

November 2016

**FEASIBILITY STUDY REPORT**

**Dover 40437**

**X-A004(407)**

**Dover Community Trail Expansion  
Transportation Alternatives Program (TAP)**

*prepared for*

**CITY OF DOVER, NEW HAMPSHIRE**

*prepared by*



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CLD Project No. 16-0109

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# **Dover Community Trail Expansion**

## **DOVER, NEW HAMPSHIRE**

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### **EXECUTIVE SUMMARY:**

The City of Dover applied for, and received, a Transportation Alternatives Program (TAP) grant to complete Community Trail Extension improvements to provide connectivity between the northern and southern portions of the existing trail and to extend the southern portion of the trail. This project is the third phase of the Dover Community Trail; two previous sections were completed earlier in the 2000's. The TAP Grant total is in the amount of \$400,000, of which \$275,000 is dedicated to construction of the improvements.

The northern section of the project, for which the TAP grant will be used, consists of constructing a trailhead and ADA accessible ramp on Tax Map 31 Lot 2, 63 Fourth Street, owned by Osterman Propane. The trailhead will be located adjacent to Fourth Street, next to the Fourth Street Bridge. The ADA accessible ramp will follow the rough existing footpath that people have been using to access the Community Trail from Fourth Street, and will run down the slope from Fourth Street to the existing terminus of the Community Trail along the Cocheco River. From the Fourth Street trailhead, the Community Trail will continue along the City of Dover sidewalk system, with wayfinding signage, to the Transportation Center at 33 Chestnut Street. The beginning trailhead for the existing southern section of the Dover Community Trail is at the rear of the Transportation Center property.

The southern section of the project, for which the TAP grant will be used, will begin at the existing terminus of the Community Trail on Fisher Street. A small trailhead will be constructed adjacent to the sidewalk where the abandoned rail bed on Tax Map 15 Lot 40-A intersects Fisher Street. A bituminous asphalt paved trail is proposed along the rail bed to the intersection of Rutland Street and Central Avenue. At the intersection of Rutland Street and Central Avenue a final trailhead will be constructed and combined with the existing COAST bus stop at this location. Provision for street lights and benches are included as part of the design for this section of the Trail extension.

The City of Dover received a previous grant (13482) in 2001, to study construction of the Community Trail from the Transportation Center to Central Avenue. Early in the design process for this previous grant, it was determined that the entire project could not be funded under the amount available. The Engineering Report (dated March, 2006) for that previous grant project identified phasing for the project to be constructed in segments; the first and second phases have been constructed. In the current project, the southern community trail extension discussed above, was identified as Phase 3. The trailhead and ADA accessible access to the northern Community Trail section, discussed above as the northern section of the current project was added to the scope and the City applied for another round of funding for this slightly expanded Phase 3, which was received and is the subject of this project and report.

The total recommended project cost for the current proposed phase, to be funded under the infrastructure grant (Project No. 40437) is **\$400,000**. The following report summarizes the investigations undertaken for this phase of the Community Trail.

## **I LOCAL CONCERNS MEETING**

Prior to the Project being awarded the City of Dover had been working with a Community Trail Advisory Committee and they had had a series of public meetings to discuss what should be involved in the design on the Community Trail Phase III. On February 16, 2016, the Advisory Committee met and compiled the list of items that they would like to see considered as part of the project design. The design team, CLD Consulting Engineers and Woodburn and Company, are using this list of items to guide the design of the Community Trail. Whatever can be incorporated from the Local Concerns Meeting will be included in the design.

## **II PURPOSE AND NEED STATEMENT**

As The City of Dover continues to grow, effort is being made by community members and City Staff to make the multiple modes of transportation available within the City available and easily accessible by the widest cross-section of the population possible. Amtrak train service via the Downeaster is available to Portland, Maine, and Boston Massachusetts, with many stops in between; Wildcat Transit and COAST Bus Service is available in Dover as well. The Community Trail is both recreational and a means of connecting the people to Dover to these different modes of transportation.

The purpose of the project is to provide a safe, delineated and controlled access route for:

1. Students to travel from a residential neighborhood to Dover Middle and High School; and
2. Alternative access routes for low- to moderate-income residents to follow to reach mass transit options (Wildcat Transit, COAST, the Downeaster) at the Dover Transportation Center and the bus stop at Central Avenue.

The project is needed to complete the four and a half (4.5) mile Community Trail, linking Dover High School in the south, with Watson Road to the north, providing a continuous link through rural and urban portions of the City.

There are two incomplete segments that pose barriers for school children, access to public transportation and access to recreational facilities for disabled residents.

### **Segment 1: Fourth Street Northern Trail Connection:**

The purpose of Segment 1 of this project is to connect the City sidewalk system at Fourth Street to the existing terminus of the Community Trail that is just north of Fourth Street, adjacent to the Cocheco River. Currently a very rough, very steep footpath exists in this location and has been blazed by trail users on the western edge of Tax Map 31 Lot 2, 63 Fourth Street, owned by Osterman Propane. This footpath is not passable by people

requiring accessible access, is just dirt and not a particularly safe means of getting up and down the slope from Fourth Street to the existing trail.

The trail in this location should be improved for safety reasons, to provide connectivity to the trail that would allow pedestrian access to the downtown from Watson Road to the north and if it proves possible to provide ADA accessible access up and down the slope from Fourth Street to the northern portion of the trail system.

**Segment 2: Fisher Street Southern Trail Expansion:**

The purpose of Segment 2 of this project is to continue the Dover Community Trail from Fisher Street, where it currently ends, to a proposed trailhead at the intersection of Rutland Street and Central Avenue. The proposal is to continue the trail along the alignment of the Dover Newington Branch railroad which has been abandoned. Currently there is a COAST bus stop at the location of the proposed Central Avenue trailhead and the municipal sidewalk system continues to the south toward both the Dover Middle School and Dover High School. Extending the trail to this location would provide pedestrian access to the bus stop and the sidewalk to the middle and high schools for a large downtown neighborhood.

**III EXISTING CONDITIONS**

**Roadways**

**Fourth Street**

Fourth Street is a regularly travelled pedestrian way for access to and from the Downtown Commercial District and amenities. Fourth Street also provides connection to the Transportation Center on Chestnut Street and the Community Trail trailhead at the rear of the Transportation Center property. The northern section of the Community Trail ends just north of the Fourth Street Bridge next to the Cocheco River. The existing pavement is 26-ft wide from curb to curb. There is a 5-ft wide concrete sidewalk on the south side of Fourth Street and 286-ft+/- to the east of the proposed trailhead location on the north side of Fourth Street.

