

## Introduction

The purpose of this Gravel Roads Plan is to provide a meaningful guide to the restoration and maintenance of gravel roads, the largest category of our most valuable asset, our network of town roads. The designation of every gravel road in town as “Scenic” under RSA 231:158, by Town Meeting, speaks to the appeal of our gravel roads to our residents. It is the Selectboard’s current assessment that these gravel roads need a systematic and consistent maintenance plan. This same desire was expressed by voters at the 2019 Town Meeting, which tasked the Selectboard to come up with a plan to fix these roads. To that end the Selectboard’s goal has been the creation of an annual maintenance schedule that will assure attention to all of the Town’s gravel roads in a scheduled manner. It is important to note that our recent experience with extreme weather events, and the frequency and severity of storms in every season, suggests that best laid plans can easily require significant adjustment due to unanticipated weather phenomena.

Our concern about our roads is not new. The Town has managed, as best it could, the maintenance of our roads as emergencies warranted. Past practice has been one of crisis management; when a culvert washes out or fails, a new one is installed; when mud holes emerge, stone is deposited; when roads are washed away, new ditches are built and repairs are made; when bridges are condemned, they are closed. We have experimented with drainage fabric and new road surface materials. Recent Master Plans and Hazard Mitigation Plans have also called for systematic, sustained maintenance with targeted roads in mind. The town has tried to manage this critical infrastructure as best it could afford to do so. All the while, however, and over time, conditions have deteriorated.

Our goal is to establish a new practice in the form of a systematic five-year plan to ensure that every gravel road will receive some attention, similar to the ten-year paved road plan. We will not be able to bring the twenty miles of road we have up to optimum standard in one five-year cycle. We will need to establish priorities for attention: priorities which may include a variety of factors including the number of homes on the road, volume of traffic, school bus routes, hazard mitigation planning requirements, hazards of the road for both the travelling public, and those who maintain the road, and, to the Town’s equipment, as well as Master Plan requirements, etc. We cannot schedule damage wrought by beavers, an annual and frequent problem. Scenic vegetation during the summer and fall becomes a hazard for vehicles and equipment when glazed with ice and snow and weighed down by frequent rainfall. Similarly, we’ll need to conduct regular trimming to protect and provide for public safety in the traveled way on our roads, something which the town is required to do by RSA. In addition, requirements of FEMA and other agencies designed to provide relief when disaster strikes will also drive priorities. For example, in 2018, Dublin lost an entire road in a washout after a heavy summer storm. Restoration cost an estimated \$225,000. Such fiscal crises cannot be managed alone. If we expect to have access to emergency funding, we will need to conform to FEMA standards for appropriate management and regular maintenance, as well as accurate record keeping of the work we’ve done and the investments we’ve made in our infrastructure. We need to pursue regular storm water management practices and assure ditching and culvert work is up to standards. Part of this includes education of property owners about their obligations around driveway culverts and maintenance.

The benefits of all this are noteworthy. Having concrete plans for all phases of gravel road management means having tools for more accurate budgeting, allocation of time and resources, and management of this asset. This will help our DPW in establishing priorities and slowly creating improvements across town. Further, we will be better prepared to access federal funding of emergency events and, through Hazard Mitigation work, hopefully reduce the impact of events when they, most assuredly, do occur. Though the initial steps toward a well maintained system will be difficult, the result of this work should emerge in more manageable efforts on the part of the Town to provide the transportation system we seek. We face a big task, for all involved.

## **Gravel Roads Plan 2020**

The goal of the Town of Greenfield Gravel Road Plan is to create, at the most reasonable and manageable cost, a plan to maintain public unpaved roads to assure public access and safety, emergency access, and public access in general to the Town in all seasons and conditions. The plan will cycle every five years. The plan incorporates a number of reference materials, publications, and local ordinances.

### **Reference Materials**

Town of Greenfield references include:

- Town of Greenfield Driveway Regulations – Adopted May 2005 and revised September 2008
- Department of Public Works Snow and Ice Removal policy – Adopted October 2003
- Scenic Roads RSA 231:158 adopted by Town of Greenfield Town Meeting (all gravel roads)

State and other reference materials include:

- Gravel Road Maintenance – UNH T2 Center, March 2001
- Gravel Road Maintenance Manual – Maine Dept. of Environmental Protection and Kennebec County Soil and Water Conservation District – April 2001
- Vermont Better Back Roads Manual – Vtrans January 2019
- The Massachusetts Unpaved Roads BMP Manual – Best Practices, Winter 2001

