

April 30, 2020

Somersworth City Council One Government Way Somersworth, NH 03878

Re: High Street (Route 9) Corridor Traffic Signal Improvements

Dear Mayor Hilliard and Members of the City Council,

Sebago Technics, Inc is pleased to present this summary of the ongoing study and design of the High Street (Route 9) Corridor Traffic Signal Improvement Project. The purpose of the May 4th City Council and Public Meeting is to present the current status of the project and receive feedback from officials and the public on existing issues of concern in the project area. This project is being administered as a NHDOT Local Public Agency (LPA) project using federal Congestion Mitigation and Air Quality (CMAQ) improvement program funding.

The City seeks to upgrade the existing traffic signal and pedestrian infrastructure at the following six intersections along High Street.

- 1. High Street at Blackwater Road/Indigo Hill Road
- 2. High Street at Stackpole Road
- 3. High Street at Walton's Way/Commercial Drive
- 4. High Street at Andrews Road (Target)
- 5. High Street at Tri-City Plaza
- 6. High Street at Kelwyn Drive

Currently the project is in the Engineering Study phase, which will be followed by preliminary/final design and ultimately construction which is currently scheduled for 2021. The objective of this study, which will be submitted to NHDOT for review, is to assess the existing conditions and recommend options to achieve the project goals of improving vehicular traffic flow and to provide for a safer pedestrian experience along the corridor.

The study examines the following items specific to each intersection:

- Vehicular and Pedestrian traffic signal infrastructure, including cabinets and components, Emergency Vehicle Preemption (EVP), and Accessible Pedestrian Signal (APS) buttons
- Communications between the project intersections along High Street
- Communications from High Street to a central management system at City Hall
- and, pedestrian curb ramps to meet current ADA requirements.

Over the past two months we have been coordinating with City Staff to produce this study. The first task was to complete a field inventory of the existing traffic signal and pedestrian equipment. From this inventory observed deficiencies were noted. Based on this inventory of existing conditions and noted deficiencies, a proposed scope of action was developed. This includes items such as upgrading the traffic signal controllers, providing remote communications to modify and monitor the signals, and providing ADA compliant pedestrian facilities. Once these improvements are implemented, it is also critical to

maintain the system, both in terms of infrastructure but also monitoring traffic patterns and adjusting the way the signals are programmed to operate to continuously provide efficient operations.

Included for your information are conceptual plans of the six project intersections highlighting the existing conditions and the currently proposed improvements.

I look forward to presenting project to you (remotely) on May 4th.

Sincerely,

Deal

Derek Caldwell, P.E., PTOE Sebago Technics, Inc Project Manager





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SINGLE POINT VIDEO

DETECTION CAMERA

STRAIN POLE

PEDESTRIAN CURB RAMP

VEHICULAR SIGNAL HEAD

(REFERENCE: NHDOT SIDEWALK CURB RAMP DETAILS)

<u>PLAN</u>

20	0	20	40
		20	
	Scale	of Feet]



- (1.)
- (2) INSTALL NEW GRIDSMART VIDEO DETECTION CAMERA AND PROCESSOR.
- (3.) REMOVE AND REPLACE EMERGENCY VEHICLE PREEMPTION OPTICAL RECEIVERS.(4 TOTAL) INSTALL NEW PREEMPTION DETECTOR CARD IN NEW CABINET.
- (4.)REMOVE EXISTING PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS.
- (5.)
- (6.)

NOTE:

IT IS NOT PROPOSED TO RECONSTRUCT THE EXISTING CURB RAMPS DUE TO RIGHT-OF-WAY LIMITATIONS ON THE NORTHWEST, SOUTHWEST AND SOUTHEAST CORNERS OF THE INTERSECTION. DUE TO THIS LIMITATION IT IS ALSO NOT PROPOSED TO RELOCATE THE PUSHBUTTONS ON THE NORTHWEST AND SOUTHEAST CORNERS AS PART OF THIS PROJECT.

PROPOSED

<u>SCOPE OF PROPOSED IMPROVEMENTS</u>

REMOVE EXISTING CONTROLLER CABINET. INSTALL NEW POLE MOUNTED ATC CABINET. RETAIN EXISTING CONTROLLER.

INSTALL NEW COUNTDOWN PEDESTRIAN SIGNAL HEADS AND APS PUSHBUTTONS ON EXISTING STRUCTURES (3 TOTAL)

INSTALL NEW PEDESTAL POSTS ON SPLITTER ISLANDS WITH NEW COUNTDOWN PEDESTRIAN SIGNALS AND APS PUSHBUTTONS.

REMOVE EXISTING PEDESTAL POLES, PEDESTRIAN SIGNAL HEADS, AND PUSHBUTTONS FROM SLIP LANE LOCATIONS.