**Fisher Street**

Fisher Street is the current terminus of the southern portion of the Community Trail from the Transportation Center as it follows the old Dover Newington Branch rail bed south. The trail terminates on the sidewalk on the north side of Fisher Street. The existing pavement is 28-ft wide from curb to curb. There is a 5-ft wide concrete sidewalk on the north side of Fisher Street. The abandoned Dover Newington Branch rail bed is directly across the street from the Fisher Street terminus of the Community Trail.

**Central Avenue**

Central Avenue is a busy thoroughfare in the City of Dover. Vehicular, bicycle and pedestrian travel are all regular along Central Avenue in a north - south direction. The existing pavement is 40-ft wide from curb to curb in the location of the proposed trailhead. There is a 5-ft wide concrete sidewalk on the west side of Central Avenue.

This sidewalk runs north into downtown Dover and south toward the middle school and high school

### **Drainage**

#### **Fourth Street**

Drainage on Fourth Street is managed by a closed drainage collection system. Catch basins to the east of the Fourth Street Bridge collect runoff and outlet to the Cocheco River. One outfall is in the vicinity of the proposed trailhead. A paved swale also allows some surface runoff to cross the Osterman Propane property and to run to the river in this location. The termination point of the existing northern section of the Community Trail is at the toe of slope from Fourth Street; a small wetland is in the vicinity. The trail itself crosses a small creek via a footbridge with concrete footings.

#### **Fisher Street**

Storm water is collected by catch basins in Fisher Street. This system drains to a wetland to the west of the proposed trailhead and start of the trail continuation.

#### **Central Avenue**

Storm water is collected by catch basins in Central Avenue. This system drains to the Cocheco River on the west side of the Spaulding Turnpike overpass.

### **Utilities**

Overhead utilities exist in the project area, including power, phone and cable. Underground water and sewer mains owned by the City of Dover pass through the project area. The existing conditions plan shows the utility facility locations, which were surveyed by CLD field crews or obtained based on reference plans. The utilities are not expected to be affected by the project.

### **Pedestrian Facilities**

Sidewalk exists on Fourth Street, Fisher Street and Central Avenue; however, no sidewalk exists on Fourth Street on the north side of the road from the proposed segment 1 trailhead to the Fourth street sidewalk for a distance of 286-ft+/-.

## **IV DESIGN CRITERIA**

The following standards will be utilized to the extent that is reasonable for this project. Due to the scope of the project, design of the new facilities will be controlled by existing conditions at the project site.

### **A. Design References:**

) NHDOT Highway Design Manual

- J NHDOT Standard Specifications for Road and Bridge Construction, 2010
- J ADA Accessibility Guidelines, 2010
- J Roadside Design Guide, AASHTO 2011
- J AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities, 1st Edition 2004
- J AASHTO Guide for Development of Bicycle Facilities 2012

## **V ENVIRONMENTAL REVIEW AND DOCUMENTATION**

The coordination efforts with regard to environmental resources for the project followed the regulations for Federally-funded transportation projects.

### **Natural Resources**

The project was presented to the Natural Resource Agency Coordination Meeting on September 21, 2016. The project team explained that the segment 1 ramp work would, regardless of most alternatives, generate 750-sf to 1500-sf of wetland impact at the toe of slope of the ramp as the ramp and connection to the northern Community Trail section is created. Segment 2 of the Community Trail can be constructed to avoid wetland impacts and minimize disturbance to the area along its alignment.

Segment 1, Fourth Street, is located in the Cocheco River Protected Shoreland, and within a Designated River segment. NHDES One Stop data search noted the Cocheco River (Trail Segment 1) is impaired for Chlorophyll-a, Enterococcus, Fecal Coliform and Nitrogen. The project is not expected to have adverse impacts on the impairment. It is also located in the FEMA Regulated Floodplain and Floodway for Cocheco River. Project proposes balancing of cuts / fills to provide equivalent waterway capacity; therefore no increase in Floodplain or Floodway is expected.

Segment 2, Fisher Street to Central Avenue, is located within the Bellamy River watershed. The NHDES One Stop data search noted the Bellamy River (trail Segment 2) is impaired for Fecal Coliform and Nitrogen. The project is not expected to have adverse impacts on the impairment. The Segment 2 area includes monitoring wells along the corridor behind the gas station at the intersection of Central Avenue and Locust Street and behind Nouria Energy and Moore Business Forms/Agility MFG Inc. Well covers will be adjusted to final grades and no other impacts are anticipated. Wetland impacts are anticipated to be negligible to Forested Wetland (there may be some minor impact for drainage culverts yet to be designed). Impacts can be minimized by lowering the railbed elevation to provide required width of trail and shoulders. Minimum trail width with railing and steep slopes can be used in wetland areas to limit impacts.

The determination at the September Natural Resources Coordination Meeting was that the project would not require further coordination. This decision was reached because

the alternatives studied present only minimal and reasonable impact to the natural resources in the area, and avoidance and minimization were being exercised.

### **Cultural Resources**

After review of the scope of work, the NHDHR determination was that there is no effect, pending an archeological sensitivity review. NHDHR completed review and noted no archeological concerns appear to be present, but as always, for the project team to bring any new information to light if it becomes available. NHDHR requested that the design avoid mature trees and that if encountered stone box culverts and other potentially historic railroad structures, if requiring removal or other impacts, be consulted with NHDHR. NHDHR issued their response on August 30, 2016.

Jillian Edlemann, NHDOT Cultural Resources Manager, was consulted regarding the need for a Cultural Resources Agency Coordination Meeting. In light of NHDHR's response and the limited potential for the project to impact Historic properties, Ms. Edlemann stated that the project did not need to appear before the Cultural Resources Agency. Ms. Edlemann relayed this on September 26, 2016.

### **Other Resources**

The following are other resources that were contacted and responses to this project:

- J) **US Fish and Wildlife Service:**  
USFWS has no record of Federally-listed or proposed, threatened, or endangered species or critical habitats within this project area, other than the Northern Long Eared Bat (NLEB), which is listed throughout the entire state of New Hampshire. A 4(d) streamlined consultation form for NLEB has been prepared and provided to Michael Hicks of the Army Corp of Engineers, the lead Federal agency for the project to be forwarded to the USFWS. The results of their review are pending. Previous project experience would lend to the USFWS limiting the time of year tree cutting and clearing can take place, which can be accommodated into project contract documents as the design develops.
- J) **NH Office of Energy and Planning National Flood Insurance Program:** The proposed project is partially located in the floodway or special flood hazard areas as shown on the FEMA Maps and a Letter of Map Amendment (LOMA) will need to be prepared.
- J) **NH Office of Energy and Planning's Conservation Land Stewardship / Land Conservation Investment Program:** No lands within the project area that have used LCIP monies.
- J) **NH Department of Resources and Economic Development, Division of Parks and Recreation:** There are no 6(f) properties in Dover within the project area. The proposed project should have no impact to the 6(f) properties.



