar status to eliminate future work in the neighborhood for the next five years.

In summary, this report is intended to be used as a resource by the Town in developing their annual pavement budget and plan. It is anticipated that some of the roadways included in the annual program may be taken out of the order listed in Gorrill Palmer's improvement plans in Appendix B, based on a more detailed field review by the public works director or hired consultant. Development of the annual program should consider additional factors such as drainage needs, and proximity of the projects to one another to minimize contractor mobilization costs.

Conclusions

The Town of Casco has a significant undertaking to repair their roadway system. Approximately 27% of the Town's local paved roads are currently included in the Preventive maintenance status category. About 18% of the Town roads are in the Rehabilitate/Reconstruct category.

We have prepared 2 different 5-Year Roadway Improvement plans for the Town to consider:

1. Option 1 is based on the Town of Casco's intended 5-year budget forecast, with $400,000 in Year 1 and $200,000 in Years 2 – 5.
2. Option 2 starts with a $250,000 budget in Year 1, and the budget increases by $50,000 each year:
   - Year 1 = $250,000
   - Year 2 = $300,000
   - Year 3 = $350,000
   - Year 4 = $400,000
   - Year 5 = $450,000

Both options prioritize Preventive treatments up front. It is important to treat the Preventive roads early in the 5-year plan to reduce the chances that their condition degrades and ultimately costs more money for the Town in the long run. Similarly, it is also important not to neglect the roads in the Routine and No Maintenance categories either. Many of these roads will require Routine maintenance in the next 5 to 7 years as well, and if this Routine maintenance is not performed, the Town can expect these roads to slip further into the Preventive category. It is a slippery slope and requires continuous diligence and funding to maintain the roads in good condition before the roads require costlier treatment options.

Proper drainage is imperative to maximize the lifespan of a roadway. Water that is not drained away from the roadway surface, base, and subbase will cause damage to the roadway in the forms of cracking, heaving, and potholes. Drainage treatment is therefore prioritized as soon as possible in combination with the Preventive surface treatments to minimize the chances of damage to the roadway following costly surface treatments.

We recommend the Town continue to inventory pavement condition ratings every three years. This will allow for the development of historical pavement condition data which will reveal potential deficiencies with the roadway subgrade or drainage. Additionally, we also recommend that the Town annually update the RSMS database to track the road improvement work that has been completed each year.

GORRILL PALMER

Appendix A
Road Inventory

Appendix A, Table 1 - Paved Network Inventory - Municipal Road/Section (Alphabetical)

Jurisdiction	Road Name	Sec	From	To	Surf	Length	Surface	Drainage
Municipal	Acorn Knl	1	Brown Ave	Dead End	Paved	0.08	No Maint-2	Good-2
Municipal	Birch Terr	1	Dead end	SR 121 (Meadow Rd)	Gravel	0.23	Routine-2	Good-2
Municipal	Bramble Hill Rd	1	Dead end	US 302 (Roosevelt	Gravel	0.12	Routine-2	Good-2
Municipal	Brown Av	1	Quaker Ridge Rd	US 302 (Roosevelt	Paved	0.42	Preventive-2	Poor-2
Municipal	Burgess Rd	1	SR 11 (Poland Spri	SR 11 (Poland Spri	Paved	0.41	Rehabilitate-2	Poor-2
Municipal	Camp Cedar Rd	1	SR 11 (Poland Spri	Juris change	Gravel	0.41	Routine-2	Good-2
Municipal	Circle Dr	1	Dead end	Quaker Ridge Rd	Paved	0.23	Preventive-2	Poor-2
Municipal	Cold Springs Rd	2	Cold Spring Rd	US 302 (Roosevelt	Paved	0.04	Rehabilitate-2	Poor-2
Municipal	Condo Ridge Rd	1	Quaker Ridge Rd	Quaker Ridge Rd	Gravel	0.19	Routine-2	Good-2
Municipal	Cooks Mill Rd	1	SR 11 (Poland Spri	Town Line	Paved	0.3	No Maint-2	Good-2
Municipal	Crescent Ln	1	Dead end	Maturo Dr	Paved	0.11	Preventive-2	Good-2
Municipal	Dadmun Rd	1	Millstream Terr	Cooks Mill Rd	Gravel	0.13	Routine-2	Good-2
Municipal	Edes Falls Rd	2	End of pavement	SR 121 (Meadow Rd)	Paved	0.02	Reconstruct-2	Poor-2
Municipal	Edes Falls Rd	1	Juris change	end of pavement	Gravel	0.29	Routine-2	Good-2
Municipal	Edwards Road	2	UP 21/35/12	Town Line	Paved	0.4	No Maint-2	Poor-2
Municipal	Edwards Road	1	SR11/Poland Spr Rd	UP 21/35/12	Paved	0.49	No Maint-2	Poor-2
Municipal	Fernald Dr	1	Dead end	Tarklin Hill Rd	Paved	0.05	Rehabilitate-2	Poor-2
Municipal	Fountain Hill Rd	2	End of pavement	Juris change	Gravel	0.26	Routine-2	Good-2
Municipal	Fountain Hill Rd	1	SR 121 (Meadow Rd)	End of pavement	Paved	0.1	Preventive-2	Poor-2
Municipal	Glen Dr	1	New Rd	Quaker Ridge Rd	Paved	0.32	Rehabilitate-2	Poor-2
Municipal	Hamms Hill Road	1	US 302 (Roosevelt)	Dead End	Paved	0.234	Rehabilitate-2	Poor-2
Municipal	Heath Rd	2	Trail Rd	Town Line	Paved	0.55	Routine-3	Poor-3
Municipal	Heath Rd	1	Mayberry Hill Rd	Trail Rd	Paved	1.28	Routine-3	Good-3
Municipal	Heather Ln	1	Dead end	Hams Hill Rd	Paved	0.16	Routine-2	Poor-2
Municipal	Hillcrest Dr	1	Dead end	Pine Hill Rd	Paved	0.26	Preventive-2	Good-2
Municipal	Hillside Av	1	US 302 (Roosevelt	Juris change	Paved	0.21	No Maint-2	Good-2
Municipal	Jim Small Rd	2	Juris change	Burgess Rd	Paved	0.3	Rehabilitate-2	Poor-2
Municipal	Jim Small Rd	1	Juris change	Juris change	Gravel	0.25	Reconstruct-2	Good-2
Municipal	Johnson Hill Rd	1	SR 11 (Poland Spri	Town Line	Paved	0.74	No Maint-3	Good-3
Municipal	Kimball Ln	1	Circle Dr	Quaker Ridge Rd	Paved	0.23	Preventive-2	Poor-2
Municipal	Lakewood Rd	1	US 302 (Roosevelt	Juris change	Paved	0.51	Preventive-2	Poor-2
Municipal	Larkspur Ln	1	Dead end	Shawnee View Ln	Paved	0.1	Rehabilitate-2	Poor-2
Municipal	Leach Hill Rd	3	SR 11 (Poland Spri	Pole 508/12	Paved	0.3	No Maint-8	Poor-8
Municipal	Leach Hill Rd	2	Pole 508/12	Town Library	Paved	2.03	Preventive-8	Poor-8
Municipal	Leach Hill Rd	1	SR 121 (Meadow Rd)	Leach Hill Rd	Paved	0.04	No Maint-4	Good-4
Municipal	Libby Rd	2	Libby Rd	Quaker Ridge Rd	Paved	0.75	No Maint-2	Good-2
Municipal	Libby Rd	1	Overlook Ln	Libby Rd	Paved	0.6	No Maint-2	Good-2
Municipal	Lord Rd	1	Juris change	Mayberry Hill Rd	Gravel	0.98	Routine-6	Good-6
Municipal	Maturo Dr	1	Dead end	Pine Hill Rd	Paved	0.37	Rehabilitate-2	Good-2
Municipal	Mayberry Hill Rd	2	Town Line	Heath Rd	Paved	1.31	No Maint-3	Good-3
Municipal	Mayberry Hill Road	2	Lupine Ln	SR 121 (Meadow Rd)	Paved	0.89	No Maint-3	Good-3

Appendix A, Table 1 - Paved Network Inventory - Municipal Road/Section (Alphabetical)