### **2020 Five Year Plan.**

The Town of Greenfield's goal is to implement a five-year plan (reviewed each year to update with the previous year's experience), cycling every five years, that will enable the restoration and maintenance of gravel roads. Maintenance of gravel roads such as grading and response to emergency situations will continue to require ongoing attention. The correction to the condition of the town's gravel roads will take time and may take longer than one five-year cycle depending upon severe storms or major emergencies, as seen in surrounding towns due to micro-burst or heavy rains. The five-year plan will include the principal gravel road considerations discussed elsewhere in more detail, but which include ditching, grading, adding of gravel, attention to drainage, and tree/brush trimming. The gravel road plan includes use of contractor services on an assigned basis for specific maintenance tasks.

There are approximately 20 miles of gravel roads in Greenfield, and the gravel road plan will bring regular direct attention to approximately 4 miles every year. Considerations for the ongoing work include requirements by the town for notice periods (Tree trimming RSA 231:158); adequate disposal of waste dirt and notification to the Selectboard /ConCom; ongoing requirements of grading on a scheduled basis; and emergency responses. It is important to stress that the four mile maintenance schedule may be handled on a spot basis, unlike paved roads, which generally see Point A to Point B treatment of paving application.

Since the Town will likely generate significant amounts of ditching material, the DPW department will need to find disposal locations for waste material. (See Agreement with Landowners attached)

The road schedule is developing with a guiding spreadsheet(s), revised annually by DPW to include updated gravel costs, estimated time for trimming work, ditching and culvert work to be prioritized, and contractor budget projections for subsequent years. In order to prioritize road work a number of factors will be considered including:

- Emergency Accessibility & Storm Damage
- Bus Routes

- Road Condition
- Traffic and Use
- Number of Residences
- Hazard Mitigation Plan recommendations
- Master Plan recommendations
- Storm Water Recommendations
- Engineering Studies

The maintenance schedule should also include an education plan for all residents with culverts for their driveway access to town roads, about their responsibilities for their culverts. The annual schedule shall include a Public Hearing with the Planning Board, scheduled early in the year before work begins to notify residents of trimming to be done on Scenic roads during that cycle (Required by RSA. Greenfield has designated all gravel roads “Scenic”). Individual landowners will be provided with notice by the DPW and an opportunity for landowners to have input will be provided to residents. RSA prescribes for the Selectboard authority to trim vegetation that is deemed a public safety threat. Otherwise, regular trimming needs to be conducted with the property owner’s input/consent. Processes and forms for resident education to be developed (TBD).

### **Annual Planning**

Each year in the fall a review of work completed in the preceding year is scheduled, with a formal review of the overall plan. Adjustments will be made as conditions/experience require from the previous year, and budgets/warrant articles developed to insure resources are available to complete the ensuing year’s plan. Any Hazard Mitigation work (prescribed by Hazard Mitigation Plan 2020) and Master Plan considerations (reference Traffic and Transportation Chapter 2015) should be included in the ensuing year’s plan.

Records of this year’s work should be kept for each road to explain what was or was not done, when and why, as well as the costs. Major weather events could easily derail the current year’s plan and they should be documented accordingly.

### **Gravel Road Considerations**

The following list includes the four primary areas of annual maintenance and scheduling.

- Ditches & Drainage
  - Ground Water & Storm Water
  - Ditching & Bank Stabilization
  - Waste Dirt
- Road Surface
  - Surface Material
  - Road Construction and Base
  - Grading & Crown
- Culverts & Outlet Protection
  - Installation & Replacement
  - Engineering Considerations
  - Dept. of Environmental Services
  - Other permitting agencies – U.S. Army, etc.
- Tree and Brush Trimming
  - Public Hearing(s) with Planning Board

## **Year 1**

Maintenance to include appropriate trimming, ditching, culvert repair/restoration and gravel surfacing, followed by crowned grading.

**Roads to be addressed:** Old Bennington Road, Cavender Road (1/2), New Boston Road Extension, Sunset Lake Road - Total distance 4.4 miles

Gravel needed 3765 yards (3" coverage over total distance) at ~12.00 /yd. = \$45,189 (this number may need to be updated due to increased cost of gravel). Gravel warrant article of \$50,000- to be distributed as needed over these four roads.

Costs of Ditching, Trimming, Culverts etc. from DPW budget lines.