) **NH Natural Heritage Bureau:**

Review of data-base yielded no records of rare species or exemplary natural communities in the project area; however, NHB did make the project team aware that there are records of New England Cottontail Rabbit in Dover on Knox Marsh Road roughly 1 to 1.5 miles away to the west on the other side of the Spaulding Turnpike.

## VI ALTERNATIVES ANALYSIS

This project is unique in that the bulk of the work is proposed in the location of an old rail bed and railroad right of way. The rail right of way has been absorbed by adjacent parcels and is now owned privately. The alignment of the trail is somewhat dictated by the location of the old rail bed within the project area; therefore, few alternatives have been explored, however a discussion of the alternatives that were explored follows.

### **Segment 1, Fourth Street Trailhead and Trail Access:**

#### **Alternative 1: Null Alternative:**

The null alternative, or doing nothing, in the location of Segment 1 as proposed would not provide safe, delineated and controlled access from the existing portion of the Community Trail which ends just north of Tax Map 31 Lot 2, 63 Fourth Street, owned by Osterman Propane. Trail users would continue to walk across the Osterman Propane property and up the steep slope to Fourth Street along a foot path with no real defined alignment or width. The following is a brief outline discussion of this alternative:

- ) Alignment; the alignment of the existing footpath appears to change over time depending on weather impacts and particular travelers desires.
- ) Width; the width of the existing footpath varies from 8-ft+/- at the formal termination of the existing foot path at the footbridge north of the proposed segment 1 location to no more that 2-ft as a person on the path would travel up the slope to Fourth Street.
- ) Length; the path in this area is 345-ft.
- ) Material; the material of the footpath is dirt. It is a worn path created by people walking the same rough path over and over again.
- ) Environmental Impact; the null alternative does have an environmental impact. Currently, foot traffic goes through wetlands and has contributed to pedestrians impacting natural resources in the wetlands. With no formalized trail the potential for continued wandering through the wetland is high.
- ) Utilities; there are no utilities within the trail area. Utilities do occupy space within the Fourth Street right of way; however, the “do nothing” option will not impact them.
- ) Estimated Cost; \$0
- ) Concept Level Plans; Concept Level Plans are not needed for the null alternative.

**Alternative 2: Preferred Alternative:**

The preferred alternative in the location of Segment 1 would be to define a Trailhead adjacent to Fourth Street on the west side of Tax Map 31 Lot 2, 63 Fourth Street, owned by Osterman Propane, to define a safe, ADA accessible access to the existing Community Trail that stops just to the north of Tax Map 31 Lot 2 and to connect it to the sidewalk on the north side of Fourth Street with a short section of additional sidewalk in front of Downeast Energy (Osterman Propane).

With a defined trail location, trail users would be much less likely to walk through the wetlands. If the Trail access from Fourth Street to the existing trail to the north were accessible more trail users could traverse more of the trail system. The preferred means to accomplish this is with the least amount of impact to the surrounding area and the least amount of construction. For ease the preferred method of construction would be to create an accessible ramp with earthwork construction and pavement. The following is a brief outline discussion of this alternative:

- J) Alignment: by refining the alignment of the trail down the slope to the existing Community trail, the trail can be moved away from the Cocheco River, while making it ADA accessible and shorter.
- J) Width: the width of the existing footpath at the footbridge to the north is 8-ft. The concept developed for the preferred alternative includes a 10-ft width of paved trail with 2-ft shoulders from Fourth Street to the existing trail.
- J) Length: the re-aligned trail access is 300-ft long. It actually becomes shorter and moves 26-ft east of the existing trail along the river.
- J) Material: the material of the proposed Community Trail Access Ramp is bituminous asphalt with crushed gravel base course and shoulders. The connection from Fourth Street to the existing Trail will be a ramp so it will require handrail.
- J) Environmental Impact: this alternative does have an environmental impact; however, it will be a one-time impact versus the current scenario that allows trail users to walk through the wetland. The wetland impact created will require a properly sized culvert and permit from NHDES but it will stop trail users from wandering though the wetland in the low area looking for the driest flattest path. The re-alignment will also pull the trail away from the river, allowing the existing footpath to revert to natural conditions, scrub shrub and trees.
- J) Utilities: there are no utilities within the trail connection area. The work proposed for the trailhead may have some interaction with closed drainage and a paved swale. This will need to be addressed if this alternative moves to full design. Water, sewer, overhead electric, telephone and cable television do occupy space within the Fourth Street right of way. The water and sewer are within the road bed and the overhead utilities are on the opposite side of Fourth Street. There

should be minimal impact to these utilities created by the extension of the sidewalk on the north side of Fourth Street should this alternative move forward.

) Estimated Cost; \$84,000

) Concept Level Plans; Concept Level Plans are attached in Appendix C.

**Alternative 3: Following the Existing Alignment of the Footpath:**

One alternative in the location of Segment 1 that was considered was to define a Trailhead adjacent to Fourth Street on the west side of Tax Map 31 Lot 2, 63 Fourth Street, owned by Osterman Propane, and to construct a safe, ADA accessible access to the existing Community Trail that stops just to the north of Tax Map 31 Lot 2 along the existing footpath that people have trailblazed up the slope to Fourth Street and to connect it to the sidewalk on the north side of Fourth Street with a short section of additional sidewalk in front of Downeast Energy (Osterman Propane).

With a defined trail location, trail users would be much less likely to walk through the wetlands. If the Trail access from Fourth Street to the existing trail to the north were accessible more trail users could traverse more of the trail system. The preferred means to accomplish this is with the least amount of impact to the surrounding area and the least amount of construction. For ease, the preferred method of construction would be to create an accessible ramp with earthwork construction and pavement. The following is a brief outline discussion of this alternative:

) Alignment; the alignment of the access to the trail would be essentially the same as the footpaths.

) Width; the width of the existing footpath at the footbridge to the north is 8-ft. The concept developed for the preferred alternative includes a 10-ft width of paved trail with 2-ft shoulders from Fourth Street to the existing trail.

) Length; the re-aligned trail access is 345-ft long.