Jurisdiction	Road Name	Sec	From	To	Surf	Length	Surface	Drainage
Municipal	Mayberry Hill Road	1	Heath Road	Lupine Ln	Paved	0.62	No Maint-3	Good-3
Municipal	Millstream Terr	1	Dadmun Rd	Dead end	Gravel	0.12	Routine-2	Good-2
Municipal	N Pine Hill Rd	1	Heath Rd	Juris change	Gravel	0.14	Routine-2	Good-2
Municipal	Nakrem Ln	1	Dead end	Quaker Ridge Rd	Paved	0.13	Rehabilitate-2	Poor-2
Municipal	New Rd	1	Glen Dr	Quaker Ridge Rd	Paved	0.21	Reconstruct-2	Poor-2
Municipal	Pavilion Rd	1	SR 11 (Poland Spri	Spiller Rd	Gravel	0.17	Routine-2	Good-2
Municipal	Pine Hill Rd	1	SR 11 (Poland Spri	Juris change	Paved	0.61	Rehabilitate-2	Good-2
Municipal	Pinkham Ln	1	Dead end	SR 11 (Poland Spri	Gravel	0.2	Routine-2	Good-2
Municipal	Point Sebago Rd	3	Acadia Rd	Lake Shore Dr	Paved	0.4	No Maint-2	Good-2
Municipal	Point Sebago Rd	2	Point Sebago Rd	Point Sebago Rd	Paved	0.27	No Maint-4	Good-4
Municipal	Point Sebago Rd	1	Riggs Rd	US 302 (Roosevelt	Paved	0.63	No Maint-4	Good-4
Municipal	Quaker Ridge Rd	8	UP 043/48	Glen Dr	Paved	0.29	Preventive-6	Poor-6
Municipal	Quaker Ridge Rd	7	Ridge Terrace Dr	UP 043/48	Paved	0.75	Preventive-7	Poor-7
Municipal	Quaker Ridge Rd	6	UP 014/73	US 302 (Roosevelt	Paved	0.45	Routine-7	Good-7
Municipal	Quaker Ridge Rd	5	Glen Dr	UP 014/73	Paved	0.89	Preventive-6	Poor-6
Municipal	Quaker Ridge Rd	4	Farm View Dr	Ridge Terrace Dr	Paved	0.84	Routine-6	Poor-6
Municipal	Quaker Ridge Rd	3	Rollinghill Rd	Farm View Dr	Paved	0.38	Routine-7	Poor-7
Municipal	Quaker Ridge Rd	2	Nakrem Ln	Rollinghill Rd	Paved	0.47	Routine-7	Good-7
Municipal	Quaker Ridge Rd	1	SR 11 (Poland Spri	Nakrem Ln	Paved	0.6	Preventive-7	Poor-7
Municipal	Raymond Cape Rd	1	Town Line	US 302 (Roosevelt	Paved	0.4	Preventive-2	Poor-2
Municipal	Ridge Terrace Dr	1	Dead end	Quaker Ridge Rd	Paved	0.18	Rehabilitate-2	Poor-2
Municipal	Riggs Rd	1	Juris change	Point Sebago Rd	Gravel	0.3	Routine-2	Good-2
Municipal	Ring Landing Rd	2	Surface Chg.	Juris change	Gravel	0.12	Routine-2	Good-2
Municipal	Ring Landing Rd	1	US 302 (Roosevelt	Surface Chg.	Paved	0.19	Rehabilitate-2	Poor-2
Municipal	S Casco Village Rd	2	Quaker Ridge Rd	US 302 (Roosevelt	Paved	0.19	Reconstruct-2	Poor-2
Municipal	S Casco Village Rd	1	US 302 (Roosevelt	Quaker Ridge Rd	Paved	0.13	Routine-2	Poor-2
Municipal	Shawnee View Ln	1	Dead end	Leach Hill Rd	Paved	0.19	Reconstruct-2	Poor-2
Municipal	Sonny Maines Rd	1	SR 121 (Meadow Rd)	Dead end	Paved	0.06	Preventive-2	Poor-2
Municipal	Spiller Road	1	SR11/Poland Spr Rd	Juris change	Paved	0.444	Routine-2	Good-2
Municipal	Stone Rd	1	SR 11 (Poland Spri	Juris change	Paved	0.46	Reconstruct-2	Good-2
Municipal	Tarklin Hill Rd	2	Tarklin Hill Rd	Leach Hill Rd	Paved	0.03	Reconstruct-2	Good-2
Municipal	Tenney Hill Rd	4	UP 11	Galassetti Dr	Paved	0.75	No Maint-3	Good-3
Municipal	Tenney Hill Rd	3	UP 49	SR 11 (Poland Spri	Paved	0.35	No Maint-3	Good-3
Municipal	Tenney Hill Rd	2	Galassetti Dr	UP 49	Paved	0.71	No Maint-3	Good-3
Municipal	Tenney Hill Rd	1	US 302 (Roosevelt	UP 11	Paved	0.47	No Maint-3	Good-3
Municipal	Terrace Ln	1	Dead end	Leach Hill Rd	Gravel	0.15	Routine-2	Good-2
Municipal	Varney Rd	1	US 302 (Roosevelt	Juris change	Gravel	0.25	Routine-2	Good-2
Municipal	W Fountain Hill Rd	1	Juris change	Leach Hill Rd	Gravel	0.2	Routine-2	Good-2
Municipal	Ward Cir	1	Dead end	Point Sebago Rd	Paved	0.11	Reconstruct-2	Poor-2
Municipal	Winslow Rd	1	SR 11 (Poland Spri	SR 11 (Poland Spri	Paved	0.27	Rehabilitate-2	Poor-2

Appendix A, Table 2 - Paved Network Inventory - Municipal Road/Section (By Treatment)

No Maintenance (Very Good Condition)

9.61 MILES

Jurisdiction	Road Name	Sec	From	To	Surface	Length	Surface	Drainage	Notes
Municipal	Acorn Knoll	1	Brown Ave	Dead End	Paved	0.09	No Maint-2	Good-2	
Municipal	Cooks Mill Rd	1	SR 11 (Poland Spri	Town Line	Paved	0.30	No Maint-2	Good-2	Rebuilt
Municipal	Edwards Road	2	UP 21/35/12	Town Line	Paved	0.40	No Maint-2	Poor-2	Rebuilt
Municipal	Edwards Road	1	SR11/Poland Spr Rd	UP 21/35/12	Paved	0.49	No Maint-2	Poor-2	Rebuilt
Municipal	Hillside Av	1	US 302 (Roosevelt	Juris change	Paved	0.21	No Maint-2	Good-2	
Municipal	Johnson Hill Rd	1	SR 11 (Poland Spri	Town Line	Paved	0.74	No Maint-3	Good-3	Rebuilt
Municipal	Leach Hill Rd	3	SR 11 (Poland Spri	Pole 508/12	Paved	0.30	No Maint-4	Poor-4	
Municipal	Leach Hill Rd	1	SR 121 (Meadow Rd)	Leach Hill Rd	Paved	0.04	No Maint-4	Good-4	
Municipal	Libby Rd	2	Libby Rd	Quaker Ridge Rd	Paved	0.75	No Maint-2	Good-2	Rebuilt
Municipal	Libby Rd	1	Overlook Ln	Libby Rd	Paved	0.60	No Maint-2	Good-2	Rebuilt
Municipal	Mayberry Hill Rd	2	Town Line	Heath Rd	Paved	1.31	No Maint-3	Good-3	Resurface
Municipal	Mayberry Hill Road	2	Lupine Ln	SR 121 (Meadow Rd)	Paved	0.89	No Maint-3	Good-3	Resurface
Municipal	Mayberry Hill Road	1	Heath Road	Lupine Ln	Paved	0.62	No Maint-3	Good-3	Resurface
Municipal	Point Sebago Rd	3	Acadia Rd	Lake Shore Dr	Paved	0.40	No Maint-2	Good-2	Rebuilt
Municipal	Point Sebago Rd	2	Point Sebago Rd	Point Sebago Rd	Paved	0.27	No Maint-4	Good-4	Rebuilt
Municipal	Point Sebago Rd	1	Riggs Rd	US 302 (Roosevelt	Paved	0.63	No Maint-4	Good-4	Rebuilt
Municipal	Tenney Hill Rd	4	UP 11	Galassetti Dr	Paved	0.75	No Maint-3	Good-3	Rebuilt
Municipal	Tenney Hill Rd	3	UP 49	SR 11 (Poland Spri	Paved	0.35	No Maint-3	Good-3	Rebuilt
Municipal	Tenney Hill Rd	1	US 302 (Roosevelt	UP 11	Paved	0.47	No Maint-3	Good-3	Rebuilt

Routine (Good Condition) (Treatment = Cracksealing)

9.25 MILES

Jurisdiction	Road Name	Sec	From	To	Surf	Length	Surface	Drainage	Notes
Municipal	Birch Terr	1	Dead end	SR 121 (Meadow Rd)	Gravel	0.23	Routine-2	Good-2	
Municipal	Bramble Hill Rd	1	Dead end	US 302 (Roosevelt	Gravel	0.12	Routine-2	Good-2	
Municipal	Camp Cedar Rd	1	SR 11 (Poland Spri	Juris change	Gravel	0.41	Routine-2	Good-2	
Municipal	Condo Ridge Rd	1	Quaker Ridge Rd	Quaker Ridge Rd	Gravel	0.19	Routine-2	Good-2	
Municipal	Dadmun Rd	1	Millstream Terr	Cooks Mill Rd	Gravel	0.13	Routine-2	Good-2	
Municipal	Edes Falls Rd	1	Juris change	end of pavement	Gravel	0.29	Routine-2	Good-2	
Municipal	Fountain Hill Rd	2	End of pavement	Juris change	Gravel	0.26	Routine-2	Good-2	
Municipal	Heath Rd	2	Trail Rd	Town Line	Paved	0.55	Routine-3	Poor-3	
Municipal	Heath Rd	1	Mayberry Hill Rd	Trail Rd	Paved	1.28	Routine-3	Good-3	
Municipal	Heather Ln	1	Dead end	Hamms Hill Rd	Paved	0.16	Routine-2	Poor-2	
Municipal	Lord Rd	1	Juris change	Mayberry Hill Rd	Gravel	0.98	Routine-2	Good-2	
Municipal	Millstream Terr	1	Dadmun Rd	Dead end	Gravel	0.12	Routine-2	Good-2	
Municipal	N Pine Hill Rd	1	Heath Rd	Juris change	Gravel	0.14	Routine-2	Good-2	
Municipal	Parker Pond Pnes	1	Dead end	SR 121 (Meadow Rd)	Gravel	0.29	Routine-2	Good-2	
Municipal	Pavilion Rd	1	SR 11 (Poland Spri	Spiller Rd	Gravel	0.17	Routine-2	Good-2	
Municipal	Pinkham Ln	1	Dead end	SR 11 (Poland Spri	Gravel	0.20	Routine-2	Good-2	
Municipal	Quaker Ridge Rd	4	Farm View Dr	Ridge Terrace Dr	Paved	0.84	Routine-3	Poor-2	
Municipal	Quaker Ridge Rd	6	UP 014/73	US 302 (Roosevelt	Paved	0.45	Routine-3	Good-3	
Municipal	Quaker Ridge Rd	2	Nakrem Ln	Rollinghill Rd	Paved	0.47	Routine-3	Good-3	
Municipal	Quaker Ridge Rd	3	Rollinghill Rd	Farm View Dr	Paved	0.38	Routine-3	Poor-3	
Municipal	Riggs Rd	1	Juris change	Point Sebago Rd	Gravel	0.30	Routine-2	Good-2	
Municipal	Ring Landing Rd	2	Surface Chg.	Juris change	Gravel	0.12	Routine-2	Good-2	
Municipal	S Casco Village Rd	1	US 302 (Roosevelt	Quaker Ridge Rd	Paved	0.13	Routine-2	Poor-2	
Municipal	Spiller Road	1	SR11/Poland Spr Rd	Juris change	Paved	0.44	Routine-2	Good-2	
Municipal	Terrace Ln	1	Dead end	Leach Hill Rd	Gravel	0.15	Routine-2	Good-2	
Municipal	Varney Rd	1	US 302 (Roosevelt	Juris change	Gravel	0.25	Routine-2	Good-2	
Municipal	W Fountain Hill Rd	1	Juris change	Leach Hill Rd	Gravel	0.20	Routine-2	Good-2	