Master Plan- Traffic/Transportation Chapter Table #6, Page 15 Storm water Management Road Projects-2015

- Elevate Cavender Road
- Elevate Old Bennington from County to Forest completed 2015
- 

Hazard Mitigation Plan—2020

**Notes:**

**Recommendations:**

## **Year 2 - 2021**

Maintenance to include appropriate trimming, ditching, culvert repair/restoration and gravel surfacing, followed by crowned grading.

**Roads to be addressed:** Cavender Road (1/2),. Riverbend Drive, Colonial Drive, Cornwell Road, Driscoll Road, Whitney Road, Gulf Road - Total Distance 4.48 miles

Gravel needed 3646 yards (3" coverage over total distance) at ~12.00 /yd. = \$43,747 with a gravel warrant article of \$50,000- over these seven roads.

Costs of Ditching, Trimming, Culverts etc. from DPW budget lines.

Master Plan- Storm water Management Road Projects-2015

Hazard Mitigation Plan 2020

**Notes:**

**Recommendations:**

### **Year 3 -2022**

Maintenance to include appropriate trimming, ditching, culvert repair/restoration and gravel surfacing, followed by crowned grading.

**Roads to be addressed:** Slip Road, School House Road, Sundine Farm Road, Blanchard Hill Road, Woodland Hill Road, Miner Road, Fletcher Farm Road, Etna Drive.5.04 miles

Gravel needed 3824 yards (3" coverage over total distance) at ~12.00 /yd. = \$45,888

Costs of Ditching, Trimming, Culverts etc. from DPW budget lines.

Master Plan- Stormwater Management Road Projects-2015 Elevate Schoolhouse Rd.

Hazard Mitigation Plan 2020

#### **Notes:**

What work was accomplished this year? Record for files.

**Recommendations:** Were there any severe weather conditions that prevented us from accomplishing this year's plan. Recommendations based on this years' experience for 2023 Budget

### **Year 4 -2023**

Maintenance to include appropriate trimming, ditching, culvert repair/restoration and gravel surfacing, followed by crowned grading.

**Roads to be addressed:** Francestown Road, Dodge Road, Pine Ridge Road, Muzzey Hill Road, County Road, 1  
Distance = 5.26 miles

Gravel needed 3819 yards (3" coverage over total distance) at ~\$12.00 /yd. = \$45,831

Costs of Ditching, Trimming, Culverts etc. from DPW budget lines.

Master Plan- Stormwater Management Road Projects-2015

Hazard Mitigation Plan 2020

#### **Notes:**

**Recommendations:**

**Year 5 -2024**

Maintenance to include appropriate trimming, ditching, culvert repair/restoration and gravel surfacing, followed by crowned grading.

**Roads to be addressed:** Thomas Drive, Coach Road, Dunklee Hill Road, Brooks Road, Swamp Road. Old Lyndeborough Mountain Road, Lake View Circles, Holden Road

Gravel needed 2528 yards (3" coverage) at ~\$12.00 /yd. = \$30, 338

Costs of Ditching, Trimming, Culverts etc. from DPW budget lines.

Master Plan- Stormwater Management Road Projects-2015

Hazard Mitigation Plan 2020

**Notes:**

**Recommendations: Prepare second Five Year Plan**



**Town of Greenfield**

Agreement for depositing of Excess Roadside Excavation Materials

I/We \_\_\_\_\_ of  
*Landowner(s) name*

\_\_\_\_\_ enter into  
*Street City/Town State Zip*

This agreement with the Town of Greenfield to allow for the deposit of excess roadside excavation materials on my property at \_\_\_\_\_ subject to the  
*Street*  
following conditions:

1. Access to the disposal area shall be only during the times agreed to  
( ) daily hours from \_\_\_\_\_ to \_\_\_\_\_  
( ) days/months from \_\_\_\_\_ to \_\_\_\_\_
2. Access to the deposit area shall be by:  
( ) Residential/business drive ( ) Field drive or woods road  
( ) Other \_\_\_\_\_

3. Town personnel shall restrict their activity to that portion of the land area specifically identified by stakes, flagging or as otherwise agreed.

4. I/We, the landowner, will obtain any and all local or state permits, if required, to allow the disposal of material.

5. The Town of Greenfield will grade/shape the material only as follows:

\_\_\_\_\_  
\_\_\_\_\_

6. The landowner agrees to hold the Town of Greenfield harmless from any and all claims resulting from the activities in accordance with this agreement.

7. This agreement expires in 12 months or on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

Landowner (s)

\_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_ Date: \_\_\_\_\_

DPW Roads Mgr.

\_\_\_\_\_ Date: \_\_\_\_\_

Greenfield Conservation Commission

\_\_\_\_\_ Date: \_\_\_\_\_