<u>PLAN</u> Scale of Feet

DESIGNED DHC	EEBAGO TECHNICS, INC. ANY ALTERATIONS, DATE THOUT LIABILITY TO SEBAGO TECHNICS. INC.
	A DHC 4-27-20 DRAFT ENGINEERING STUDY REV: BY: DATE: STATUS: THIS PLAN SHALL NOT BR HOUT WRITTEN PERMISSION FROM AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND
	WWW.SEBAGOTECHNICS.COM 75 John Roberts Rd. Suite 4A South Portland, ME 04106 Tel. 207-200-2100

SHEET 1 OF 6

ROJECT NO. SCALE

19104 1^{°°} = 20[°]

EXISTING CONDITIONS



<u>OBSERVED DEFICIENCIES</u>

- I. EXISTING PEDESTRIAN SIGNAL HEADS DO NOT HAVE COUNTDOWN DISPLAYS (NOT ADA COMPLIANT)
- 2. EXISTING PEDESTRIAN PUSHBUTTONS ARE NOT APS (NOT ADA COMPLIANT)
- 3. PEDESTRIAN CURB RAMPS NOT ADA COMPLIANT DUE TO EXCEEDING MAXIMUM SLOPES AND NO DETECTABLE WARNING DEVICES. DEFICIENCIES ARE EACH RAMP ARE SHOWN IN THE ABOVE GRAPHIC.
- 4. SIGNAL COORDINATION WITH WALTON'S WAY NOT IN OPERATION.
- 5. ELECTRIC METER PEDESTAL PARTIALLY KNOCKED OVER.

<u>LEGEND</u>					
	EXISTING	PROPOSED			
PEDESTRIAN SIGNAL HEAD		—			
PEDESTRIAN PUSHBUTTON	Ð	Θ			
CONTROLLER CABINET	\bowtie				
EMERGENCY PREEMPTION OPTICAL RECEIVER		-			
PEDESTRIAN CURB RAMP					
SINGLE POINT VIDEO DETECTION CAMERA		-*			
VEHICULAR SIGNAL HEAD					
MAST ARM	0				
METER PEDESTAL					

MAX. RUNNING SLOPE = 8.3% MAX CROSS SLOPE = 2.0%

(REFERENCE: NHDOT SIDEWALK CURB RAMP DETAILS)

CURB RAMP COMPLIANCE STANDARDS

- CLEAR SPACE AREA = 4'X4' AREA MAX. 2.0% ANY DIRECTION

Scale of Feet





- (I)
- (2.) INSTALL NEW GRIDSMART VIDEO DETECTION CAMERA AND PROCESSOR.
- (3) REMOVE AND REPLACE EMERGENCY VEHICLE PREEMPTION OPTICAL RECEIVERS. (3 TOTAL) INSTALL NEW PREEMPTION DETECTOR CARD IN NEW CABINET.
- (4.) REMOVE EXISTING PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS.
- (5)
- 6.) RESET EXISTING METER PEDESTAL.

PROPOSED

SCOPE OF PROPOSED IMPROVEMENTS

REMOVE EXISTING CONTROLLER CABINET AND CONTROLLER. REPLACE WITH NEW ATC CABINET MOUNTED ON EXISTING FOUNDATION. ESTABLISH COORDINATION W/ WALTON'S WAY INTERSECTION.

INSTALL NEW COUNTDOWN PEDESTRIAN SIGNAL HEADS AND APS PUSHBUTTONS ON EXISTING STRUCUTRES. (6 TOTAL)

RECONSTRUCT PEDESTRIAN CURB RAMPS AND INSTALL DETECTABLE WARNING DEVICES FOR ADA COMPLIANCE (4 TOTAL)

PLAN Scale of Feet

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	/5 John Koberts Kd. Suite 44	REV: BY: DATE: STATUS:	ECF		つ
0 1 1 1 0 1 SOMERSWORTH, NEW HAMPSHIRE 03878	South Portland, ME 04106 Tel. 207-200-2100	THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS. INC.	KED	27	



- I. EXISTING PEDESTRIAN SIGNAL HEADS DO NOT HAVE COUNTDOWN DISPLAYS (NOT ADA COMPLIANT).
- 2. EXISTING PEDESTRIAN PUSHBUTTONS ARE NOT APS (NOT ADA COMPLIANT).
- 3. PEDESTRIAN CURB RAMPS NOT ADA COMPLIANT DUE TO EXCEEDING MAXIMUM SLOPES AND NON COMPLIANT DETECTABLE WARNING DEVICES. DEFICIENCIES ARE EACH RAMP ARE SHOWN IN THE ABOVE GRAPHIC.
- 4. SIGNAL COORDINATION WITH STACKPOLE ROAD & ANDREW'S ROAD NOT IN OPERATION.

