

# ROAD PLAN

## 2015



CHEBEAGUE ISLAND  
MAINE

**1. Introduction**

The road plan is updated annually by the town of Chebeague Island Road Committee (The Committee) with the aid of the Road Surface Management System (RSMS). RSMS is software created by the Maine Local Roads Center (MLRC) of the Maine Department of Transportation (MDOT). The goal of the plan is to methodically bring the quality of our road network up to a point where the entire network can be put into a regular, cost effective maintenance program. The Road Plan presents the findings of the Committee looking out 10 years and evaluating all island roads; approximately 10 miles of paved roads and 4 miles of gravel roads.

**2. Elements of a Road Plan**

**a. Repair Strategies**

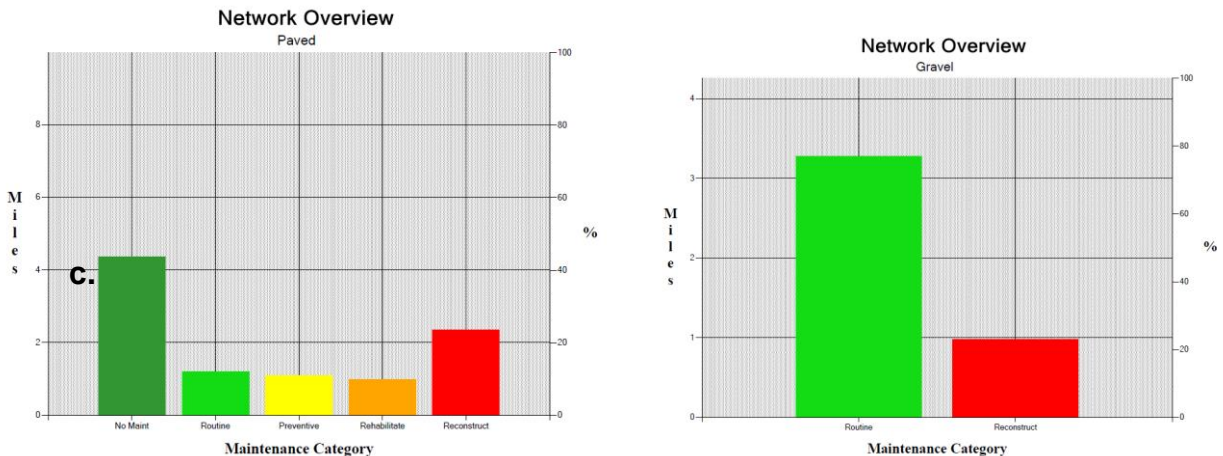
The Committee completed a road section condition survey by driving the entire road network and completing survey forms. The results were entered into the RSMS which categorizes each section of surveyed road and provides possible repair/maintenance options for each type. A cost for each maintenance option is based on the length, width and RSMS category. The Committee determined the option to recommend and applied an ‘*island factor*’ of 30% to the RSMS cost.

For planning purposes the Committee assumes all road work is done within the existing footprint of the road.

**b. Road Status**

RSMS places each paved road segment in one of the following categories: Routine, Preventative, Rehabilitate, Reconstruct. Gravel roads only use Routine and Reconstruct.

One of the goals of the plan is to have all 10 miles of paving in the Routine or Preventative categories (the most cost-effective to maintain) . To accomplish this goal the plan has to improve the worst roads without letting better roads slip into Rehabilitate or Reconstruct. The charts below show the results of the 2015 survey.



**c. Priorities**

Each road section is also characterized in terms of the traffic load and the importance of the road section. The guiding principles used by the Committee in setting priorities are:

- Public Safety
- Optimal return on dollar investment (timing and preparation)
- Proximity to public services (importance and use)

**d. Budget**

An important purpose of this report is to give the Selectmen and Capital Plan Committee a target funding level for the next annual Town Meeting. All 10 years are estimated.

The maintenance program for the 2016-2017 fiscal year the road sections comes directly from a recommendation in last year's plan. The Committee completed a survey anyway even though it is not being used directly to determine the recommended maintenance.

The Public Services department performs culvert replacement, ditching, patching and grading as part of its operating budget and they are not included in the 2015 road plan recommendations. Public Services will also be involved in preparing roads for the work recommended in this document.