Preventive (Fair Condition) (Treatment = Shim and Overlay)

6.88 MILES

Jurisdiction	Road Name	Sec	From	To	Surf	Length	Surface	Drainage	Notes
Municipal	Brown Av	1	Quaker Ridge Rd	US 302 (Roosevelt	Paved	0.42	Preventive-2	Poor-2	
Municipal	Circle Dr	1	Dead end	Quaker Ridge Rd	Paved	0.23	Preventive-2	Good-2	
Municipal	Crescent Ln	1	Dead end	Maturo Dr	Paved	0.11	Preventive-2	Good-2	
Municipal	Fountain Hill Rd	1	SR 121 (Meadow Rd)	End of pavement	Paved	0.10	Preventive-2	Poor-2	
Municipal	Hillcrest Dr	1	Dead end	Pine Hill Rd	Paved	0.26	Preventive-2	Good-2	
Municipal	Kimball Ln	1	Circle Dr	Quaker Ridge Rd	Paved	0.23	Preventive-2	Poor-2	
Municipal	Lakewood Rd	1	US 302 (Roosevelt	Juris change	Paved	0.51	Preventive-2	Poor-2	
Municipal	Leach Hill Rd	2	Pole 508/12	Town Library	Paved	2.03	Preventive-4	Poor-4	
Municipal	Quaker Ridge Rd	8	UP 043/48	Glen Dr	Paved	0.29	Preventive-2	Poor-2	
Municipal	Quaker Ridge Rd	5	Glen Dr	UP 014/73	Paved	0.89	Preventive-2	Poor-2	
Municipal	Quaker Ridge Rd	1	SR 11 (Poland Spri	Nakrem Ln	Paved	0.60	Preventive-3	Poor-3	
Municipal	Quaker Ridge Rd	7	Ridge Terrace Dr	UP 043/48	Paved	0.75	Preventive-3	Poor-3	
Municipal	Raymond Cape Rd	1	Town Line	US 302 (Roosevelt	Paved	0.40	Preventive-2	Poor-2	
Municipal	Sonny Maines Rd	1	SR 121 (Meadow Rd)	Dead end	Paved	0.06	Preventive-2	Poor-2	

Rehabilitate (Poor Condition) (Treatment = Reclaim and Repave)

3.20 MILES

Jurisdiction	Road Name	Sec	From	To	Surf	Length	Surface	Drainage	Notes
Municipal	Burgess Rd	1	SR 11 (Poland Spri	SR 11 (Poland Spri	Paved	0.41	Rehabilitate-2	Poor-2	
Municipal	Cold Springs Rd	2	Cold Spring Rd	US 302 (Roosevelt	Paved	0.04	Rehabilitate-2	Poor-2	
Municipal	Fernald Dr	1	Dead end	Tarklin Hill Rd	Paved	0.05	Rehabilitate-2	Poor-2	
Municipal	Glen Dr	1	New Rd	Quaker Ridge Rd	Paved	0.32	Rehabilitate-2	Poor-2	
Municipal	Hamms Hill Road	1	US 302 (Roosevelt)	Dead End	Paved	0.23	Rehabilitate-2	Poor-2	
Municipal	Jim Small Rd	2	Juris change	Burgess Rd	Paved	0.30	Rehabilitate-2	Poor-2	
Municipal	Larkspur Ln	1	Dead end	Shawnee View Ln	Paved	0.10	Rehabilitate-2	Poor-2	
Municipal	Maturo Dr	1	Dead end	Pine Hill Rd	Paved	0.37	Rehabilitate-2	Good-2	
Municipal	Nakrem Ln	1	Dead end	Quaker Ridge Rd	Paved	0.13	Rehabilitate-2	Poor-2	
Municipal	Pine Hill Rd	1	SR 11 (Poland Spri	Juris change	Paved	0.61	Rehabilitate-2	Good-2	
Municipal	Ridge Terrace Dr	1	Dead end	Quaker Ridge Rd	Paved	0.18	Rehabilitate-2	Poor-2	
Municipal	Ring Landing Rd	1	US 302 (Roosevelt	Surface Chg.	Paved	0.19	Rehabilitate-2	Poor-2	
Municipal	Winslow Rd	1	SR 11 (Poland Spri	SR 11 (Poland Spri	Paved	0.27	Rehabilitate-2	Poor-2	

Reconstruct (Very Poor Condition) (Treatment = New Gravel and Pavement)

1.46 MILES

Jurisdiction	Road Name	Sec	From	To	Surf	Length	Surface	Drainage	Notes
Municipal	Jim Small Rd	1	Juris change	Juris change	Gravel	0.25	Reconstruct-2	Good-2	
Municipal	Edes Falls Rd	2	End of pavement	SR 121 (Meadow Rd)	Paved	0.02	Reconstruct-2	Poor-2	
Municipal	New Rd	1	Glen Dr	Quaker Ridge Rd	Paved	0.21	Reconstruct-2	Poor-2	
Municipal	S Casco Village Rd	2	Quaker Ridge Rd	US 302 (Roosevelt	Paved	0.19	Reconstruct-2	Poor-2	
Municipal	Shawnee View Ln	1	Dead end	Leach Hill Rd	Paved	0.19	Reconstruct-2	Poor-2	
Municipal	Stone Rd	1	SR 11 (Poland Spri	Juris change	Paved	0.46	Reconstruct-2	Good-2	
Municipal	Tarklin Hill Rd	2	Tarklin Hill Rd	Leach Hill Rd	Paved	0.03	Reconstruct-2	Good-2	
Municipal	Ward Cir	1	Dead end	Point Sebago Rd	Paved	0.11	Reconstruct-2	Poor-2	

Appendix A, Table 3 - Costed Repair Options - Municipal Road/Section (Alphabetical)

Birch Terr-1 [Gravel] From: Dead end To: SR 121 (Meadow Rd) (Length: 0.23mi., Width: 16.00ft.)

Surface Status: Routine -2	Estimated Cost
Dust control (S)	$ 0
Routine grading (S)	$ 4,318
Spot grading/blading (S)	$ 4,318
Add gravel (up to 4") (S)	$ 6,002
Drainage Status: Good -2	Estimated Cost
Minor ditching (S)	$ 9,200

Bramble Hill Rd-1 [Gravel] From: Dead end To: US 302 (Roosevelt (Length: 0.12mi., Width: 18.00ft.)

Surface Status: Routine -2	Estimated Cost
Dust control (S)	$ 0
Spot grading/blading (S)	$ 2,534
Routine grading (S)	$ 2,534
Add gravel (up to 4") (S)	$ 3,523
Drainage Status: Good -2	Estimated Cost
Minor ditching (S)	$ 4,800

Brown Av-1 [Paved] From: Quaker Ridge Rd To: US 302 (Roosevelt (Length: 0.42mi., Width: 20.00ft.)

Surface Status: Preventive -2	Estimated Cost
Sand seal (S)	$ 13,305
Chip seal (latex modified) (S)	$ 17,740
Thin (3/4 - 1") overlay (S)	$ 33,263
Thick (> 1") overlay (S)	$ 53,221
Shim with 1" overlay (S)	$ 53,221
Overlay w/ 2" cold mix, top w/ 1" HMA (S)	$ 99,789
Mill and Fill 1.25" (S)	$ 110,877
Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 10,080
Ditching (S)	$ 16,800

Burgess Rd-1 [Paved] From: SR 11 (Poland Spri To: SR 11 (Poland Spri (Length: 0.41mi., Width: 19.00ft.)

Surface Status: Rehabilitate-2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 22,621
Shim w/ 2" overlay (S)	$ 90,486
PM RAP reclamation (S)	$ 102,825
Reclaim incl 6-8" base, 2" binder, 1.5" surface (S)	$ 134,815
Reclaim incl 6-8" base, stabilized, 2" binder, 1.5" surface (S)	$ 185,085
Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 9,840
Ditching (S)	$ 16,400

Costed Repair Options

Casco 2020 Copy

Camp Cedar Rd-1 [Gravel] From: SR 11 (Poland Spri To: Juris change (Length: 0.41mi., Width: 18.00ft.)

Surface Status: Routine -2	Estimated Cost
Dust control (S)	$ 0
Spot grading/blading (S)	$ 8,659
Routine grading (S)	$ 8,659
Add gravel (up to 4") (S)	$ 12,036
Drainage Status: Good -2	Estimated Cost
Minor ditching (S)	$ 16,400

Circle Dr-1 [Paved] From: Dead end To: Quaker Ridge Rd (Length: 0.23mi., Width: 20.00ft.)

Surface Status: Preventive -2	Estimated Cost
Sand seal (S)	$ 7,286
Chip seal (latex modified) (S)	$ 9,715
Thin (3/4 - 1") overlay (S)	$ 18,216
Thick (> 1") overlay (S)	$ 29,145
Shim with 1" overlay (S)	$ 29,145
Overlay w/ 2" cold mix, top w/ 1" HMA (S)	$ 54,646
Mill and Fill 1.25" (S)	$ 60,718
Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 5,520
Ditching (S)	$ 9,200

Cold Springs Rd-2 [Paved] From: Cold Spring Rd To: US 302 (Roosevelt (Length: 0.04mi., Width: 18.00ft.)