<u>LEGEND</u>		CURB RAMP CO	
	EXISTING	PROPOSED	MAX CROSS SLOPE CLEAR SPACE AREA
PEDESTRIAN SIGNAL HEAD	\neg	—	
PEDESTRIAN PUSHBUTTON	θ	•	(REFERENCE: NHDOT S
CONTROLLER CABINET			
EMERGENCY PREEMPTION OPTICAL RECEIVER		-	
PEDESTRIAN CURB RAMP			
SINGLE POINT VIDEO DETECTION CAMERA		-*	
VEHICULAR SIGNAL HEAD			
MAST ARM	0		
METER PEDESTAL			

OMPLIANCE STANDARDS

= 8.3% = 2.0%

= 4'X4' AREA MAX. 2.0% ANY DIRECTION

PLAN

Scale of Feet

SIDEWALK CURB RAMP DETAILS)



- (I_{\cdot}) REMOVE EXISTING CONTROLLER CABINET AND CONTROLLER. REPLACE WITH NEW ATC CABINET MOUNTED ON EXISTING FOUNDATION. ESTABLISH COORDINATION W/ ANDREWS ROAD/STACKPOLE ROAD. CENTRAL SERVER FOR CENTRAL TRAFFIC MANAGEMENT SYSTEM.
- (2.) INSTALL NEW GRIDSMART VIDEO DETECTION CAMERA AND PROCESSOR.
- (3.) REMOVE AND REPLACE EMERGENCY VEHICLE PREEMPTION OPTICAL RECEIVERS. (4 TOTAL) INSTALL NEW PREEMPTION DETECTOR CARD IN NEW CABINET.
- (4.) REMOVE EXISTING PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS.
- (5.)

SCOPE OF PROPOSED IMPROVEMENTS

INSTALL COMCAST CABLE COMMUNICATIONS DROP AND CABLE MODEM.CONFIGURE COMMUNICATIONS TO SOMERSWORTH

INSTALL NEW COUNTDOWN PEDESTRIAN SIGNAL HEADS AND APS PUSHBUTTONS ON EXISTING STRUCUTRES. (6 TOTAL) INSTALL PUSHBUTTONS AT SOUTHERN CORNERS WITH EXTENSTION ARMS TO MEET REQUIRED MAX. 10" REACH DISTANCE.

RECONSTRUCT PEDESTRIAN CURB RAMPS AND INSTALL COMPLIANT DETECTABLE WARNING DEVICES FOR ADA COMPLIANCE (4 TOTAL)







SHEET 3 OF 6

1" = 20'

EXISTING CONDITIONS



<u>OBSERVED DEFICIENCIES</u>

- I. EXISTING PEDESTRIAN SIGNAL HEADS DO NOT HAVE COUNTDOWN DISPLAYS (NOT ADA COMPLIANT).
- 2. EXISTING PEDESTRIAN PUSHBUTTONS ARE NOT APS (NOT ADA COMPLIANT).
- 3. PEDESTRIAN CURB RAMPS NOT ADA COMPLIANT DUE TO EXCEEDING MAXIMUM SLOPES AND NON-COMPLIANT DETECTABLE WARNING DEVICES. DEFICIENCIES ARE EACH RAMP ARE SHOWN IN THE ABOVE GRAPHIC.
- 4. SIGNAL COORDINATION WITH WALTON'S WAY AND TRI-CITY INTERSECTIONS NOT IN OPERATION.

	<u>LEGEND</u>			CURB RAMP C
		EXISTING	PROPOSED	MAX. RUNNING SLOPE MAX CROSS SLOPE CLEAR SPACE AREA
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PEDESTRIA	N PUSHBUTTON	Ð	•	(REFERENCE: NHDOT
CONTROLLE	R CABINET	\bowtie		
EMERGENCY OPTICAL RE	PREEMPTION CEIVER	\bigtriangledown	-	
PEDESTRIA	N CURB RAMP			
SINGLE PO DETECTION	INT VIDEO CAMERA		-*	
VEHICULAR	SIGNAL HEAD	>		
MAST ARM		0		
METER PE	DESTAL			

COMPLIANCE STANDARDS

E = 8.3% 2.0% = A = 4'X4' AREA MAX. 2.0% ANY DIRECTION

SIDEWALK CURB RAMP DETAILS)

<u>SCOPE OF PROPOSED IMPROVEMENTS</u>

- (l)
- 2.) INSTALL NEW GRIDSMART VIDEO DETECTION CAMERA AND PROCESSOR.
- INSTALL NEW PREEMPTION DETECTOR CARD IN NEW CABINET.
- (5.)