**e. Annual Surface Work Groups (ASW)**

The Committee continues to work on the belief that the Town can raise funds in a single year to maintain or repair about one mile of paved road surface. Given the inventory of about 10 miles of paved road surface the Committee has developed 10 segments of approximately 1 mile each and labeled them ASW01 - ASW10. The numeric portion does not reflect a priority or expected order it is simply a label. This labeling is reflected in the RSMS naming conventions.

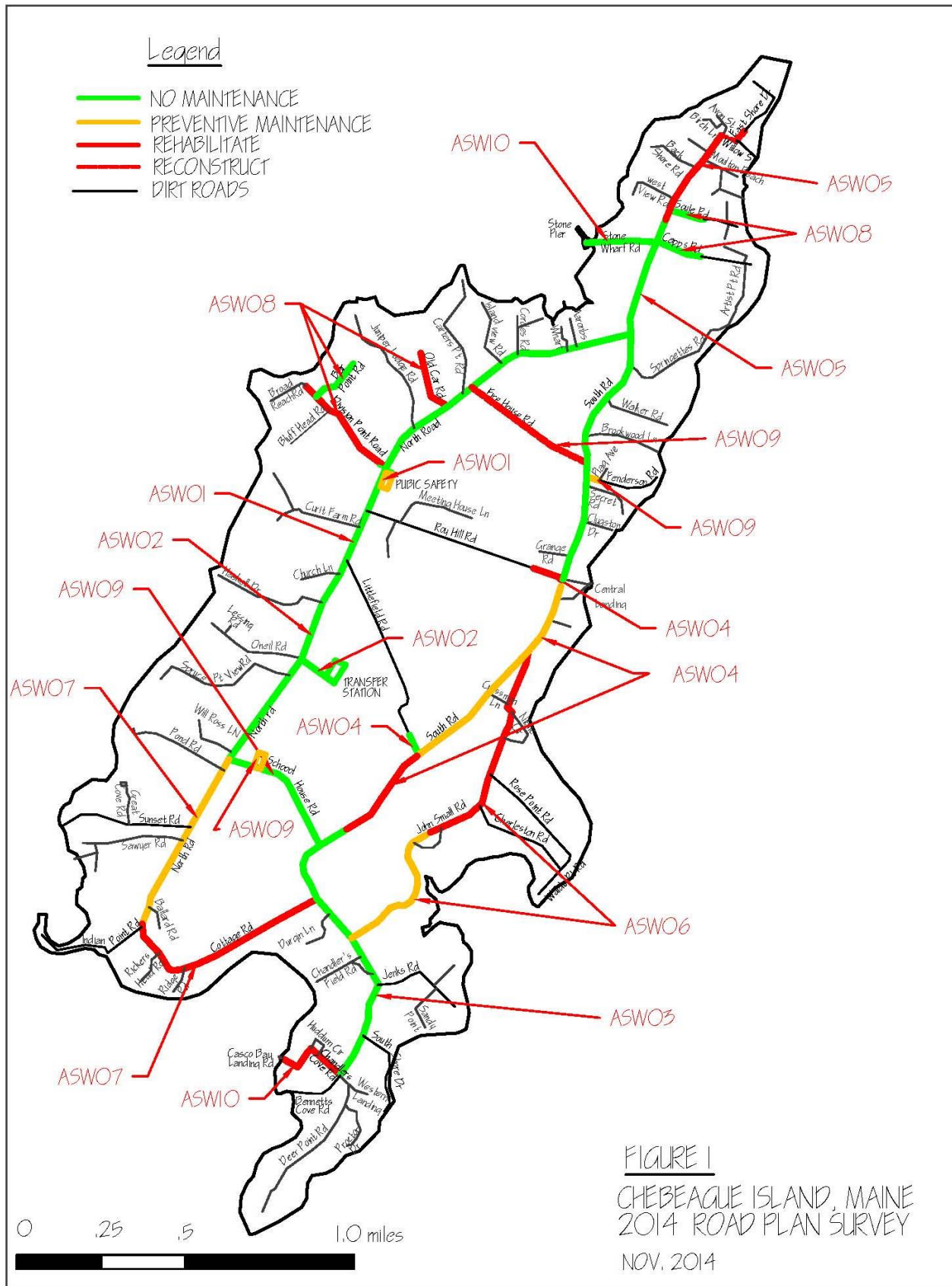
The table on the next page lists the road segments grouped by the status (based on the 2015 survey).