Surface Status: Rehabilitate-2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 2,091
Shim w/ 2" overlay (S)	$ 8,363
PM RAP reclamation (S)	$ 9,504
Reclaim incl 6-8" base, 2" binder, 1.5" surface (S)	$ 12,460
Reclaim incl 6-8" base, stabilized, 2" binder, 1.5" surface (S)	$ 17,107
Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 960
Ditching (S)	$ 1,600

Condo Ridge Rd-1 [Gravel] From: Quaker Ridge Rd To: Quaker Ridge Rd (Length: 0.19mi., Width: 13.00ft.)

Surface Status: Routine -2	Estimated Cost
Dust control (S)	$ 0
Spot grading/blading (S)	$ 2,898
Routine grading (S)	$ 2,898
Add gravel (up to 4") (S)	$ 4,028
Drainage Status: Good -2	Estimated Cost
Minor ditching (S)	$ 7,600

Costed Repair Options

Casco 2020 Copy

Crescent Ln-1 [Paved] From: Dead end To: Maturo Dr (Length: 0.11mi., Width: 22.00ft.)

Surface Status: Preventive -2	Estimated Cost
Sand seal (S)	$ 3,833
Chip seal (latex modified) (S)	$ 5,111
Thin (3/4 - 1") overlay (S)	$ 9,583
Shim with 1" overlay (S)	$ 15,333
Thick (> 1") overlay (S)	$ 15,333
Overlay w/ 2" cold mix, top w/ 1" HMA (S)	$ 28,749
Mill and Fill 1.25" (S)	$ 31,943

Dadmun Rd-1 [Gravel] From: Millstream Terr To: Cooks Mill Rd (Length: 0.13mi., Width: 20.00ft.)

Surface Status: Routine -2	Estimated Cost
Dust control (S)	$ 0
Spot grading/blading (S)	$ 3,051
Routine grading (S)	$ 3,051
Add gravel (up to 4") (S)	$ 4,240
Drainage Status: Good -2	Estimated Cost
Minor ditching (S)	$ 5,200

Edes Falls Rd-1 [Gravel] From: Juris change To: end of pavement (Length: 0.29mi., Width: 19.00ft.)

Surface Status: Routine -2	Estimated Cost
Dust control (S)	$ 0
Spot grading/blading (S)	$ 6,465
Routine grading (S)	$ 6,465
Add gravel (up to 4") (S)	$ 8,986
Drainage Status: Good -2	Estimated Cost
Minor ditching (S)	$ 11,600

Edes Falls Rd-2 [Paved] From: End of pavement To: SR 121 (Meadow Rd) (Length: 0.02mi., Width: 19.00ft.)

Surface Status: Reconstruct -2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 1,103
Reclaim incl 6-8" base, 2" binder, 1.5" surface (L)	$ 6,576
18" new 9.5mm gravel, 2" binder, 1"surface (S)	$ 13,041
24" new gravel, 2" binder, 2" surface (S)	$ 17,054
Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 480
Ditching (S)	$ 800

Edwards Road-1 [Paved] From: SR11/Poland Spr Rd To: UP 21/35/12 (Length: 0.49mi., Width: 22.00ft.)

Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 11,760
Ditching (S)	$ 19,600

Costed Repair Options

Casco 2020 Copy

Edwards Road-2 [Paved] From: UP 21/35/12 To: Town Line (Length: 0.40mi., Width: 22.00ft.)

Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 9,600
Ditching (S)	$ 16,000

Fernald Dr-1 [Paved] From: Dead end To: Tarklin Hill Rd (Length: 0.05mi., Width: 19.00ft.)

Surface Status: Rehabilitate-2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 2,759
Shim w/ 2" overlay (S)	$ 11,035
PM RAP reclamation (S)	$ 12,540
Reclaim incl 6-8" base, 2" binder, 1.5" surface (S)	$ 16,441
Reclaim incl 6-8" base, stabilized, 2" binder, 1.5" surface (S)	$ 22,571

Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 1,200
Ditching (S)	$ 2,000

Fountain Hill Rd-1 [Paved] From: SR 121 (Meadow Rd) To: End of pavement (Length: 0.10mi., Width:

Surface Status: Preventive -2	Estimated Cost
Sand seal (S)	$ 3,168
Chip seal (latex modified) (S)	$ 4,224
Thin (3/4 - 1") overlay (S)	$ 7,920
Thick (> 1") overlay (S)	$ 12,672
Shim with 1" overlay (S)	$ 12,672
Overlay w/ 2" cold mix, top w/ 1" HMA (S)	$ 23,759
Mill and Fill 1.25" (S)	$ 26,399

Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 2,400
Ditching (S)	$ 4,000

Fountain Hill Rd-2 [Gravel] From: End of pavement To: Juris change (Length: 0.26mi., Width: 24.00ft.)

Surface Status: Routine -2	Estimated Cost
Dust control (S)	$ 0
Spot grading/blading (S)	$ 7,321
Routine grading (S)	$ 7,321
Add gravel (up to 4") (S)	$ 10,177

Drainage Status: Good -2	Estimated Cost
Minor ditching (S)	$ 10,400

Costed Repair Options

Casco 2020 Copy

Glen Dr-1 [Paved] From: New Rd To: Quaker Ridge Rd (Length: 0.32mi., Width: 19.00ft.)

Surface Status: Rehabilitate-2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 17,656
Shim w/ 2" overlay (S)	$ 70,623
PM RAP reclamation (S)	$ 80,254
Reclaim incl 6-8" base, 2" binder, 1.5" surface (S)	$ 105,222
Reclaim incl 6-8" base, stabilized, 2" binder, 1.5" surface (S)	$ 144,457

Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 7,680
Ditching (S)	$ 12,800

Hamms Hill Road-1 [Paved] From: US 302 (Roosevelt) To: Dead End (Length: 0.23mi., Width: 18.00ft.)

Surface Status: Rehabilitate-2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 12,231
Shim w/ 2" overlay (S)	$ 48,925
PM RAP reclamation (S)	$ 55,597
Reclaim incl 6-8" base, 2" binder, 1.5" surface (S)	$ 72,894
Reclaim incl 6-8" base, stabilized, 2" binder, 1.5" surface (S)	$ 100,074

Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 5,616
Ditching (S)	$ 9,360

Heath Rd-1 [Paved] From: Mayberry Hill Rd To: Trail Rd (Length: 1.28mi., Width: 25.00ft.)

Surface Status: Routine -3	Estimated Cost
Crack seal (S)	$ 37,546
Patching (S)	$ 202,746

Heath Rd-2 [Paved] From: Trail Rd To: Town Line (Length: 0.55mi., Width: 22.00ft.)

Surface Status: Routine -3	Estimated Cost
Crack seal (S)	$ 14,197
Patching (S)	$ 76,663

Drainage Status: Poor -3	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 13,200
Ditching (S)	$ 22,000

Heather Ln-1 [Paved] From: Dead end To: Hams Hill Rd (Length: 0.16mi., Width: 19.00ft.)

Surface Status: Routine -2	Estimated Cost
Crack seal (S)	$ 3,567
Patching (S)	$ 19,261

Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 3,840
Ditching (S)	$ 6,400

Costed Repair Options

Casco 2020 Copy

Hillcrest Dr-1 [Paved] From: Dead end To: Pine Hill Rd (Length: 0.26mi., Width: 20.00ft.)

Surface Status: Preventive -2	Estimated Cost
Sand seal (S)	$ 8,237
Chip seal (latex modified) (S)	$ 10,982
Thin (3/4 - 1") overlay (S)	$ 20,591
Thick (> 1") overlay (S)	$ 32,946
Shim with 1" overlay (S)	$ 32,946
Overlay w/ 2" cold mix, top w/ 1" HMA (S)	$ 61,774
Mill and Fill 1.25" (S)	$ 68,638

Jim Small Rd-1 [Gravel] From: Juris change To: Juris change (Length: 0.25mi., Width: 19.00ft.)

Surface Status: Reconstruct -2	Estimated Cost
Add 12" gravel to base, 3" to surface (S)	$ 29,036

Drainage Status: Good -2	Estimated Cost
Minor ditching (S)	$ 10,000

Jim Small Rd-2 [Paved] From: Juris change To: Burgess Rd (Length: 0.30mi., Width: 18.00ft.)

Surface Status: Rehabilitate-2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 15,681
Shim w/ 2" overlay (S)	$ 62,725
PM RAP reclamation (S)	$ 71,278
Reclaim incl 6-8" base, 2" binder, 1.5" surface (S)	$ 93,453
Reclaim incl 6-8" base, stabilized, 2" binder, 1.5" surface (S)	$ 128,300

Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 7,200
Ditching (S)	$ 12,000

Kimball Ln-1 [Paved] From: Circle Dr To: Quaker Ridge Rd (Length: 0.23mi., Width: 18.00ft.)

Surface Status: Preventive -2	Estimated Cost
Sand seal (S)	$ 6,558
Chip seal (latex modified) (S)	$ 8,743
Thin (3/4 - 1") overlay (S)	$ 16,394
Thick (> 1") overlay (S)	$ 26,230
Shim with 1" overlay (S)	$ 26,230
Overlay w/ 2" cold mix, top w/ 1" HMA (S)	$ 49,182
Mill and Fill 1.25" (S)	$ 54,647

Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 5,520
Ditching (S)	$ 9,200

Costed Repair Options

Casco 2020 Copy

Lakewood Rd-1 [Paved] From: US 302 (Roosevelt To: Juris change (Length: 0.51mi., Width: 18.00ft.)

