Blackstrap Road West Falmouth 6.3 miles

# CREATING A "VISION" FOR BLACKSTRAP ROAD

#### PUBLIC FORUM 2 \* SEPTEMBER 11, 2019 \* FALMOUTH TOWN HALL



### TONIGHT'S AGENDA

- I. Project purpose & Recap Forum I
- 2. Work Completed since Forum I
- 3. Draft Recommendations& Next Steps
- 4. Your Feedback



### **PROJECT PURPOSE:**

### DEVELOP A CONCEPT PLAN FOR BLACKSTRAP ROAD

### Consultant TY Lin was tasked to:

- Analyze:
  - road and pavement condition
  - drainage and maintenance
  - intersection alignments
  - bicycle and pedestrian infrastructure
- Develop improvement options and cost estimates
- Recommend implementation steps

### I. THERE IS A LOT OF TRAFFIC ON BLACKSTRAP ROAD...

- Besides Turnpike and Route 100, Blackstrap Road is a key northsouth road connection
- Commuter traffic from Windham and Cumberland to Portland
- Popular with cyclists



## 2. SOME PEOPLE ARE SPEEDING ON BLACKSTRAP ROAD

### March 2016 Speed Data

Speed limit	35 mph
Average speed	36.16 mph
50th percentile speed	35.62 mph
85th percentile speed	40.49 mph
Maximum speed	61 mph

Blackstrap Road receives more attention in terms of speed enforcement than any other road in Falmouth:

POLICE

- 40% of speed enforcement time dedicated with enforcement grants
- 2017: 850 traffic "contacts" by Falmouth PD on Blackstrap Road and nearby roads

### 3. THERE ARE ACCIDENTS ON BLACKSTRAP ROAD

- About 5% of all crashes in Falmouth are on Blackstrap Road.They are typically the worst crashes.
- Road has rural, open feel. High speeds can be a contributing factor.
- Many accidents happen at the intersections:
  - Hardy Road
  - Mast Road
  - Brook Road
  - Babbidge Road
  - Mountain Road
- None of these are "High Crash Locations"



### 4. MULTIPLE PARTIES TAKE CARE OF BLACKSTRAP ROAD...

- Falmouth = 2.2 miles (35%)
- MaineDOT = 4.1 miles (65%)
- Maine Turnpike Authority = one overpass, one underpass

### .....RESULTING IN DIFFERENT LEVELS OF IMPROVEMENT AND NEED FOR COORDINATION

- Falmouth section = 28 feet wide paved road (11 ft paved lanes, 3 ft paved shoulders) plus 1 ft gravel shoulder)
- MaineDOT section = 22-24 feet wide road (11-12 ft lanes, 0-1ft shoulders)

Blackstrap Road West Falmouth 6.3 miles

CUMBERLAND

#### FALMOUTH

WESTBROOK





## 2016 Falmouth Bicycle & Pedestrian Plan

Revised Final Plan , November 14, 2016

5. W OT	HAT ABOUT HER PLANS?	2016 FALMOUTH BICYCLE AND PEDESTRIAN PLAN Introduction Third Falmouth Bicycle and Pedestrian Plan 2016 Plan Elements Process Recommended 20 Year Vision Recommended 20 Year Vision Recommended Goals Recommended Actions Notes to Recommended Actions Pedestrian Map Bicycle Map	PAGE 2 2 3 6 6 7 11 18 19	
		ATTACHMENTS A Approach to 2015 Falmouth Bicycle and Pedestrian Plan B Falmouth Bicycle and Pedestrian Plans and Data Falmouth Trail Inventory	20 21 22	AN AN
Rural Bicyc	le Route Loops			
Bicycle Imp	orovements			
44	Middle Road: Install bicycle	e lane from Longwoods Road to Cumberland	М	
	Town line			
45	Hurricane Road: Designate	e for shared access from Blackstrap Road to	L	
	Gray Road			Part of the local division of the local divi
46	Blackstrap Road: Install bio	cycle lane or designate for shared access from	М	
	Brook Road to Hurricane			
47	General recommendation	Consider regional transportation connection	S	
	opportunities when planni	ng new bicycle improvements.		
		Q Council Presentation May 23, 2016	216	

## 6. NEED TO KEEP FINANCES IN MIND....

- Recent Route I and 100 road projects: TIF funds, no tax rate impact
- Future MaineDOT contribution for Blackstrap Road? How much?
- Blackstrap Road expense: Falmouth General Fund, tax rate impact

Example: \$4M project paid over 20 years will increase tax rate on average by \$0.11+/-. (= average of \$44/year for 20 years on \$400K home)

• Improvements costing more than \$2M require Falmouth voter approval

## 7. THIS MAY TAKE SOME TIME...

## "BEST" SCENARIO

- 2019: Concept Plan, Council Review, MaineDOT discussions
- 2020: Preliminary Engineering Plan
- 2021: Referendum Vote to Authorize Expenditures?
- 2021-22: Final Engineering Plan, Bidding
- 2023-24: Construction start?