See Figure 1 for a map of the work groups used in this plan and surveyed status for each segment.

Town of Chebeague Island 2015 Road Plan

Draft for 01/05/16

	From Road/Section	To Road/Section	Length	Import	Traffic	Drainage Status
<b>No Maint</b>						
ASW02 Transfer Station Road	North Road	Transfer Sta.	0.06	high	high	Good
ASW10 Stone Wharf	Stone Wharf Road	Easterly Extent	0.13	high	high	Poor
ASW10 Stone Wharf Road	South Road	Stone Wharf	0.18	high	high	Good
ASW01 North Road 01	South Road (East)	Public Safety Bld	0.87	high	med-high	Good
ASW02 North Road 02	Public Safety Bld	School House	0.99	high	med-high	Good
ASW09 School House Rd	North Road	South Road	0.42	high	med-high	Good
ASW03 South Road	Chandler's Cove Rd	.2 mi p school hse	1.00	high	medium	Good
ASW06 John Small 01	South Road (West)	Near Brother Ross'	0.41	med-high	med-high	Good
ASW09 Parking Lot School	7000 square feet		0.02	high	low-med	Good
ASW04 South Road	.2 mi p school hse	Littlefield Rd	0.20	medium	medium	Good
ASW04 Roy Hill Road	South Road	Summa	0.03	low	medium	Good
ASW04 Littlefield Road	South Road	Island Commons	0.06	low	low	Good
			4.37			
<b>Routine</b>						
ASW05 South Road	Roy Hill Rd	Inn	1.15	high	high	Good
ASW10 Caso Bay Landing	Chandler's Cove Rd	State Wharf	0.05	med-high	medium	Good
			1.20			
<b>Preventive</b>						
ASW06 John Small 02	Near Brother Ross'	South Road (East)	0.54	med-high	med-high	Poor
ASW10 Chandler Cove Road	South Road	Caso Bay Lndg Rd.	0.18	med-high	medium	Good
ASW01 Parking Public Safety Bldg	North Road	Public Safety Bld	0.08	high	low	Good
ASW08 Bar Point Road	Division Point Rd	Cul du sac	0.16	low	low	Good
ASW08 Capps Road	South Road	Past C. Doughty	0.13	low	low	Good
			1.09			
<b>Rehabilitate</b>						
ASW04 South Road	Littlefield Rd	Roy Hill Rd	0.63	med-high	med-high	Poor
ASW05 South Road	Inn	East Shore Rd	0.35	medium	low	Poor
			0.98			
<b>Reconstruct</b>						
ASW09 Firehouse Road	North Road	South Road	0.37	medium	medium	Poor
ASW07 Cottage Road	North Road	South Road	0.60	medium	low-med	Good
ASW07 North Road 03	School House	Cottage Road	0.57	low-med	low-med	Good
ASW08 Division Point Road	North	Division Point	0.36	low	low	Good
ASW08 Old Cart Road	North Road	Cul du sac	0.20	low	low	Poor
ASW08 Soule Road	South Road	Johnson's	0.06	low	low	Good
ASW09 Fenderson Road	South Road	J. Dought'y drive	0.19	low	low	Poor
			2.35			



**a. Annual Gravel Work Groups (AGW)**

The Committee inventoried the Town owned gravel roads and included them in the survey this year for the first time. Each road was given a label “AGW01 – AGW15”. The island’s gravel roads tend to be shorter than the paved roads and the work performed on them is generally less complex. Public Services can provide nearly all of the basic maintenance.