Surface Status: Preventive -2	Estimated Cost
Sand seal (S)	$ 14,541
Chip seal (latex modified) (S)	$ 19,388
Thin (3/4 - 1") overlay (S)	$ 36,352
Shim with 1" overlay (S)	$ 58,163
Thick (> 1") overlay (S)	$ 58,163
Overlay w/ 2" cold mix, top w/ 1" HMA (S)	$ 109,055
Mill and Fill 1.25" (S)	$ 121,173

Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 12,240
Ditching (S)	$ 20,400

Larkspur Ln-1 [Paved] From: Dead end To: Shawnee View Ln (Length: 0.10mi., Width: 19.00ft.)

Surface Status: Rehabilitate-2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 5,517
Shim w/ 2" overlay (S)	$ 22,070
PM RAP reclamation (S)	$ 25,079
Reclaim incl 6-8" base, 2" binder, 1.5" surface (S)	$ 32,882
Reclaim incl 6-8" base, stabilized, 2" binder, 1.5" surface (S)	$ 45,143

Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 2,400
Ditching (S)	$ 4,000

Leach Hill Rd-2 [Paved] From: Pole 508/12 To: Town Library (Length: 2.03mi., Width: 24.00ft.)

Surface Status: Preventive -8	Estimated Cost
Sand seal (S)	$ 77,170
Chip seal (latex modified) (S)	$ 102,894
Thin (3/4 - 1") overlay (S)	$ 192,926
Shim with 1" overlay (S)	$ 308,680
Thick (> 1") overlay (S)	$ 308,680
Overlay w/ 2" cold mix, top w/ 1" HMA (S)	$ 578,777
Mill and Fill 1.25" (S)	$ 643,087

Drainage Status: Poor -8	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 48,720
Ditching (S)	$ 81,200

Leach Hill Rd-3 [Paved] From: SR 11 (Poland Spri To: Pole 508/12 (Length: 0.30mi., Width: 24.00ft.)

Drainage Status: Poor -8	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 7,200
Ditching (S)	$ 12,000

Costed Repair Options

Casco 2020 Copy

Lord Rd-1 [Gravel] From: Juris change To: Mayberry Hill Rd (Length: 0.98mi., Width: 18.00ft.)

Surface Status: Routine -6	Estimated Cost
Dust control (S)	$ 0
Routine grading (S)	$ 20,697
Spot grading/blading (S)	$ 20,697
Add gravel (up to 4") (S)	$ 28,769
Drainage Status: Good -6	Estimated Cost
Minor ditching (S)	$ 39,200

Maturo Dr-1 [Paved] From: Dead end To: Pine Hill Rd (Length: 0.37mi., Width: 22.00ft.)

Surface Status: Rehabilitate-2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 23,638
Shim w/ 2" overlay (S)	$ 94,551
PM RAP reclamation (S)	$ 107,445
Reclaim incl 6-8" base, 2" binder, 1.5" surface (S)	$ 140,872
Reclaim incl 6-8" base, stabilized, 2" binder, 1.5" surface (S)	$ 193,401

Millstream Terr-1 [Gravel] From: Dadmun Rd To: Dead end (Length: 0.12mi., Width: 19.00ft.)

Surface Status: Routine -2	Estimated Cost
Dust control (S)	$ 0
Routine grading (S)	$ 2,675
Spot grading/blading (S)	$ 2,675
Add gravel (up to 4") (S)	$ 3,718
Drainage Status: Good -2	Estimated Cost
Minor ditching (S)	$ 4,800

N Pine Hill Rd-1 [Gravel] From: Heath Rd To: Juris change (Length: 0.14mi., Width: 18.00ft.)

Surface Status: Routine -2	Estimated Cost
Dust control (S)	$ 0
Routine grading (S)	$ 2,957
Spot grading/blading (S)	$ 2,957
Add gravel (up to 4") (S)	$ 4,110
Drainage Status: Good -2	Estimated Cost
Minor ditching (S)	$ 5,600

Nakrem Ln-1 [Paved] From: Dead end To: Quaker Ridge Rd (Length: 0.13mi., Width: 12.00ft.)

Surface Status: Rehabilitate-2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 4,530
Shim w/ 2" overlay (S)	$ 18,120
PM RAP reclamation (S)	$ 20,591
Reclaim incl 6-8" base, 2" binder, 1.5" surface (S)	$ 26,998
Reclaim incl 6-8" base, stabilized, 2" binder, 1.5" surface (S)	$ 37,065
Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 3,120
Ditching (S)	$ 5,200

Costed Repair Options

Casco 2020 Copy

New Rd-1 [Paved] From: Glen Dr To: Quaker Ridge Rd (Length: 0.21mi., Width: 19.00ft.)

Surface Status: Reconstruct -2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 11,587
Reclaim incl 6-8" base, 2" binder, 1.5" surface (L)	$ 69,052
18" new 9.5mm gravel, 2" binder, 1"surface (S)	$ 136,933
24" new gravel, 2" binder, 2" surface (S)	$ 179,066

Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 5,040
Ditching (S)	$ 8,400

Pavilion Rd-1 [Gravel] From: SR 11 (Poland Spri To: Spiller Rd (Length: 0.17mi., Width: 16.00ft.)

Surface Status: Routine -2	Estimated Cost
Dust control (S)	$ 0
Spot grading/blading (S)	$ 3,191
Routine grading (S)	$ 3,191
Add gravel (up to 4") (S)	$ 4,436

Drainage Status: Good -2	Estimated Cost
Minor ditching (S)	$ 6,800

Pine Hill Rd-1 [Paved] From: SR 11 (Poland Spri To: Juris change (Length: 0.61mi., Width: 19.00ft.)

Surface Status: Rehabilitate-2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 33,656
Shim w/ 2" overlay (S)	$ 134,625
PM RAP reclamation (S)	$ 152,984
Reclaim incl 6-8" base, 2" binder, 1.5" surface (S)	$ 200,579
Reclaim incl 6-8" base, stabilized, 2" binder, 1.5" surface (S)	$ 275,371

Pinkham Ln-1 [Gravel] From: Dead end To: SR 11 (Poland Spri (Length: 0.20mi., Width: 16.00ft.)

Surface Status: Routine -2	Estimated Cost
Dust control (S)	$ 0
Spot grading/blading (S)	$ 3,755
Routine grading (S)	$ 3,755
Add gravel (up to 4") (S)	$ 5,219

Drainage Status: Good -2	Estimated Cost
Minor ditching (S)	$ 8,000

Quaker Ridge Rd-1 [Paved] From: SR 11 (Poland Spri To: Nakrem Ln (Length: 0.60mi., Width: 22.00ft.)

Surface Status: Preventive -7	Estimated Cost
Sand seal (S)	$ 20,908
Chip seal (latex modified) (S)	$ 27,878
Thin (3/4 - 1") overlay (S)	$ 52,271
Thick (> 1") overlay (S)	$ 83,633
Shim with 1" overlay (S)	$ 83,633
Overlay w/ 2" cold mix, top w/ 1" HMA (S)	$ 156,811
Mill and Fill 1.25" (S)	$ 174,235

Drainage Status: Poor -7	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 14,400
Ditching (S)	$ 24,000

Costed Repair Options

Casco 2020 Copy

Quaker Ridge Rd-2 [Paved] From: Nakrem Ln To: Rollinghill Rd (Length: 0.47mi., Width: 22.00ft.)

Surface Status: Routine -7	Estimated Cost
Crack seal (S)	$ 12,132
Patching (S)	$ 65,512

Quaker Ridge Rd-3 [Paved] From: Rollinghill Rd To: Farm View Dr (Length: 0.38mi., Width: 22.00ft.)

Surface Status: Routine -7	Estimated Cost
Crack seal (S)	$ 9,809
Patching (S)	$ 52,967

Drainage Status: Poor -7	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 9,120
Ditching (S)	$ 15,200

Quaker Ridge Rd-4 [Paved] From: Farm View Dr To: Ridge Terrace Dr (Length: 0.84mi., Width: 22.00ft.)

Surface Status: Routine -6	Estimated Cost
Crack seal (S)	$ 21,683
Patching (S)	$ 117,086

Drainage Status: Poor -6	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 20,160
Ditching (S)	$ 33,600

Quaker Ridge Rd-5 [Paved] From: Glen Dr To: UP 014/73 (Length: 0.89mi., Width: 22.00ft.)

Surface Status: Preventive -6	Estimated Cost
Sand seal (S)	$ 31,014
Chip seal (latex modified) (S)	$ 41,352
Thin (3/4 - 1") overlay (S)	$ 77,535
Thick (> 1") overlay (S)	$ 124,055
Shim with 1" overlay (S)	$ 124,055
Overlay w/ 2" cold mix, top w/ 1" HMA (S)	$ 232,604
Mill and Fill 1.25" (S)	$ 258,449

Drainage Status: Poor -6	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 21,360
Ditching (S)	$ 35,600

Quaker Ridge Rd-6 [Paved] From: UP 014/73 To: US 302 (Roosevelt (Length: 0.45mi., Width: 22.00ft.)

Surface Status: Routine -7	Estimated Cost
Crack seal (S)	$ 11,616
Patching (S)	$ 62,724

Costed Repair Options

Casco 2020 Copy

Quaker Ridge Rd-7 [Paved] From: Ridge Terrace Dr To: UP 043/48 (Length: 0.75mi., Width: 22.00ft.)

Surface Status: Preventive -7	Estimated Cost
Sand seal (S)	$ 26,135
Chip seal (latex modified) (S)	$ 34,847
Thin (3/4 - 1") overlay (S)	$ 65,338
Thick (> 1") overlay (S)	$ 104,541
Shim with 1" overlay (S)	$ 104,541
Overlay w/ 2" cold mix, top w/ 1" HMA (S)	$ 196,014
Mill and Fill 1.25" (S)	$ 217,794

Drainage Status: Poor -7	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 18,000
Ditching (S)	$ 30,000

Quaker Ridge Rd-8 [Paved] From: UP 043/48 To: Glen Dr (Length: 0.29mi., Width: 22.00ft.)