) Material; the material of the proposed Community Trail Access Ramp is bituminous asphalt with crushed gravel base course and shoulders. The connection from Fourth Street to the existing Trail will be a ramp so it will require handrail.

) Environmental Impact; this alternative does have an environmental impact. Without any structure such as a retaining wall the impacts would have been much greater than the anticipated 750-sf to 1500-sf of alternative 2. In all likelihood a 2:1 slope would have gotten very close to the river if not into the river. The Impact to the floodway storage volume would have been unacceptable as well.

Following the same alignment and employing a retaining wall would have been possible; ,however the impact to flood storage while lessened would still remain.

The cost of the retaining wall would also be prohibitive in the scope of this project.

- ) Utilities; there are no utilities within the trail connection area. The work proposed for the trailhead may have some interaction with closed drainage and a paved swale. This will need to be addressed if this alternative moves to full design. Water, sewer, overhead electric, telephone and cable television do occupy space within the Fourth Street right of way. The water and sewer are within the road bed and the overhead utilities are on the opposite side of Fourth Street. There should be minimal impact to these utilities created by the extension of the sidewalk on the north side of Fourth Street, should this alternative move forward.
- ) Estimated Cost; No cost estimate was generated.

As can be seen, totaling the cost the preferred alternatives for segment 1 and segment 2, one advantage of the preferred alternatives being recommended is the construction estimate shows that the work should be possible within the budget of the project and grant. The addition of structural elements to any part of the project would make the whole project unable to be constructed, requiring only one segment or the other to be constructed.

- ) Concept Level Plans; Because the cost would have been prohibitive no concept plan was developed.

### **Segment 2, Fisher Street to Central Avenue:**

#### **Alternative 1: Null Alternative:**

The null alternative, or doing nothing, in the location of Segment 2 as proposed would not provide safe, delineated and controlled access from the existing portion of the Community Trail which ends between Tax Map 12 Lots 113 and 139 on the north side of Fisher Street 2. Once trail users would cross the street and continue down the old rail bed the trail is no longer defined and trail users could trespass on private properties adjacent to the old rail bed as well as the Double Diamond properties the old rail bed is on. Following is an outline discussion of this alternative:

- ) Alignment; a rough foot path follows the alignment of the old rail line. The further south you walk along the old rail line the thicker the vegetation becomes.
- ) Width; the width of the existing footpath varies between 8-ft and 1 to 2-ft depending on the vegetation.
- ) Length; the path in this area is 2,146-ft.
- ) Material; the material of the footpath is dirt. It is a worn path created by people walking the same rough path over and over again.

- J Environmental Impact / Impacts; the null alternative does have environmental and trespassing impacts. Currently, foot traffic follows an unmaintained path and has contributed to pedestrians impacting natural resources in the area, and littering. With no formalized trail the potential for continued wandering through this area is high and can create potential trespassing issues with abutters.
- J Utilities; there are no utilities within the trail area. Utilities do occupy space within the Central Avenue right of way, however, the “do nothing option will not impact them.
- J Estimated Cost; \$0
- J Concept Level Plans; Concept Level Plans are not needed for the null alternative.

**Alternative 2: Preferred Alternative:**

The preferred alternative in the location of Segment 2 would be to define a small Trailhead adjacent to Fisher Street on its south side, a Trailhead at the Coast bus stop on Central Avenue and to define a safe, ADA accessible trail connecting the two proposed trailheads and expanding the Community Trail system.

With a defined trail location, trail users would be much less likely to walk through onto abutting properties. With amenities like trash receptacles, benches and lighting, trail users would be safer and be less likely to litter or stray into areas of environmental sensitivity.

The preferred means to accomplish this is with the least amount of impact to the surrounding area and the least amount of construction. For ease the preferred method of construction would be to perform limited clearing and earthwork construction and pavement. The following is a brief outline discussion of this alternative:

- J Alignment; the trail alignment would follow the existing, abandoned rail bed for the most part, only being re-aligned where it either makes sense to do so for ease of construction, wetland avoidance or to respect abutter privacy concerns.
- J Width; the proposed width of trail would be 10-ft paved with 2-ft gravel shoulders, except where avoiding wetland impacts dictate a smaller cross-section. In areas of wetland avoidance a cross-section of 8-ft paved width and 2-ft gravel shoulders is proposed. These areas would also have 2:1 slopes and hand rail as necessary.
- J Length; the proposed trail between Fisher Street and Central Avenue is 2,146-ft.
- J Material; the material of the proposed Community Trail is bituminous asphalt with crushed gravel base course and shoulders. In areas of 2:1 side slope handrail will be necessary. Areas for benches will be provided. Benches may be constructed by Rotary or other volunteer organizations. Lighting will also be provided as needed along with trash receptacles. Stormwater will be conveyed

with cross-culverts as needed, and treated with rain gardens when possible. Fence will be provided where the trail is too close to abutting properties.

- ) Environmental Impact / Impacts; this alternative does have an environmental impact; however, it will be a one-time impact versus the current scenario that allows trail users to walk through the area unguided, without amenities like benches and trash receptacles. Any wetland impact created will be minimal, for the installation or upgrade of cross culverts. Fence will be provided to minimize impacts to privacy of abutting properties.
- ) Utilities; there are no utilities within the trail connection area. The work proposed for the trailhead may have some interaction with closed drainage and a paved swale. This will need to be addressed if this alternative moves to full design. Water, sewer, overhead electric, telephone and cable television do occupy space within the Fourth Street right of way. The water and sewer are within the road bed and the overhead utilities are on the opposite side of Fourth Street. There should be minimal impact to these utilities created by the extension of the sidewalk on the north side of Fourth Street should this alternative move forward.
- ) Estimated Cost; \$202,000
- ) Concept Level Plans; Concept Level Plans are attached in Appendix C.

## **VII STRUCTURE STUDIES AND RECOMMENDATIONS**

The preferred alternative for the Dover Community Trail Expansion project does not require structural studies be performed or that structural recommendations be prepared. Early alternatives explored would have required such study; however, the cost of these alternatives, which included alignments requiring retaining walls, proved to be too costly. The preferred alternative will not require any structural improvements; therefore, no structural studies or recommendations are necessary.

## **VIII COST ESTIMATE AND ENGINEER'S ESTIMATE**

The project will be funded through the Transportation Alternatives Program (TAP), administered by the NHDOT. Total approved budget for the project is \$400,000, 80% of which is reimbursed to the Town from the TAP grant. Project administration, development and construction must follow Federal guidelines and requirements for Federally-funded projects.