Gravel	From	To	Length	Width	Import	Traffic
AGW01 Bennets Cove Road-1	South Road	Shore	0.16	20.00	high	med-high
AGW02 Capps Road-1	Capps end of pavin	Artist Point Road	0.14	14.00	low-med	low
AGW03 Charleston Road-1	John Small Road	Waldo Point Road	0.33	12.00	low	low
AGW04 Cordes Road-1	North Road	Cul du sac	0.33	10.00	low	low
AGW05 East Shore Drive-1	End of South Road	Cul du sac	0.26	20.00	low-med	low
AGW06 Fenderson Road-1	End of paved secti	Cul du sac	0.20	14.00	low-med	low-med
AGW07 Indian Point Road-1	North Road	Cul du sac	0.27	20.00	medium	medium
AGW08 Jenks Road-1	South Road	Shore	0.33	20.00	low-med	low
AGW09 Littlefield Road-1	North Road	South Road	0.64	15.00	medium	medium
AGW10 Rose Point Road-1	John Small Road	Waldo Point Road	0.33	18.00	low-med	low
AGW11 Roy Hill Road-1	North Road	South Road	0.65	20.00	low-med	medium
AGW12 Soule Road-1	End of paved secti	Shore	0.17	19.00	low-med	low
AGW13 South Shore Drive-1	South Road	Cul du sac	0.23	18.00	low	low
AGW14 Waldo Point Road-1	Rose Point Road	Cul du sac	0.14	18.00	medium	low
AGW15 Willow Street-1	South Road	Shore	0.08	18.00	low-med	low

The list of gravel roads was compiled from various documents and should be viewed as preliminary. More information should be gathered by the Town on these roads to assure we know that they have been accepted either by Cumberland or by Chebeague. The nature of the ownership should also be documented since some may be easements instead of “Town Ways”. “Municipal Roads Manual” by Maine Municipal Association provides guidance on the many facets of municipal roads.

We believe a public road also exists between South Road and Central Landing. The status and parameters of this road should be investigated.

### 3. Special Board Request

At a selectmen's meeting on 11/18/2015 the road committee gave a preliminary report to the board of selectmen indicating the general intent of the committee with respect to work to be performed in 2016. The Board asked the committee to assess the cost to accelerate the plan by financing recommended work on the roads and addressing all of the remaining road maintenance. This section addresses that request.

The following table presents two scenarios: 1) Selected Options – is the cost to complete all work presented in the tables of Section 7 by selecting an option from near the middle of the cost range and 2) Highest Cost Option – simply selecting the most conservative estimate we have.

The 30% island factor is added and a finance cost is calculated based on a 4% loan for 10-years. Ten to fifteen years is the approximate life expectancy for the road surface.

	Estimated Cost RSMS	30% Island Factor	Amount to Borrow	Est. Financing Cost @ 4% for 10 years	Total Estimated Cost to Finance
Selected Options	\$768,000	\$230,400	\$998,400	\$1,212,998	\$214,598
Highest Cost Option	\$1,200,000	\$360,000	\$1,560,000	\$1,895,309	\$335,309

Other considerations in accelerating the plan include:

1. The projects remaining in the plan are the smaller projects including the cul-de-sac roads leading down to the shore in many places. It is likely that the per mile estimates in the plan assume a certain economy of scale that these projects won't realize. A higher contingency than the normal 10% is worth considering.
2. If the schedule is accelerated then the road preparation work must also be accelerated and would probably require subcontracting instead of using the Public Services crew. In the past (and in this plan) we have assumed the crew and materials they use come out of the operations budget.
3. Using a higher life expectancy to increase the loan-term would increase the finance charge.
4. The 5 miles of paved roads we have resurfaced since 2010 will come back into the maintenance schedule in 2020 at which point we would still be paying off a 10-year loan.

The committee has preferred to work in slow and steady annual projects of about a mile per year to spread the costs out over the proposed 10 year cycle and to keep maintenance costs spread out beyond the 10-year plan. The pace has also allowed us to develop a working relationship with the paving contractor and research options in techniques and materials.

Accelerating the plan at this point would probably not impact these factors but it would also not present any great technical or financial advantage.

#### **4. Financial Status**

Part of the RPC's duties are to recommend financing options for the plan. To that end each year the RPC requests the current estimated balance of the undesignated fund balance and the balance of the paving reserve account (9050) from the treasurer.

On 11/02/2014 the treasurer estimated the fund balance at approximately \$230,000 which is only slightly higher than the minimum 8% of operations allowed by Selectmen's policy. The paving reserve (9050) has a balance of approximately \$6,664.61.