Surface Status: Preventive -6	Estimated Cost
Sand seal (S)	$ 10,106
Chip seal (latex modified) (S)	$ 13,474
Thin (3/4 - 1") overlay (S)	$ 25,264
Shim with 1" overlay (S)	$ 40,422
Thick (> 1") overlay (S)	$ 40,422
Overlay w/ 2" cold mix, top w/ 1" HMA (S)	$ 75,792
Mill and Fill 1.25" (S)	$ 84,214

Drainage Status: Poor -6	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 6,960
Ditching (S)	$ 11,600

Raymond Cape Rd-1 [Paved] From: Town Line To: US 302 (Roosevelt (Length: 0.40mi., Width: 19.00ft.)

Surface Status: Preventive -2	Estimated Cost
Sand seal (S)	$ 12,038
Chip seal (latex modified) (S)	$ 16,051
Thin (3/4 - 1") overlay (S)	$ 30,095
Shim with 1" overlay (S)	$ 48,152
Thick (> 1") overlay (S)	$ 48,152
Overlay w/ 2" cold mix, top w/ 1" HMA (S)	$ 90,285
Mill and Fill 1.25" (S)	$ 100,317

Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 9,600
Ditching (S)	$ 16,000

Costed Repair Options

Casco 2020 Copy

Ridge Terrace Dr-1 [Paved] From: Dead end To: Quaker Ridge Rd (Length: 0.18mi., Width: 18.00ft.)

Surface Status: Rehabilitate-2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 9,409
Shim w/ 2" overlay (S)	$ 37,635
PM RAP reclamation (S)	$ 42,767
Reclaim incl 6-8" base, 2" binder, 1.5" surface (S)	$ 56,072
Reclaim incl 6-8" base, stabilized, 2" binder, 1.5" surface (S)	$ 76,980

Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 4,320
Ditching (S)	$ 7,200

Riggs Rd-1 [Gravel] From: Juris change To: Point Sebago Rd (Length: 0.30mi., Width: 21.00ft.)

Surface Status: Routine -2	Estimated Cost
Dust control (S)	$ 0
Spot grading/blading (S)	$ 7,392
Routine grading (S)	$ 7,392
Add gravel (up to 4") (S)	$ 10,275

Drainage Status: Good -2	Estimated Cost
Minor ditching (S)	$ 12,000

Ring Landing Rd-1 [Paved] From: US 302 (Roosevelt To: Surface Chg. (Length: 0.19mi., Width: 17.00ft.)

Surface Status: Rehabilitate-2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 9,380
Shim w/ 2" overlay (S)	$ 37,519
PM RAP reclamation (S)	$ 42,635
Reclaim incl 6-8" base, 2" binder, 1.5" surface (S)	$ 55,899
Reclaim incl 6-8" base, stabilized, 2" binder, 1.5" surface (S)	$ 76,743

Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 4,560
Ditching (S)	$ 7,600

Ring Landing Rd-2 [Gravel] From: Surface Chg. To: Juris change (Length: 0.12mi., Width: 20.00ft.)

Surface Status: Routine -2	Estimated Cost
Dust control (S)	$ 0
Spot grading/blading (S)	$ 2,816
Routine grading (S)	$ 2,816
Add gravel (up to 4") (S)	$ 3,914

Drainage Status: Good -2	Estimated Cost
Minor ditching (S)	$ 4,800

Costed Repair Options

Casco 2020 Copy

S Casco Village Rd-1 [Paved] From: US 302 (Roosevelt To: Quaker Ridge Rd (Length: 0.13mi., Width:

Surface Status: Routine -2	Estimated Cost
Crack seal (S)	$ 2,746
Patching (S)	$ 14,826
Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 3,120
Ditching (S)	$ 5,200

S Casco Village Rd-2 [Paved] From: Quaker Ridge Rd To: US 302 (Roosevelt (Length: 0.19mi., Width:

Surface Status: Reconstruct -2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 9,931
Reclaim incl 6-8" base, 2" binder, 1.5" surface (L)	$ 59,187
18" new 9.5mm gravel, 2" binder, 1"surface (S)	$ 117,371
24" new gravel, 2" binder, 2" surface (S)	$ 153,485
Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 4,560
Ditching (S)	$ 7,600

Shawnee View Ln-1 [Paved] From: Dead end To: Leach Hill Rd (Length: 0.19mi., Width: 18.00ft.)

Surface Status: Reconstruct -2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 9,931
Reclaim incl 6-8" base, 2" binder, 1.5" surface (L)	$ 59,187
18" new 9.5mm gravel, 2" binder, 1"surface (S)	$ 117,371
24" new gravel, 2" binder, 2" surface (S)	$ 153,485
Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 4,560
Ditching (S)	$ 7,600

Sonny Maines Rd-1 [Paved] From: SR 121 (Meadow Rd) To: Dead end (Length: 0.06mi., Width: 26.00ft.)

Surface Status: Preventive -2	Estimated Cost
Sand seal (S)	$ 2,471
Chip seal (latex modified) (S)	$ 3,295
Thin (3/4 - 1") overlay (S)	$ 6,177
Thick (> 1") overlay (S)	$ 9,884
Shim with 1" overlay (S)	$ 9,884
Overlay w/ 2" cold mix, top w/ 1" HMA (S)	$ 18,532
Mill and Fill 1.25" (S)	$ 20,591
Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 1,440
Ditching (S)	$ 2,400

Spiller Road-1 [Paved] From: SR11/Poland Spr Rd To: Juris change (Length: 0.44mi., Width: 18.00ft.)

Surface Status: Routine -2	Estimated Cost
Crack seal (S)	$ 9,377
Patching (S)	$ 50,636

Costed Repair Options

Casco 2020 Copy

Stone Rd-1 [Paved] From: SR 11 (Poland Spri To: Juris change (Length: 0.46mi., Width: 13.00ft.)

Surface Status: Reconstruct -2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 17,365
Reclaim incl 6-8" base, 2" binder, 1.5" surface (L)	$ 103,491
18" new 9.5mm gravel, 2" binder, 1"surface (S)	$ 205,228
24" new gravel, 2" binder, 2" surface (S)	$ 268,375

Tarklin Hill Rd-2 [Paved] From: Tarklin Hill Rd To: Leach Hill Rd (Length: 0.03mi., Width: 19.00ft.)

Surface Status: Reconstruct -2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 1,655
Reclaim incl 6-8" base, 2" binder, 1.5" surface (L)	$ 9,865
18" new 9.5mm gravel, 2" binder, 1"surface (S)	$ 19,562
24" new gravel, 2" binder, 2" surface (S)	$ 25,581

Terrace Ln-1 [Gravel] From: Dead end To: Leach Hill Rd (Length: 0.15mi., Width: 18.00ft.)

Surface Status: Routine -2	Estimated Cost
Dust control (S)	$ 0
Spot grading/blading (S)	$ 3,168
Routine grading (S)	$ 3,168
Add gravel (up to 4") (S)	$ 4,403
Drainage Status: Good -2	Estimated Cost
Minor ditching (S)	$ 6,000

Varney Rd-1 [Gravel] From: US 302 (Roosevelt To: Juris change (Length: 0.25mi., Width: 18.00ft.)

Surface Status: Routine -2	Estimated Cost
Dust control (S)	$ 0
Routine grading (S)	$ 5,280
Spot grading/blading (S)	$ 5,280
Add gravel (up to 4") (S)	$ 7,339
Drainage Status: Good -2	Estimated Cost
Minor ditching (S)	$ 10,000

W Fountain Hill Rd-1 [Gravel] From: Juris change To: Leach Hill Rd (Length: 0.20mi., Width: 18.00ft.)

Surface Status: Routine -2	Estimated Cost
Dust control (S)	$ 0
Spot grading/blading (S)	$ 4,224
Routine grading (S)	$ 4,224
Add gravel (up to 4") (S)	$ 5,871
Drainage Status: Good -2	Estimated Cost
Minor ditching (S)	$ 8,000

Costed Repair Options

Casco 2020 Copy

Ward Cir-1 [Paved] From: Dead end To: Point Sebago Rd (Length: 0.11mi., Width: 19.00ft.)

Surface Status: Reconstruct -2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 6,069
Reclaim incl 6-8" base, 2" binder, 1.5" surface (L)	$ 36,170
18" new 9.5mm gravel, 2" binder, 1"surface (S)	$ 71,727
24" new gravel, 2" binder, 2" surface (S)	$ 93,797

Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 2,640
Ditching (S)	$ 4,400

Winslow Rd-1 [Paved] From: SR 11 (Poland Spri To: SR 11 (Poland Spri (Length: 0.27mi., Width: 15.00ft.)