See Appendix A for line item cost estimate totaling \$457,000. The City is currently investigating alternatives to cover the budget shortfall.

## **IX PUBLIC PRESENTATION OF PREFERRED ALTERNATIVES**

On September 27, 2016, CLD Consulting Engineers, Inc. attended a public hearing at the Dover Planning Board to present the preferred alternatives for the Dover Community Trail Expansion project.

Overall the Planning Board and those present were supportive of the alternatives and approach presented. Mr. Stephen Gitschier, the abutter to the project at Tax Map 15 Lot 15, 104 and 106 Rutland Street, was concerned about the trail's proximity to his property line and requested that every effort be made to keep the trail as far from his property as possible.

CLD Consulting Engineers, Inc. will take Mr. Gitschier's concerns into account during the final design of the trail alignment and will make every effort to keep the trail away from his property. CLD also expressed that as part of the project screening either vegetative or fence is being provided to concerned abutters.

The minutes to this meeting can be found in Appendix B of this Study.

## **APPENDIX A**

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PROJECT NAME:	Dover Community Trail	
PROJECT NO.:	16-0109	
SHEET NO.:	1	OF 1
CALCULATED BY:	JLF	DATE: 8/8/2016
REVISED BY:	DAD	DATE: 9/2/2016
CHECKED BY:	JLF	DATE: 9/5/2016

SUBJECT: Conceptual Estimate

### NHDOT TAP #40437 - Dover Community Trail Expansion

#### Segment 1 - Fourth Street Bridge Trailhead & Ramped Trail

Earthwork	\$	2,400
Select Materials	\$	5,200
Pavement	\$	5,800
Railing / handrail	\$	23,250
Slope stabilization	\$	15,400
Drainage	\$	1,720
Trailhead	\$	10,000
Sidewalk	\$	5,100
Signage	\$	500
Pavement Markings	\$	500
Miscellaneous (10%)	\$	7,065
Mobilization (10%)	\$	7,065
<b>Segment 1 Subtotal</b>	\$	<b>84,000</b>

#### Segment 2 - Fischer Street to Central Avenue

Earthwork	\$	23,100
Select Materials	\$	33,600
Pavement	\$	35,000
Railing / handrail	\$	15,000
Slope stabilization	\$	11,900
Drainage / Stormwater Treatment	\$	5,880
Privacy Fencing (for abutters)	\$	12,500
Trailheads	\$	30,000
Signage	\$	500
Pavement Markings	\$	500
Miscellaneous (10%)	\$	17,010
Mobilization(10%)	\$	17,010
<b>Segment 2 Subtotal</b>	\$	<b>202,000</b>

#### Project Wide Items

Erosion Control Plan and Monitoring	\$	7,500
Maintenance of Traffic	\$	2,500
Construction Signing	\$	1,500
Miscellaneous (10%)	\$	1,250
Mobilization (10%)	\$	1,250
<b>Project Wide Subtotal</b>	\$	<b>14,000</b>

		<b>TAP Budget</b>
<b>Construction Costs</b>	\$ 300,000	\$ 275,000
<b>Preliminary Engineering</b>	\$ 69,000	\$ 41,000
<b>Right of Way</b>	\$ 43,000	\$ 43,000
<b>Construction Eng. (15% of Constr)</b>	\$ 45,000	\$ 41,000
<b>PROJECT TOTAL</b>	\$ 457,000	<b>\$ 400,000</b>

## **APPENDIX B**

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## COMMUNITY TRAIL AMENITY DESIGN LIST FOR CONSULTANT

February 16, 2016

### 1. Primary Construction - trail components, site prep, etc.

Keep rural, rural but mitigate drainage issues

Ramp or ramp/staircase at 4<sup>th</sup> Street

4<sup>th</sup> Street ramp/bike channel

### 2. Secondary Construction - additions, enhancements, etc.

Benches

Trash/recycle bins at trail heads

Lighting if possible at trail heads or where consultant suggests

Bike rack at transportation center

Sculpture, art work locations in design

Exercise station locations in design

Kiosks at Whittier and Fisher

### 3. Information/Signage

Kiosks at Whittier/Fisher

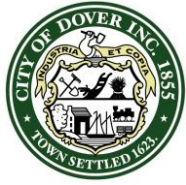
Mile markers locations indicated in design

### 5. Maintenance and Safety

Least invasive construction practices

Trash pick up

Tree removal



CITY OF DOVER

## DOVER PLANNING BOARD – MINUTES

Meeting Type: Regular Meeting  
Meeting Location: Council Chambers – City Hall, 288 Central Avenue  
Meeting Date: **Tuesday, September 27, 2016**  
Meeting Time: **7:00 pm**

**Members Present:** Frank Torr (Chair), Kirt Schuman (Vice Chair), Dennis Ciotti (Councilor), Tom Clark, Dave White, Gina Cruikshank, Catherine Plante, David Landry

**Members Not Present:** Lee Skinner

**Staff Present:** Donna Benton (Assistant City Planner), Tracy Smith (Recording Secretary)

The Chair called the meeting to order at 7:00 p.m. F.Torr announced there are Alternate positions available on the Planning Board for anyone interested.

### 1. CITIZENS' FORUM

*Citizens Forum Open. Nobody Spoke. Citizens Forum Closed*

### 2. APPROVAL OF THE PRIOR MINUTES

- September 13, 2016 Regular Meeting Minutes

**Motion:** K.Schuman made a motion to approve the September 13, 2016 Regular Meeting Minutes. Seconded by D.Ciotti. Vote U/A

### 3. OLD BUSINESS

K.Schuman stated items 3.A and 3.B would be heard together.

- A. Consideration and acceptance of a Conditional Use Permit for Quantum Real Estate Group, LLC (Owner: Michael Rosholt), Assessor's Map C, Lot 50-A, zoned R-40, located at 84 Watson Road (Proposal is to install a 12" HDPE culvert and a 20 ft. common driveway with a 1,505 sq. ft. Forested Wetland impact, and a 4,630 sq. ft. Wetland Buffer impact). \*(P16-22)
- B. Consideration and acceptance of an Open Space Subdivision for Quantum Real Estate Group, LLC (Owner: Michael Rosholt), Assessor's Map C, Lot 50-A, zoned R-40, located at 84 Watson Road (4 lots). \*(P16-23)

**Motion:** K.Schuman made a motion to remove items 3.A and 3.B from the table. Seconded by C.Plante. Vote U/A

D.Benton provided the update regarding the applications.