#### **5. Gravel Supply**

Good quality gravel is important to building proper roadbeds. Many of the road segments that fall at the end of the priority list are in poor shape because the roadbeds are inadequate and will require additional gravel. The best example of this is Firehouse Road.

In 2015 the Board of Selectmen directed the Committee to initiate the process of developing a plan to acquire gravel for future road work.

The Committee estimates that it takes approximately 10,000 cubic yards of gravel to build up a road 12 inches. And approximately 400 cubic yards to backfill a mile of road shoulder after paving 2 inches x 24 inches on both sides.

Therefore for normal road maintenance the Town should have access to approximately 46,000 cubic yards to support this 10 year plan.

**6. Recommendations to the Board of Selectmen:**

This year the process was a little different than in previous years. Although the committee performed a survey and updated the RSMS software we did not use it for the following recommendation. Instead, we are taking the recommendation of All States Asphalt (the paving contractor) to seal all of the road segments where we have used cold-mix (approximately 5 miles). This approach was discussed in last year’s plan and the committee is moving it to a recommendation in this document.

The chip seal prices are quoted “for planning purposes” from All States Asphalt in a phone conversation on 11/5/2015. Chip Seal: \$3.50/SY and \$5.10/SY.

**a. Capital Repair Projects for Calendar year 2016**

i. Road Sealing Project 2016-2017

The Committee recommends that we contract to seal the nearly 5 miles of cold-mix paving done since 2012. The road cold-mix road segments are listed in the table below:

Cold-mix paved	Len(mi)	Plan	Est. \$
ASW01 North Road 01	0.87	Double CS	\$ 54,664
ASW01 Parking Public Safety Bldg	0.08	Single CS	\$ 5,051
ASW02 North Road 02	0.99	Single CS	\$ 42,689
ASW02 Transfer Station Road	0.06	Single CS	\$ 2,341
ASW03 South Road	1.00	Double CS	\$ 59,840
ASW04 Littlefield Road	0.06	Single CS	\$ 2,341
ASW04 Roy Hill Road	0.03	Single CS	\$ 1,047
ASW04 South Road	0.20	Single CS	\$ 8,213 *
ASW04 South Road	0.63	Single CS	\$ 25,872
ASW06 John Small 01	0.41	Single CS	\$ 15,995
ASW06 John Small 02	0.54	Single CS	\$ 21,067
<b>TOTAL</b>	<b>4.87</b>		<b>\$ 239,121</b>

\* not fully paved in 2015

ii. Gravel Resource Assessment

The Committee recommends that the Board of Selectmen contract with an engineering firm to assess the amount and quality of gravel available on Town owned property.

The assessment should include a description of any technical or regulatory challenges as well as a description for any processing (screening or crushing) required to the make the material suitable for gravel road base and finish as well as shoulder dressing for paved roads. Cost estimates should also be provided in sufficient detail for the Committee and Road Commissioner to determine the feasibility of developing specific gravel deposits and make appropriate recommendations to the Board of Selectmen. The committee estimates the cost of such an assessment to be between \$10,000 and \$20,000.

**b. Financing**

The Committee continues to recommend raising all funds required to implement this plan annually through taxes.

1. Plan to allocate approximately \$175,000 each year for the paving capital account (9050) to implement this plan. Specific annual recommendations may vary.
2. Continue to raise funds in the operating budget to perform the pre-paving work of replacing culverts and the post-paving work of dressing the road shoulder of all newly paved roadways.
3. Supplement revenue raised through taxes each year with a transfer from the undesignated fund balance to the extent it can be done under the current fund balance policy.

**c. 2015-2016 Maintenance, Budget and Administrative Recommendations**

1. Request Town Meeting to raise \$\_\_\_\_\_ in fiscal year 2016-2017 for the paving capital account (9050) and authorize spending up to \$\_\_\_\_\_ (This includes sealing ASW01, ASW02, ASW03, ASW04, ASW06 and ASW07 plus about a %10 contingency),
2. Direct the Town Administrator to solicit bids, secure contracts and make any other preparations to accomplish the work described in this plan,
3. Maintain the RSMS software and purchase upgrades as needed,
4. Publish the plan in advance of the budget process
5. Request Town Meeting transfer \$0 from the undesignated fund balance to the paving capital account (9050)

**7. RSMS Road Network Financial Plan**

The table below is the result of this year's road survey and analysis. This table was produced by modifying the output of the RSMS options report. The Committee determined that for each section it would choose a repair option in the middle of the option list (ordered by cost).