Surface Status: Rehabilitate-2	Estimated Cost
Reclaim pavement, revert to gravel (S)	$ 11,761
Shim w/ 2" overlay (S)	$ 47,043
PM RAP reclamation (S)	$ 53,459
Reclaim incl 6-8" base, 2" binder, 1.5" surface (S)	$ 70,090
Reclaim incl 6-8" base, stabilized, 2" binder, 1.5" surface (S)	$ 96,225

Drainage Status: Poor -2	Estimated Cost
Replace/New culverts (S)	$ 0
Grade shoulders (S)	$ 6,480
Ditching (S)	$ 10,800

Appendix B
5-Year Roadway Improvement Plans

5 Year Roadway Improvement Plan

Option 1 - $400,000 in Year 1, $200,000 in Years 2-5

2021 Road/Section Name	#	From	To	Length	Recommended Repair		Budget
Capital Improvements							
Leach Hill Rd	2	Pole 508/12	Town Library	2.03	Shim with 1" overlay	$	308,680
Quaker Ridge Rd	1	SR 11 (Poland Spri	Nakrem Ln	0.60	Shim with 1" overlay	$	83,633
Spiller Road	1	SR11/Poland Spr Rd	Juris change	0.44	Crack seal	$	9,377
Total						**$**	**401,690**

5 Year Roadway Improvement Plan
Option 1 - $400,000 in Year 1, $200,000 in Years 2-5

2022

Road/Section Name	#	From	To	Length	Recommended Repair	Budget
Capital Improvements						
Lord Rd	1	Juris change	Mayberry Hill Rd	0.98	Add gravel (up to 4")	$ 28,769
Lord Rd	1	Juris change	Mayberry Hill Rd	0.98	Routine grading	$ 20,697
Quaker Ridge Rd	7	Ridge Terrace Dr	UP 043/48	0.75	Shim with 1" overlay	$ 104,541
Quaker Ridge Rd	8	UP 043/48	Glen Dr	0.29	Shim with 1" overlay	$ 40,422
Total						**$ 194,429**

5 Year Roadway Improvement Plan
Option 1 - $400,000 in Year 1, $200,000 in Years 2-5

2023

Road/Section Name	#	From	To	Length	Recommended Repair	Budget
Capital Improvements						
Circle Dr	1	Dead end	Quaker Ridge Rd	0.23	Shim with 1" overlay	$ 29,145
Kimball Ln	1	Circle Dr	Quaker Ridge Rd	0.23	Shim with 1" overlay	$ 26,230
Quaker Ridge Rd	5	Glen Dr	UP 014/73	0.89	Shim with 1" overlay	$ 124,055
Quaker Ridge Rd	4	Farm View Dr	Ridge Terrace Dr	0.84	Crack seal	$ 20,697
Total						**$ 200,127**

5 Year Roadway Improvement Plan
Option 1 - $400,000 in Year 1, $200,000 in Years 2-5

2024

Road/Section Name	#	From	To	Length	Recommended Repair	Budget
Capital Improvements						
Brown Av	1	Quaker Ridge Rd	US 302 (Roosevelt	0.42	Shim with 1" overlay	$ 53,221
Fountain Hill Rd	1	SR 121 (Meadow Rd)	End of pavement	0.10	Shim with 1" overlay	$ 12,672
Heath Rd	1	Mayberry Hill Rd	Trail Rd	1.28	Crack seal	$ 37,546
Heath Rd	2	Trail Rd	Town Line	0.55	Crack seal	$ 14,197
Quaker Ridge Rd	2	Nakrem Ln	Rollinghill Rd	0.47	Crack seal	$ 12,132
Quaker Ridge Rd	3	Rollinghill Rd	Farm View Dr	0.38	Crack seal	$ 9,809
Quaker Ridge Rd	6	UP 014/73	US 302 (Roosevelt	0.45	Crack seal	$ 11,616
Raymond Cape Rd	1	Town Line	US 302 (Roosevelt	0.40	Shim with 1" overlay	$ 48,152
Total						**$ 199,345**

5 Year Roadway Improvement Plan
Option 1 - $400,000 in Year 1, $200,000 in Years 2-5

2025

Road/Section Name	#	From	To	Length	Recommended Repair	Budget
Capital Improvements						
Crescent Ln	1	Dead end	Maturo Dr	0.11	Crack seal	$ 2,839
Heather Ln	1	Dead end	Hams Hill Rd	0.16	Crack seal	$ 3,567
Hillcrest Dr	1	Dead end	Pine Hill Rd	0.26	Shim with 1" overlay	$ 32,946
Lakewood Rd	1	US 302 (Roosevelt	Juris change	0.51	Shim with 1" overlay	$ 58,163
S Casco Village Rd	1	US 302 (Roosevelt	Quaker Ridge Rd	0.13	Crack seal	$ 2,746
Sonny Maines Rd	1	SR 121 (Meadow Rd)	Dead end	0.06	Thick (> 1") overlay	$ 9,884
						$ 110,145
Maintenance						
Leach Hill Rd	1	SR 11 (Poland Spri	Pole 508/12	0.30	Ditching	$ 12,000
Leach Hill Rd	2	Pole 508/12	Town Library	2.03	Ditching	$ 81,200
						$ 93,200
Total						**$ 203,345**

5 Year Roadway Improvement Plan
Option 2 - Ascending Annual Budget

2021 Road/Section Name	#	From	To	Length	Recommended Repair	Budget
Capital Improvements						
Lakewood Rd	1	US 302 (Roosevelt	Juris change	0.51	Shim with 1" overlay	$ 58,163
Quaker Ridge Rd	1	SR 11 (Poland Spri	Nakrem Ln	0.60	Shim with 1" overlay	$ 83,633
Quaker Ridge Rd	6	UP 014/73	US 302 (Roosevelt	0.45	Crack seal	$ 11,616
						$ 153,412
Maintenance						
Heather Ln	1	Dead end	Hams Hill Rd	0.16	Ditching	$ 6,400
Lakewood Rd	1	US 302 (Roosevelt	Juris change	0.51	Ditching	$ 20,400
Quaker Ridge Rd	1	SR 11 (Poland Spri	Nakrem Ln	0.60	Ditching	$ 24,000
Quaker Ridge Rd	5	Glen Dr	UP 014/73	0.89	Ditching	$ 35,600
Quaker Ridge Rd	8	UP 043/48	Glen Dr	0.29	Ditching	$ 11,600
						$ 98,000
Total						**$ 251,412**

5 Year Roadway Improvement Plan
Option 2 - Ascending Annual Budget

2022

Road/Section Name	#	From	To	Length	Recommended Repair	Budget
Capital Improvements						
Heather Ln	1	Dead end	Hams Hill Rd	0.16	Crack seal	$ 3,567
Quaker Ridge Rd	5	Glen Dr	UP 014/73	0.89	Shim with 1" overlay	$ 124,055
Quaker Ridge Rd	8	UP 043/48	Glen Dr	0.29	Shim with 1" overlay	$ 40,422
Quaker Ridge Rd	3	Rollinghill Rd	Farm View Dr	0.38	Crack seal	$ 9,809
Quaker Ridge Rd	4	Farm View Dr	Ridge Terrace Dr	0.84	Crack seal	$ 21,683
						$ 199,536
Maintenance						
Lord Road	1	Mayberry Hill Rd	Juris Change	0.38	Routine Grading	$ 20,697
Quaker Ridge Rd	3	Rollinghill Rd	Farm View Dr	0.38	Ditching	$ 15,200
Quaker Ridge Rd	7	Ridge Terrace Dr	UP 043/48	0.75	Ditching	$ 30,000
Quaker Ridge Rd	4	Farm View Dr	Ridge Terrace Dr	0.84	Ditching	$ 33,600
						$ 99,497
Total						**$ 299,033**

5 Year Roadway Improvement Plan
Option 2 - Ascending Annual Budget

2023

Road/Section Name	#	From	To	Length	Recommended Repair	Budget
Capital Improvements						
Brown Av	1	Quaker Ridge Rd	US 302 (Roosevelt	0.42	Shim with 1" overlay	$ 53,221
Circle Dr	1	Dead end	Quaker Ridge Rd	0.23	Shim with 1" overlay	$ 29,145
Heath Rd	1	Mayberry Hill Rd	Trail Rd	1.28	Crack seal	$ 37,546
Heath Rd	2	Trail Rd	Town Line	0.55	Crack seal	$ 14,197
Kimball Ln	1	Circle Dr	Quaker Ridge Rd	0.23	Shim with 1" overlay	$ 26,230
Quaker Ridge Rd	7	Ridge Terrace Dr	UP 043/48	0.75	Shim with 1" overlay	$ 104,541
Quaker Ridge Rd	2	Nakrem Ln	Rollinghill Rd	0.47	Crack seal	$ 12,132
S Casco Village Rd	1	US 302 (Roosevelt	Quaker Ridge Rd	0.13	Crack seal	$ 2,746
Spiller Road	1	SR11/Poland Spr Rd	Juris change	0.44	Crack seal	$ 9,377
						$ 289,135
Maintenance						
Brown Av	1	Quaker Ridge Rd	US 302 (Roosevelt	0.42	Ditching	$ 16,800
Circle Dr	1	Dead end	Quaker Ridge Rd	0.23	Ditching	$ 9,200
Heath Rd	2	Trail Rd	Town Line	0.55	Ditching	$ 22,000
Kimball Ln	1	Circle Dr	Quaker Ridge Rd	0.23	Ditching	$ 9,200
S Casco Village Rd	1	US 302 (Roosevelt	Quaker Ridge Rd	0.13	Ditching	$ 5,200
						$ 62,400
Total						**$ 351,535**

5 Year Roadway Improvement Plan
Option 2 - Ascending Annual Budget

2024

Road/Section Name	#	From	To	Length	Recommended Repair	Budget
Capital Improvements						
Leach Hill Rd	2	Pole 508/12	Town Library	2.03	Shim with 1" overlay	$ 308,680
						$ 308,680
Maintenance						
Leach Hill Rd	2	Pole 508/12	Town Library	2.03	Ditching	$ 81,200
Leach Hill Rd	3	RT 11	Pole 508/12	0.30	Ditching	$ 12,000
						$ 93,200
Total						**$ 401,880**