Bob Stowell, Tritech Engineering, represented the applicants, displayed an aerial plan for viewing, and presented the updated information regarding the proposed plan. He answered Board member questions regarding the fire department concerns pertaining to the hammerhead driveway, and clarification regarding the percentage of upland open space.

*Public Hearing Opened.*

Paula Lavoie, 96 Watson Road, stated her concerns regarding developing near wetlands, tree removal, drilling and fracking, water and drainage issues as a result of development, property value impacts, the loss of privacy and quality of life, the need for no hunting or encroachment signs to be established, the education costs per child, and confirmation that no wells are to be installed. She requested clarification of the wetland buffer impact.



CITY OF DOVER

## DOVER PLANNING BOARD – MINUTES

Meeting Type: Regular Meeting  
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Meeting Time: **7:00 pm**

Apryl Cowper, 94 Watson Road, stated her agreement with her neighbor and her concern that the decision regarding the property had already been decided. She further stated she had been previously told the wetlands near her property could not be developed.

Sherrie Towle, 379 Tolend Road, requested clarification of information discussed at the site walk regarding the open land easement with secondary monitoring. She stated her concern regarding the Homeowner Association (HOA) in charge of the open land and the possibility of future changes affecting her property without secondary monitoring.

D.Benton addressed the abutter concerns regarding clarification pertaining to the no-cut, no-disturb regulations, that the “no hunting” policy is up to the property owner, the education cost for children is not taken into account other than impact fees, clarification regarding the buffers, waivers, and wetlands impact. She stated that the Conservation Commission has not met since the site walk but that the recommendation would probably be for the HOA to be responsible for the conservation easement.

B.Stowell addressed the abutter concerns regarding developing in proximity to abutters with an open space concept with a 50 ft. buffer as part of the regulations, screening on the buffer, and that the applicant has no problem with posting a “no hunting” sign.

A.Cowper stated her concern with the site walk done in September, and the buffer would look different when the leaves are off the trees.

P.Lavoie stated her concern regarding the need for a secondary monitor for the conservation land.

*Public Hearing Closed.*

Discussion ensued regarding clarification that the plan indicate the drive is private, the conservation land proposed as restricted, and conservation easement property owned by S.Towle.

D.Ciotti addressed A.Cowper’s comments to what she was told about her property and wetlands not being buildable and that those comments cannot be considered unless it was indicated in the deed.

Discussion continued regarding the 20 ft. common driveway location and the abutter impact, and clarification of the location of the City water line.

### **STAFF RECOMMENDATION: (P16-22)**

The Planning Department recommends the Planning Board approve the Conditional Use Permit with the following conditions:

#### **Conditions to Be Met Prior to the Issuance of the Conditional Use Permit:**

1. NH DES Wetlands Permit is granted and a copy of the permit submitted to the City.
2. The subdivision plan (P16-23) shall be approved.

**Motion:** C.Plante made a motion to approve the Conditional Use Permit subject to the staff recommended conditions. Seconded by G.Cruikshank. Vote U/A

### **STAFF RECOMMENDATION: (P16-23 WAIVER)**

The Planning Department recommends that the Board approve the waiver request to allow the driveway in the buffer. The Planning Department recommends adding the following condition:



CITY OF DOVER

## DOVER PLANNING BOARD – MINUTES

Meeting Type: Regular Meeting  
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### Conditions to Be Met Prior to Signing of Plans:

1. A note shall be added to the subdivision plan that the Board has granted the waiver for the reasons stated by the applicant, and the Board finds that the criteria of Chapter 155-51.A have been met.

**Motion:** D.White made a motion to approve the waiver subject to the staff recommended condition. Seconded by T.Clark. Vote U/A

### STAFF RECOMMENDATION: (P16-23 SUBDIVISION PLAT)

The Planning Department recommends approval of the subdivision plat with the following conditions:

### Conditions to Be Met Prior to Signing of Plans:

1. The owner's signatures shall be added to the final plat submitted for signature.
2. The Licensed Land Surveyor and Professional Engineer stamp and sign final plans.
3. The applicant shall provide the Planning Department with a digital version of the final plat.
4. The applicant shall revise the plat to:
  - a. Include a revised Current Use plan for the property to the Tax Assessor's satisfaction.
  - b. Clearly indicate that the drive is private on the plan.
5. The hydrant and drive construction shall be revised to the satisfaction of the Fire Department and Community Services Department.
6. The applicant must submit proposed Homeowner's Association Documents addressing access to the open space lot, preservation of perimeter landscaping, and ownership and maintenance of common areas including open space, lighting, drainage infrastructure and utilities. These documents must be reviewed by the Planning Department, with consultation by the City Attorney on compliance with conditions.
7. The applicant shall ask another entity to be second position for monitoring the conservation easement and shall provide said entity's written response to the Planning Department.

### Conditions to Be Met Prior to Any Construction Activity:

8. Construction hours shall be limited to Monday-Friday 7 AM-6 PM, Saturday 8 AM-5 PM, with no Sunday hours. Hours of construction shall be documented on a site construction sign along with the contact information for the general contractor. Said signage shall be located and approved by the City Engineer or Assistant City Manager.

### Conditions to Be Met Prior to Issuance of a Building Permit:

9. Any new dwelling unit shall be assessed the current impact fees in place at the time of building permit application.
10. Any new dwelling unit shall be assessed the current water investment fee in place at the time of application for water service.

### Condition to Be Met Prior to Issuance of a Certificate of Occupancy:

11. The applicant shall provide a letter of credit or other form of security acceptable to the City for any unfinished work.

Discussion ensued regarding clarification to the conditions, vegetative shield in the buffer and the ordinance as it relates to the buffer between dwellings and the property lines, and clarification regarding patching the road for the City water line installation.

**Motion:** T.Clark made a motion to approve the Subdivision Plat subject to the staff recommended condition. Seconded by D.White. Vote U/A



CITY OF DOVER

## DOVER PLANNING BOARD – MINUTES

Meeting Type: Regular Meeting  
Meeting Location: Council Chambers – City Hall, 288 Central Avenue  
Meeting Date: **Tuesday, September 27, 2016**  
Meeting Time: **7:00 pm**

### 4. NEW BUSINESS

- A. Update and Public Hearing on the Transportation Alternatives Program funded project by CLD Consulting Engineers for Phase III of the Community Trail, to expand the paved section of the trail from Fisher Street to Route 108 and to improve access to the rural section off of Fourth Street. The Community Trail Advisory Committee is invited to hear the update and join the Planning Board's discussion. \*

D.Benton provided an overview of the project.