REMOVE EXISTING CONTROLLER CABINET AND CONTROLLER. REPLACE WITH NEW ATC CABINET MOUNTED ON EXISTING FOUNDATION. ESTABLISH COORDINATION W/ WALTON'S WAY & TRI-CITY INTERSECTIONS.

(3) REMOVE AND REPLACE EMERGENCY VEHICLE PREEMPTION OPTICAL RECEIVERS. (3 TOTAL)

(4.) REMOVE EXISTING PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS. INSTALL NEW COUNTDOWN PEDESTRIAN SIGNAL HEADS AND APS PUSHBUTTONS ON EXISTING STRUCUTRES. (4 TOTAL)

RECONSTRUCT PEDESTRIAN CURB RAMPS AND INSTALL DETECTABLE WARNING DEVICES FOR ADA COMPLIANCE (3 TOTAL)

CIT COR:

SCALE

 $1^{**} = 20^{*}$

PROJECT NO. 19104

SHEET 4 OF 6

- I. PEDESTRIAN CURB RAMPS NOT ADA COMPLIANT DUE TO EXCEEDING MAXIMUM SLOPES AND NO DETECTABLE WARNING DEVICES. DEFICIENCIES ARE EACH RAMP ARE SHOWN IN THE ABOVE GRAPHIC.
- 2. SIGNAL COORDINATION WITH ANDREWS ROAD INTERSECTIONS AND KELWYN DRIVE NOT IN OPERATION.

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AX. RUNNING SLOPE = 8.3% AX CROSS SLOPE = 2.0%

REFERENCE: NHDOT SIDEWALK CURB RAMP DETAILS)

JRB RAMP COMPLIANCE STANDARDS

EAR SPACE AREA = 4'X4' AREA MAX. 2.0% ANY DIRECTION

<u>SCOPE OF PROPOSED IMPROVEMENTS</u>

- (1)
- 2) INSTALL NEW GRIDSMART VIDEO DETECTION CAMERA AND PROCESSOR.
- INSTALL NEW PREEMPTION DETECTOR CARD IN NEW CABINET.
- (4.)
- (5.)

REMOVE EXISTING CONTROLLER CABINET. RETAIN EXISTING CONTROLLER. REPLACE WITH NEW ATC CABINET MOUNTED ON EXISTING FOUNDATION. ESTABLISH COORDINATION W/ ANDREWS ROAD & KELWYN DRIVE INTERSECTIONS.

(3.) REMOVE AND REPLACE EMERGENCY VEHICLE PREEMPTION OPTICAL RECEIVERS. (4 TOTAL)

RELOCATE EXISTING PEDESTRIAN PUSHBUTTON ON SOUTHWEST CORNER TO NEW 4' PEDESTAL POST.

RECONSTRUCT PEDESTRIAN CURB RAMPS AND INSTALL DETECTABLE WARNING DEVICES FOR ADA COMPLIANCE (4 TOTAL)

EXISTING CONDITIONS

- 3. PEDESTRIAN CURB RAMPS NOT ADA COMPLIANT DUE TO EXCEEDING MAXIMUM SLOPES AND NO DETECTABLE WARNING DEVICES. DEFICIENCIES ARE EACH RAMP ARE SHOWN IN THE ABOVE GRAPHIC.
- 4. SIGNAL COORDINATION WITH TRI-CITY INTERSECTION NOT IN OPERATION.

SCOPE OF PROPOSED IMPROVEMENTS

- (1)MOUNTED ON EXISTING FOUNDATION. ESTABLISH COORDINATION W/ TRI-CITY INTERSECTION
- (2.) INSTALL NEW GRIDSMART VIDEO DETECTION CAMERA AND PROCESSOR.
- (3) REMOVE AND REPLACE EMERGENCY VEHICLE PREEMPTION OPTICAL RECEIVERS. (4 TOTAL) INSTALL NEW PREEMPTION DETECTOR CARD IN NEW CABINET.
- (4.) REMOVE EXISTING PEDESTRIAN SIGNAL HEADS AND PEDESTRIAN PUSHBUTTONS.
- 5.) INSTALL NEW 4' PEDESTAL POST AND APS PUSHBUTTON AT NORTHEAST CURB RAMP.

PLAN Scale of Fee PROPOSED

REMOVE EXISTING CONTROLLER CABINET AND CONTROLLER. REPLACE WITH NEW ATC CABINET

INSTALL NEW COUNTDOWN PEDESTRIAN SIGNAL HEADS AND APS PUSHBUTTONS ON EXISTING STRUCUTRES. (6 TOTAL)

6. RECONSTRUCT PEDESTRIAN CURB RAMPS AND INSTALL DETECTABLE WARNING DEVICES FOR ADA COMPLIANCE (4 TOTAL)

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: 4-27-20 DATE:

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