5 Year Roadway Improvement Plan
Option 2 - Ascending Annual Budget

2025

Road/Section Name	#	From	To	Length	Recommended Repair	Budget
Capital Improvements						
Burgess Rd	1	SR 11 (Poland Spri	SR 11 (Poland Spri	0.41	Reclaim incl 6-8" base, 2" binder, 1.5" surface	$ 134,815
Crescent Ln	1	Dead end	Maturo Dr	0.11	Shim with 1" overlay	$ 15,333
Fernald Dr	1	Dead end	Tarklin Hill Rd	0.05	Reclaim incl 6-8" base, 2" binder, 1.5" surface	$ 16,441
Fountain Hill Rd	1	SR 121 (Meadow Rd)	End of pavement	0.10	Shim with 1" overlay	$ 12,672
Hillcrest Dr	1	Dead end	Pine Hill Rd	0.26	Shim with 1" overlay	$ 32,946
Jim Small Rd	2	Juris change	Burgess Rd	0.30	Reclaim incl 6-8" base, 2" binder, 1.5" surface	$ 93,453
Larkspur Ln	1	Dead end	Shawnee View Ln	0.10	Reclaim incl 6-8" base, 2" binder, 1.5" surface	$ 32,882
Raymond Cape Rd	1	Town Line	US 302 (Roosevelt	0.40	Shim with 1" overlay	$ 48,152
Sonny Maines Rd	1	SR 121 (Meadow Rd)	Dead end	0.06	Thick (> 1") overlay	$ 9,884
						$ 396,578
Maintenance						
Burgess Rd	1	SR 11 (Poland Spri	SR 11 (Poland Spri	0.41	Ditching	$ 16,400
Fernald Dr	1	Dead end	Tarklin Hill Rd	0.05	Ditching	$ 2,000
Fountain Hill Rd	1	SR 121 (Meadow Rd)	End of pavement	0.10	Ditching	$ 4,000
Jim Small Rd	2	Juris change	Burgess Rd	0.30	Ditching	$ 12,000
Larkspur Ln	1	Dead end	Shawnee View Ln	0.10	Ditching	$ 4,000
Raymond Cape Rd	1	Town Line	US 302 (Roosevelt	0.40	Ditching	$ 16,000
Sonny Maines Rd	1	SR 121 (Meadow Rd)	Dead end	0.06	Ditching	$ 2,400
						$ 56,800
Total						**$ 453,378**

Appendix C
Road Repair Unit Prices

Road Repair Unit Prices

	Description	Unit	Proposed Unit Price
Routine	Patching	S.Y.	$ 10.80
	Crack Seal	S.Y.	$ 2.00
Preventive	Sand Seal	S.Y.	$ 2.70
	Chip Seal (Latex Modified)	S.Y.	$ 3.60
	Drag Shim (3/4")	S.Y.	$ 5.13
	Thin Overlay (3/4 - 1")	S.Y.	$ 6.75
	Shim & 1" Overlay	S.Y.	$ 10.80
	Thick (>1") Overlay	S.Y.	$ 10.80
	Overlay w/ 2" Cold Mix, top w/ 1" HMA	S.Y.	$ 20.25
	Mill & Fill 1.25"	S.Y.	$ 22.50
Rehabilitate	Reclaim & Revert to Gravel	S.Y.	$ 4.95
	Shim & 2" Overlay	S.Y.	$ 19.80
	Reclaim (6-8" base), 2" Binder, 1.5" Surface HMA	S.Y.	$ 29.50
	Reclaim (6-8" base), Stabilized, 2" Binder, 1.5" Surface HMA	S.Y.	$ 40.50
	PM RAP Reclamation	S.Y.	$ 22.50
Reconstruct	Reclaim & Revert to Gravel	S.Y.	$ 4.95
	18" Gravel, 2" Binder, 1" Surface HMA	S.Y.	$ 58.50
	24" Gravel, 2" Binder, 2" Surface HMA	S.Y.	$ 76.50
Drainage	Ditching	Mile	$ 40,000.00
	Grade Shoulders	Mile	$ 24,000.00
	Replace/New Culverts	EA	$ 1,800.00

Gravel Repair Unit Prices

	Description			
Routine	Add Gravel (up to 4")	S.Y.	$	2.78
	Routine Grading	S.Y.	$	2.00
	Spot Grading/Blading	S.Y.	$	2.00
Reconstruct	Add 12" gravel to base and 3" to surface	S.Y.	$	10.42
Drainage	Minor Ditching	Mile	$	40,000.00
	Major Ditching			
	Grade Shoulders	Mile	$	24,000.00

Appendix D
Road Condition Survey Sheets

Paved Road Survey Form

Road Name: _____
Section ID: _____
From Road: _____
To Road: _____
From Milepost: _____ To Milepost: _____
Width (ft.): _____
Shoulder Width (if paved): _____
Importance (1-5) : _____
Traffic (1-5): _____

Alligator Cracking

Severity \ Extent	<10%	10-30%	>30%
none	low	med	high
low			
med			
high			

Long/Tran Cracking

Severity \ Extent	<10%	10-30%	>30%
none	low	med	high
low			
med			
high			

Edge Cracking

Severity \ Extent	<10%	10-30%	>30%
none	low	med	high
low			
med			
high			

Patches/Potholes

Severity \ Extent	<10%	10-30%	>30%
none	low	med	high
low			
med			
high			

Roughness

Severity \ Extent	<10%	10-30%	>30%
none	low	med	high
low			
med			
high			

Rutting

Severity \ Extent	<10%	10-30%	>30%
none	low	med	high
low			
med			
high			

Roadside Drainage

Severity \ Extent	<10%	10-30%	>30%
none	low	med	high
low			
med			
high			

Gravel Road Survey Form

Road Name: _____
Section ID: _____
From Road: _____
To Road: _____
From Milepost: _____ To Milepost: _____
Width (ft.): _____ (include shoulders)
Importance (1-5) : ____ (1=low; 5=high)
Traffic (1-5): ____ (1=low; 5=high)

Notes:

Rock/Clay

Extent

	<10%	10-30%	>30%
none	low	med	high

Rutting

Extent

	<10%	10-30%	>30%
none	low	med	high

Loose Aggregate

Extent

	<10%	10-30%	>30%
none	low	med	high

Corrugations

Extent

	<10%	10-30%	>30%
none	low	med	high

Potholes

Extent

	<10%	10-30%	>30%
none	low	med	high

Dust

Extent

	<10%	10-30%	>30%
none	low	med	high

Cross Section

Extent

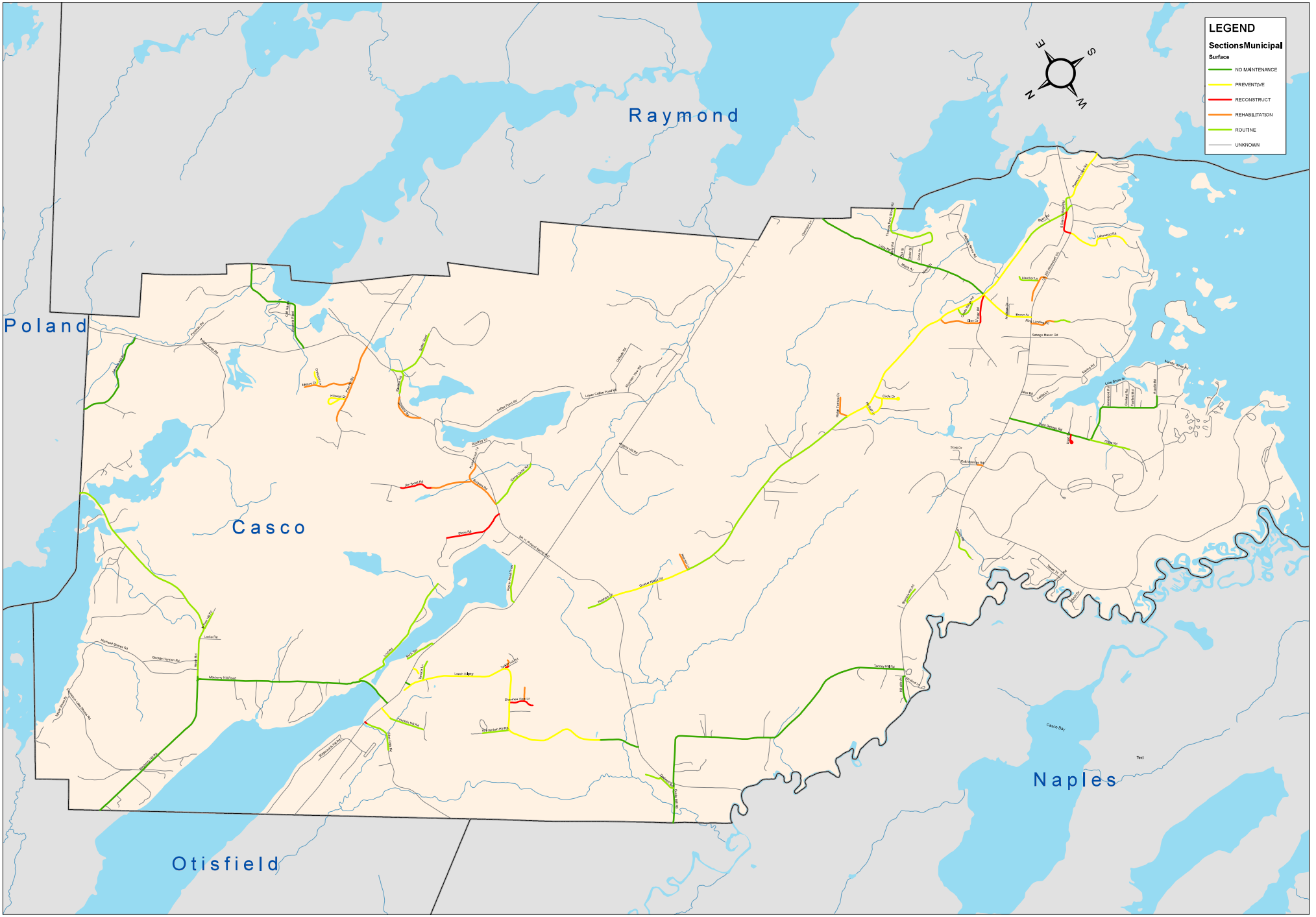
	<10%	10-30%	>30%
none	low	med	high

Roadside Drainage

Extent

	<10%	10-30%	>30%
none	low	med	high

Appendix E
Roadway Condition Map



PAVEMENT CONDITIONS MAP
CASCO, MAINE

JN: 3769
DATE: JANUARY 2021
FILE: 3769_basemap.mxd

0 0.25 0.5 1 Miles

GORRILL PALMER
Relationships. Responsiveness. Results.
www.gorrillpalmer.com
207.772.2515

Appendix
E