Rick Lundborn, CLD Engineering, displayed plans and images for viewing, presented the project, and provided the update regarding the timeline and budget for the proposed plan. He answered Board member questions regarding parking locations, the timing of the construction and process according to the federal grant, plans in place for a bicycle lane near the school and the location, clarification regarding no existing extension of the plan to County Farm Crossroad, the enjoyment of the Community trail, and a stone culvert located on County Farm Crossroad built in the 1800s that needs to be explored.

*Public Hearing Opened.*

Steve Gitschier, 104-106 Rutland Street, stated his concern regarding the parking lot and bike path encroaching his property. He requested a scale on the plans to confirm these would be located 50 ft. from his property line.

Discussion ensued regarding an agreement made in 2008 to have the parking lot and bike path 50 ft. from the property line, that a privacy fence would be provided, and S.Gitschier's request to plant trees.

Bryant Hardwick, 129 Portland Avenue, thanked the Community Trail Advisory Committee, D.Benton as their liaison, and the Board members. He stated his approval of the project.

*Public Hearing Closed.*

Discussion ensued regarding clarification of the GIS research pertaining to the project, endorsement for the research and the process for the public.

**Motion:** K.Schuman made a motion to endorse the project. Seconded by D.Ciotti. Vote U/A

### 5. STAFF COMMENTS

D.Benton announced the joint Planning Board meeting with the City Council on October 5<sup>th</sup>, 2016 to review the CIP.

### 6. MEMBER COMMENTS

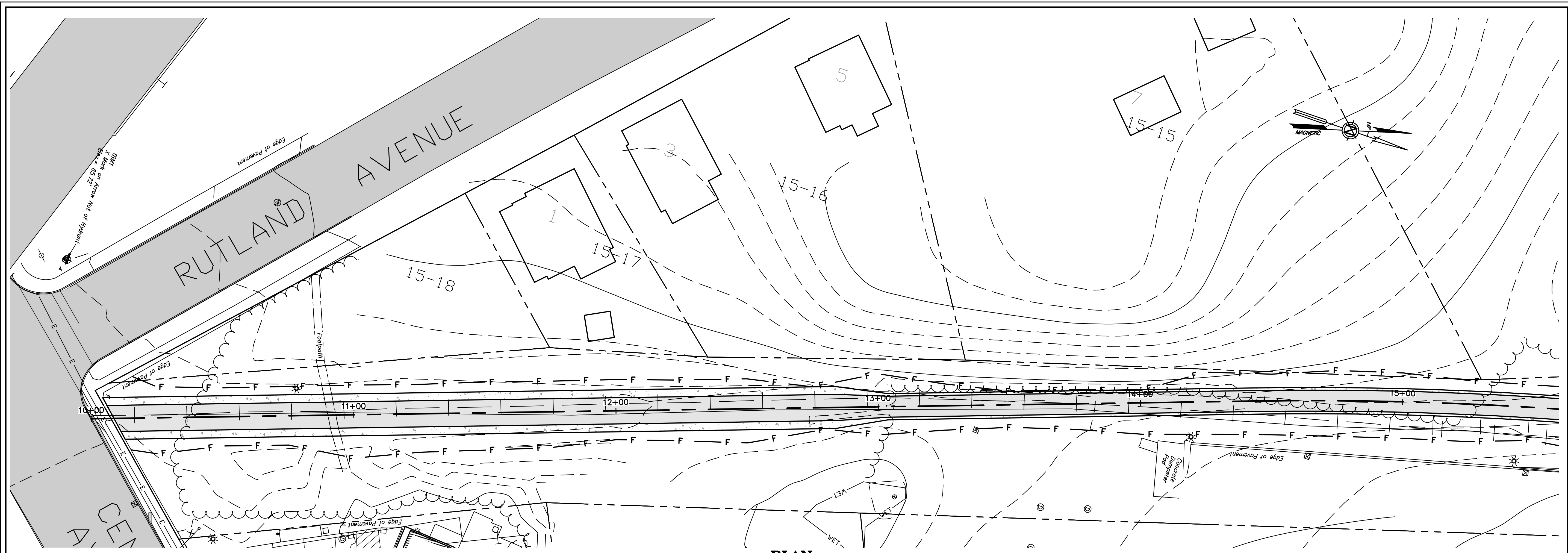
### 7. ADJOURNMENT

**Motion:** K.Schuman made a motion to adjourn at 8:07 p.m. Seconded by C.Plante. Vote U/A

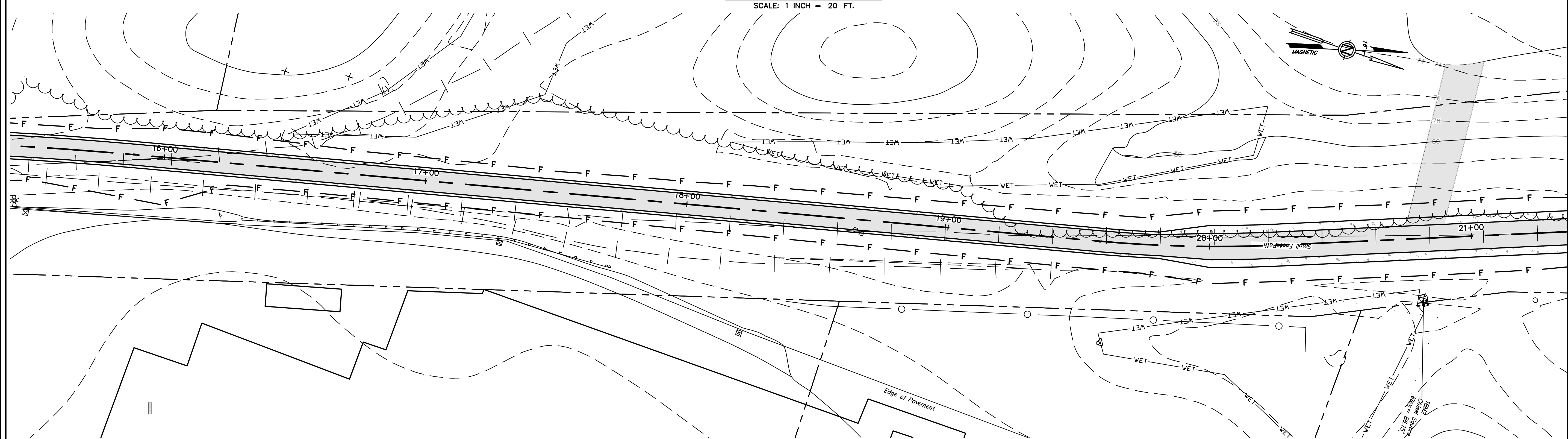
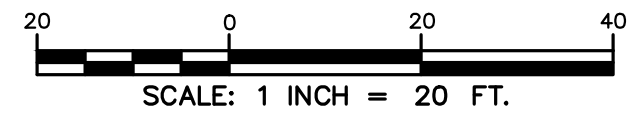
## **APPENDIX C**