10/18/2015  
5:54:33PM

## Costed Repair Options

**AGW01 Bennets Cove Road-1-1 [Gravel] From: South Road To: Shore (Length: 0.16mi., Width: 20.00ft.)**

<b>Surface Status: Reconstruct-9</b>	<u>Estimated Cost</u>
Add 12" gravel to base, 3" to surface (S)	\$ 0
<b>Drainage Status: Poor-9</b>	<u>Estimated Cost</u>
Culverts (S)	\$ 0
Ditching (S)	\$ 0

**AGW02 Capps Road-1-1 [Gravel] From: Capps end of pavin To: Artist Point Road (Length: 0.14mi., Width: 20.00ft.)**

<b>Surface Status: Reconstruct-3</b>	<u>Estimated Cost</u>
Add 12" gravel to base, 3" to surface (S)	\$ 0
<b>Drainage Status: Good-3</b>	<u>Estimated Cost</u>
Minor ditching (S)	\$ 0

**AGW03 Charleston Road-1-1 [Gravel] From: John Small Road To: Waldo Point Road (Length: 0.33mi., Width: 20.00ft.)**

<b>Surface Status: Routine-2</b>	<u>Estimated Cost</u>
Dust control (S)	\$ 0
Routine grading (S)	\$ 0
Add gravel (up to 4") (S)	\$ 0
Spot grading/blading (S)	\$ 0
<b>Drainage Status: Good-2</b>	<u>Estimated Cost</u>
Minor ditching (S)	\$ 0

**AGW04 Cordes Road-1-1 [Gravel] From: North Road To: Cul du sac (Length: 0.33mi., Width: 10.00ft.)**

<b>Surface Status: Reconstruct-2</b>	<u>Estimated Cost</u>
Add 12" gravel to base, 3" to surface (S)	\$ 0
<b>Drainage Status: Good-2</b>	<u>Estimated Cost</u>
Minor ditching (S)	\$ 0

**AGW05 East Shore Drive-1-1 [Gravel] From: End of South Road To: Cul du sac (Length: 0.26mi., Width: 20.00ft.)**

<b>Surface Status: Routine-3</b>	<u>Estimated Cost</u>
Routine grading (S)	\$ 0
Dust control (S)	\$ 0
Spot grading/blading (S)	\$ 0
Add gravel (up to 4") (S)	\$ 0
<b>Drainage Status: Good-3</b>	<u>Estimated Cost</u>
Minor ditching (S)	\$ 0

**AGW06 Fenderson Road-1-1 [Gravel] From: End of paved secti To: Cul du sac (Length: 0.20mi., Width: 20.00ft.)**

<b>Surface Status: Routine-4</b>	<u>Estimated Cost</u>
Spot grading/blading (S)	\$ 0
Routine grading (S)	\$ 0
Dust control (S)	\$ 0
Add gravel (up to 4") (S)	\$ 0
<b>Drainage Status: Good-4</b>	<u>Estimated Cost</u>
Minor ditching (S)	\$ 0

## Costed Repair Options

**AGW07 Indian Point Road-1-1 [Gravel] From: North Road To: Cul du sac (Length: 0.27mi., Width: 20.00ft.)**

<b>Surface Status: Reconstruct-6</b>	<u>Estimated Cost</u>
Add 12" gravel to base, 3" to surface (S)	\$ 0
<b>Drainage Status: Good-6</b>	<u>Estimated Cost</u>
Minor ditching (S)	\$ 0

**AGW08 Jenks Road-1-1 [Gravel] From: South Road To: Shore (Length: 0.33mi., Width: 20.00ft.)**

<b>Surface Status: Routine-3</b>	<u>Estimated Cost</u>
Spot grading/blading (S)	\$ 0
Add gravel (up to 4") (S)	\$ 0
Routine grading (S)	\$ 0
Dust control (S)	\$ 0
<b>Drainage Status: Good-3</b>	<u>Estimated Cost</u>
Minor ditching (S)	\$ 0