## 8. SIGNAGE OPTIONS TO CONSIDER...

SHARED BICYCLE LANE MARKING





Bicycle safety & awareness signage

Freestanding speed reading sign

YOUR

LIMIT

30

Sample road sections

Town-improved section

35

## 9A. FEEDBACK AT FORUM I (APRIL 2018)

### KEY CONCERNS WE HEARD YOU EXPRESS...

#### PROJECT WILL ADDRESS:

- Pavement condition/potholes
- Speeding

STOP

- Intersection visibility
- Desire for safe biking and walking, and crossing the road
- Maintaining rural/scenic character

### PROJECT WILL NOT SPECIFICALLY ADDRESS:

- Truck traffic
- Increase in traffic volume
- Traffic congestion

#### ONGOING EFFORT:

- Black ice condition
- Litter
- Maintenance

## 9B. FEEDBACK AT FORUM I (APRIL 2018)

#### SUGGESTIONS YOU MADE...

#### UNDER CONSIDERATION:

STOP

- Make MaineDOT aware of dangerous road conditions
- Add bike path or bike lanes
- Improve sight distances
- Narrower travel lanes
- Add speed feedback signs and pavement markings
- Establish formal crossing areas
- Coordinate any public utility work with road project

#### CONSIDERED, BUT NOT PART OF THIS PROJECT:

- Add side walk(s)
- Create off-road, parallel paths

- Reduce speed limit to 25 mph
- Add rotaries, speed tables, chicanes
- Town to acquire maintenance control of Blackstrap Road

#### PART OF ONGOING EFFORTS:

- Allow trees to grow over the road
- Pick up trash/community awareness campaign/litter fine
- Have regular maintenance schedule (mowing, culverts, trash)



## **10.WORK COMPLETED SINCE FORUM I**

- April 2018 A windshield survey was performed of Blackstrap Road by TY Lin and Town staff
  - May 2018: An initial coordinating meeting was held with MaineDOT
  - June 2018 7-day speed review by Falmouth Police Department In June 2019, 88% drove 40 mph or less

STOP

SPEED DATA	March 2016	June 2018
Speed limit	35 mph	35 mph
Average speed	36.16 mph	35.6 mph
50th percentile speed	35.62 mph	35.13 mph
85th percentile speed	40.49 mph	38.99 mph
Maximum speed	61 mph	65 mph

## II. WHAT IS <u>UNDER</u> THE ROAD?

August 2018: Ten soil borings were conducted by RW Gillespie to determine which parts of Blackstrap Road need full depth reconstruction versus rehabilitation.

STOP

Based on the soil
report and survey,
typical section
recommendations
were for sections of
Blackstrap Road.



## 12. TWO CROSS SECTION OPTIONS



STOP

4-18.5

## I 3. CONSTRUCTION COST ESTIMATING STEPS

#### November 2018:

STOP

- Each component (walkways, ditches, road width) for each section was separately costed out and incorporated in a spreadsheet.
- A cumulative total was created to get a sense how each component impacted the total cost.
- Two versions were created 3 foot wide shoulder option and a 5 foot wide shoulder option (cost increase +\$800K)



# 14. COST ESTIMATE BY ROAD SECTION – 2018 EXAMPLE BELOW

State section beyond power line 2.1 miles. Looks better than other State section. Existing 12' +/width travel lanes. Ditches are present along with stonewalls. Road worsens beyond Babidge Rd. Steep x-slopes and ledge present (Hurricane Rd). Possible candidate for partial depth reconstruction? Borings needed to determine existing roadbed material. Safe bet would be reconstruct. Ends at Cumberland T.L. – newly built section 11' T.W with 5' shoulders – both directions

<u>Note:</u> Earlier this year, MaineDOT placed a 5/8" maintenance paving treatment on this section as part of their Light Capital Paving program.