**AGW09 Littlefield Road-1-1 [Gravel] From: North Road To: South Road (Length: 0.64mi., Width: 15.00ft.)**

<b>Surface Status: Routine-6</b>	<u>Estimated Cost</u>
Dust control (S)	\$ 0
Spot grading/blading (S)	\$ 0
Add gravel (up to 4") (S)	\$ 0
Routine grading (S)	\$ 0
<b>Drainage Status: Good-6</b>	<u>Estimated Cost</u>
Minor ditching (S)	\$ 0

**AGW10 Rose Point Road-1-1 [Gravel] From: John Small Road To: Waldo Point Road (Length: 0.33mi.,**

<b>Surface Status: Routine-3</b>	<u>Estimated Cost</u>
Add gravel (up to 4") (S)	\$ 0
Routine grading (S)	\$ 0
Dust control (S)	\$ 0
Spot grading/blading (S)	\$ 0
<b>Drainage Status: Good-3</b>	<u>Estimated Cost</u>
Minor ditching (S)	\$ 0

**AGW11 Roy Hill Road-1-1 [Gravel] From: North Road To: South Road (Length: 0.65mi., Width: 20.00ft.)**

<b>Surface Status: Routine-5</b>	<u>Estimated Cost</u>
Routine grading (S)	\$ 0
Spot grading/blading (S)	\$ 0
Dust control (S)	\$ 0
Add gravel (up to 4") (S)	\$ 0
<b>Drainage Status: Good-5</b>	<u>Estimated Cost</u>
Minor ditching (S)	\$ 0

## Costed Repair Options

### AGW12 Soule Road-1-1 [Gravel] From: End of paved secti To: Shore (Length: 0.17mi., Width: 19.00ft.)

<b>Surface Status: Routine-3</b>	<u>Estimated Cost</u>
Dust control (S)	\$ 0
Add gravel (up to 4") (S)	\$ 0
Routine grading (S)	\$ 0
Spot grading/blading (S)	\$ 0
<b>Drainage Status: Good-3</b>	<u>Estimated Cost</u>
Minor ditching (S)	\$ 0

### AGW13 South Shore Drive-1-1 [Gravel] From: South Road To: Cul du sac (Length: 0.23mi., Width: 18.00ft.)

<b>Surface Status: Routine-2</b>	<u>Estimated Cost</u>
Add gravel (up to 4") (S)	\$ 0
Dust control (S)	\$ 0
Routine grading (S)	\$ 0
Spot grading/blading (S)	\$ 0
<b>Drainage Status: Good-2</b>	<u>Estimated Cost</u>
Minor ditching (S)	\$ 0

### AGW14 Waldo Point Road-1-1 [Gravel] From: Rose Point Road To: Cul du sac (Length: 0.14mi., Width:

<b>Surface Status: Routine-4</b>	<u>Estimated Cost</u>
Dust control (S)	\$ 0
Add gravel (up to 4") (S)	\$ 0
Routine grading (S)	\$ 0
Spot grading/blading (S)	\$ 0
<b>Drainage Status: Good-4</b>	<u>Estimated Cost</u>
Minor ditching (S)	\$ 0

### AGW15 Willow Street-1-1 [Gravel] From: South Road To: Shore (Length: 0.08mi., Width: 18.00ft.)

<b>Surface Status: Reconstruct-3</b>	<u>Estimated Cost</u>
Add 12" gravel to base, 3" to surface (S)	\$ 0
<b>Drainage Status: Poor-3</b>	<u>Estimated Cost</u>
Ditching (S)	\$ 0
Culverts (S)	\$ 0

### ASW01 Parking Public Safety Bldg-1 [Paved] From: North Road To: Public Safety Bld (Length: 0.08mi.,

<b>Surface Status: Preventive-6</b>	<u>Estimated Cost</u>
Sand seal (S)	\$ 1,968
Chip seal (latex modified) (S)	\$ 3,075
Thin (3/4 - 1") overlay (S)	\$ 4,920
Shim with 1" overlay (S)	\$ 7,995
Thick (> 1") overlay (S)	\$ 8,856
Overlay w/ 2" cold mix, top w/ 1" HMA (S)	\$ 14,391
Mill and Fill 1.25" (S)	\$ 15,375