2<sup>nd</sup> PRIORITY: Approx. 2.1 miles - TOTAL COST = \$4M (\$1.9M/mile)

- Reclaim section utilizing the depths recommended in the RWG report:
  - 2.1 miles @ \$157/LF = \$1.8M
- 4.2 miles of work outside the paved shoulder:
  - 2.0 miles standard ditch @ \$15/LF = \$160K
  - 0.9 miles Shallow V ditch w/ 6" UD @ \$35/LF = \$170K
  - 1.3 miles Bit Curb w/ 6" UD @ \$55/LF = \$380,000
- 3' Wide Stone Dust Path on both sides:
  - 4.2 miles @ \$20/LF = \$450K
- Add 20% Contingency = \$600K

STOF

- Add 5% Preliminary Engineering = \$150K
- Add 8% Construction Inspection = \$250K

## **15. COST REDUCTION OPTIONS**

#### ATTACHMENT 4: Blackstrap Road Cost Reduction Options Draft: November 2, 2018

Section Responsibility Length in miles		1 Town 0.3		2 MTA 0.2			3 Town 0.6		4 State 2.1		5 Town 0.8		6 State 2.1		Total 6.1	Comments
Cost Estimate	Ş	-	Ş		-	Ş	-	Ş	3 4,000,000	Ş	1	Ş	2 4,000,000	\$	9,300,000	Preliminary recommendation
1. Work done by Town	¢		s			¢		¢	4 000 000	Ş	650,000	<	4 000 000	٩	8 650 000	Recomme
2. Path on one side only	ş	-	ş		-	ş	-	ş Ş	220,000 3,780,000	ş ş	56,000 594,000	\$ \$	220,000 3,780,000	\$	8,154,000	Recommended
3. No path	\$	-	Ş		-	\$	-	\$ \$	220,000 3,560,000	\$ \$	56,000 538,000	\$ \$	220,000 3,560,000	ş	7,658,000	To be considered
4. Ditch only. No curb with underdrain	Ş	-	\$		-	Ş	-	\$ \$	430,000 3,130,000	\$ \$	60,000 478,000	\$ \$	410,000 3,150,000	ş	6,758,000	Will have neighborhood impact on trees and stone walls. May have more cost due to additional ledge. (Budgeted at V
5. Road cross section reduced from 28 to 24 ft	s		s		_	s		Ş	252,000	Ş	45,000	ş	252,000	s	6 209 000	ditch prices)

## 16. HOW DO COSTS COMPARE OVER 30-YEAR LIFE CYCLE?

March 2019: TY Lin developed 30-year Life Cycle Cost spreadsheet comparing improvement alternatives:

- Scenario I: Full depth Reclamation with variable depth gravel and 3 ft shoulders
- Scenario 2: Plant-Mixed Recycled Asphalt ("pugmill") with variable depth and 3 ft shoulders
- Scenario 3: Full Reconstruction with 3 ft shoulders

#### **Aspects considered:**

STOP

Design life, risk of premature failure, contractor availability, construction logistics, impact on public, impact on abutters – cost/benefit

## **17. COST-BENEFIT COMPARISON**

Method	Initial Cost & Design Life	30 Year Life Cycle Cost	Description	Pros	Cons
Full Depth Reclamation (FDR)	\$8.3M, 12 years average = \$692K/year	\$12.0M average = \$400K/year	Scope would entail removing existing pavement layer (where necessary) to add variable depth gravel for structure and grade. Pavement would then be brought back in and reclaimed and treated in place. Treatment would consist either of bituminous or cement stabilizer. Further analysis of existing subgrade soil conditions would occur to make this selection. 3' shoulders would be reconstructed of Aggregate Subbase Course Gravel. Hot mix asphalt would be placed full width atop reclaim and gravel shoulders.	Should long areas exist with favorable subsurface conditions, such that variable depth gravel not be required for structure, existing pavement could remain and be reclaimed in place, saving time and money. Treated FDR tends to be a rather consistent structure that Should allow for uniform deterioration over time.	Slightly more expensive than the PMRAP option. The need for a reclaimer and treatment may limit contractor capability to just two or three.
Plant Mixed Recycled Asphalt Pavement (PMRAP) aka "pugmill"	\$7.5M (\$6.0M with MaineDOT material and crew), 12 years average = \$625K/year (\$500K/year)	\$11.2M (\$9.7M) average = \$373K/year (\$323K/year)	Scope would consist of removing the existing pavement layer and transporting the material offsite to be crushed. Variable depth gravel would be added for structure and grade. Crushed pavement would be run though a pugmill with the addition of asphalt emulsion and portland cement and placed back on the road to design depth. Shoulders would be reconstructed of gravel. The top layer of shoulder could be construction of PMRAP if sufficient material exists. Hot mix asphalt would be placed full width atop PMRAP and shoulders.	The cheapest of the options and potentially more so if opportunity exists to partner with MaineDOT for the use of their pugmill. Any contractor with a paver could bid.	Logistics may be a little trickier (especially if using MaineDOT's pugmill) as pavement will be removed from the entire length of the project and must be crushed and mixed before returning. Variable depth gravel will need to be added shortly after this process and traffic will be running on this gravel for a longer period of time, before PMRAP can be placed. PMRAP can be a rather inconsistent material, though this can be alleviated with proper QC.
Full Reconstruction	\$12.5M, 20 years average = \$625K/year	\$14.76M average = \$492K/year	Scope would consist of full excavation of roadway to a subgrade depth (likely 30"). Aggregate Subbase Course Gravel will be installed to grade, full width. Hot mix asphalt would be placed full width.	Longest design life Least risk of premature failure	Most expensive Initially most impactful to public

## 18. DRAFT RECOMMENDATIONS – JUNE 2019

### **CONSTRUCTION METHOD:**

STOP

• Full depth reclamation (\$8.45M, 2019 estimate)

### **ROAD CROSS SECTION DESIGN:**

10.5 ft travel lane, 3.5 ft shoulder, no walking path – 28 ft overall width

### **SCHEDULE OPTIONS** (to be decided later):

- I. Do all at same time: economy of scale of project, but few bidders, financing?
- 2. Do in smaller parts over time: more eligible bidders, more competitive resulting in lower cost? (preferred option)

## I9. DRAFT RECOMMENDATIONS – JUNE 2019

### **PHASING:**

STOP

- Segment I: Mountain Road North 0.8 miles 100% Town project 2019-2020
- Remaining segments (MaineDOT portion): 50-50 cost share Town-MaineDOT segment lengths and timing TBD (Town prefers ASAP)
- Prefer I-mile segments, but may need to consider smaller segments to match available MaineDOT funding?

### **PROJECT MANAGEMENT:**

Town of Falmouth for all 5 segments (to be decided later)

### FINANCING:

- Partnership cost share with MaineDOT
- Town pays for its remaining section: \$1.36M
- 50-50 cost share for 4 miles of MaineDOT section: \$3.9M <u>each</u> (pending availability of funding)

# Blackstrap Road

## 20. NEXT STEPS

### SEPTEMBER 2019:

- II: Forum 2: Present draft recommendations
- Week of September I 6: Blackstrap Road construction from Mountain Road to Compact Line (4,700 LF of asphalt reclamation/new paving)
- Review forum 2 feedback with MaineDOT

### OCTOBER 2019:

Present final recommendations to Town Council (date TBD)
 WINTER 2019-2020:

- Incorporate Council direction in 2020-2021 budget
- Continue to discuss project with MaineDOT

### SPRING 2020:

- Budget review and approval
- Develop RFP for Preliminary Engineering

# Blackstrap Road

## 21. THIS WILL TAKE SOME TIME...

## **"BEST" SCENARIO**

- 2020: Preliminary Engineering Plan
  - 2021: Referendum Vote to Authorize Expenditures?
- 2021-22: Final Engineering Plan, Bidding
  - 2023-24: Construction start?

## 22. PRELIMINARY ENGINEERING

The Preliminary Engineering Plan will address various design details and provide more precise cost estimate:

• Typical Sections

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STOP

• Other Profiles

- Estimated Quantities
- Geometric Layout
- Drainage Summary
- Cross Sections
- Construction Notes
- Drainage Details

- Signing and Pavement Marking
- Right-of-Way Plans

• Plans & Profiles

NOW WE WANT TO HEAR FROM YOU!

WHAT DO YOU THINK OF THESE DRAFT RECOMMEN-DATIONS?

> WHAT IS YOUR ADVICE?

**CONSTRUCTION METHOD**: Full depth reclamation

### **ROAD CROSS SECTION DESIGN**:

10.5 ft travel lane, 3.5 ft shoulder, no walking path – 28 ft overall width

### **PHASING OPTIONS** (to be decided later):

- Do all at same time: economy of scale
- 2. Do in smaller parts over time: more eligible bidders, lower cost, available State funding? (preferred option)

### **FINANCING:**

- Partnership cost share with MaineDOT
- Town pays for its remaining section (Mountain Road north, 0.8 miles): \$1.36M
- 50-50 cost share for 4 miles of MaineDOT section: \$3.9M each
- Total Town expenditure estimate: \$5.26M



- I. Leave your email address for further project updates
- 2. Check Town website: <u>www.falmouthme.org</u>
- 3. Follow the Town of Falmouth on Facebook and Twitter
- 4. Contact Theo Holtwijk with any questions/comments: <u>tholtwijk@falmouthme.org</u>, 699-5340