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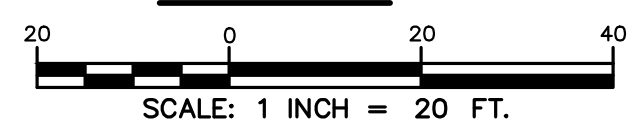




**PLAN**



**PLAN**



#	DATE	DESIGNED:	CHECKED:	APPROVED:

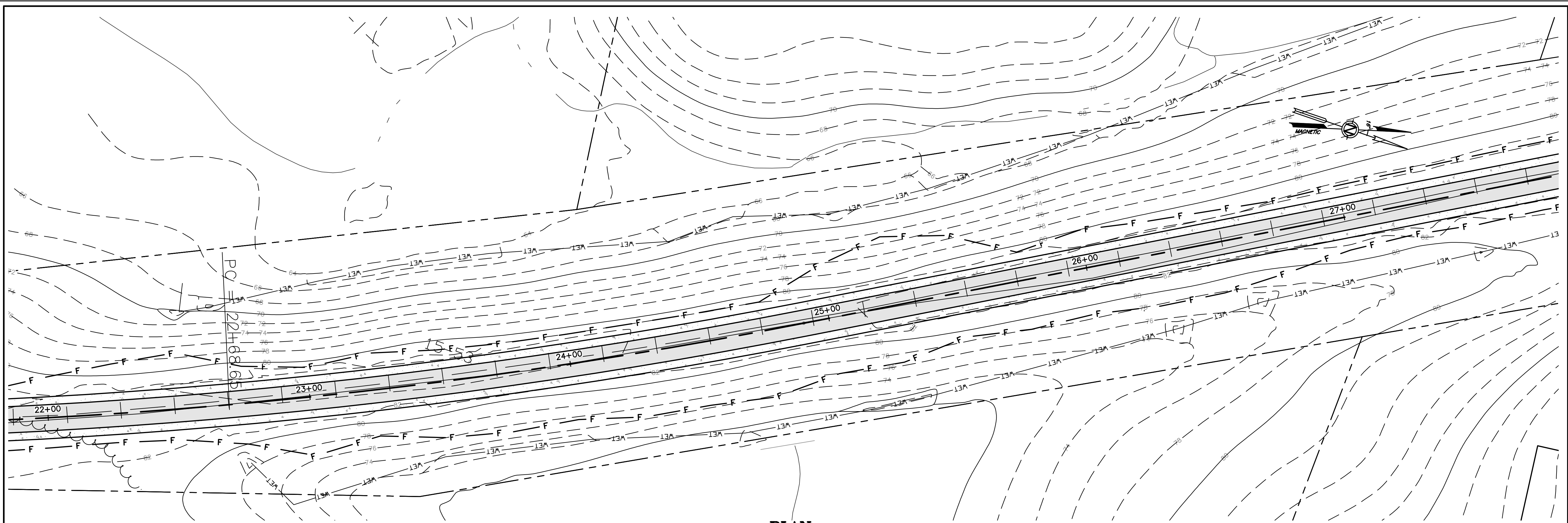
**CD CONSULTING ENGINEERS Inc.**  
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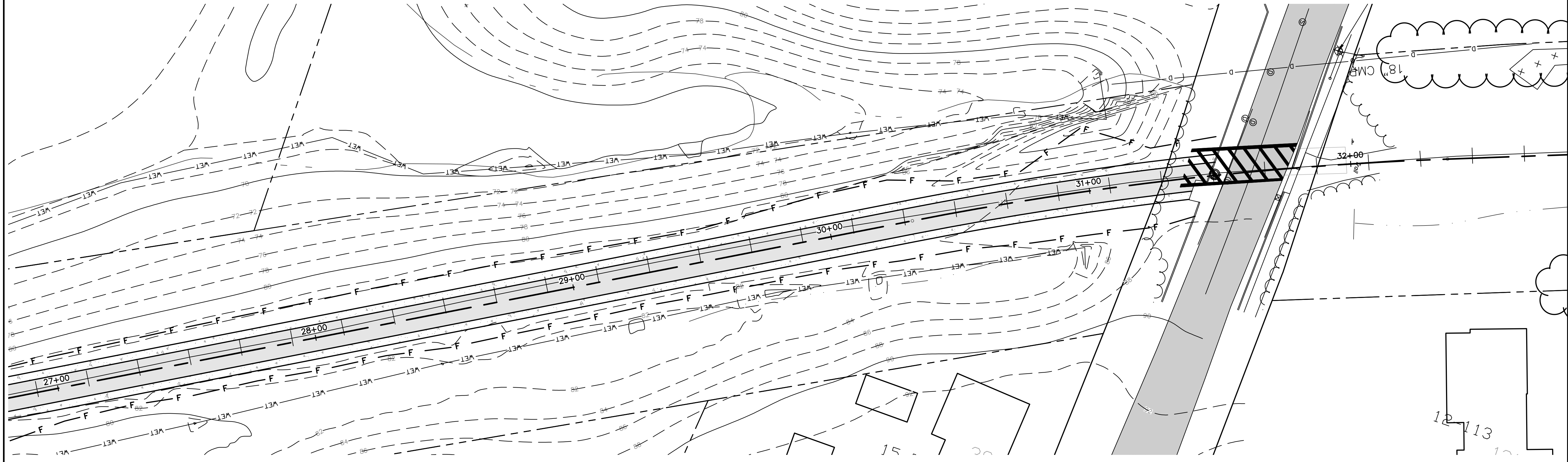
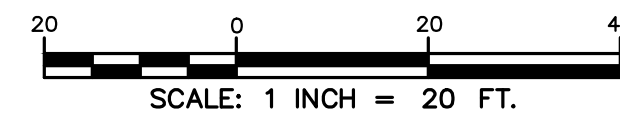
**NEWINGTON BRANCH**  
 BIKE/PEDESTRIAN PATH  
 FISHER-CENTRAL AVE PLAN  
 CITY OF DOVER  
 NEW HAMPSHIRE

SCALE: AS NOTED	JOB NO. 16-0109
DATE: NOV, 2016	DWG. <b>C2</b>





**PLAN**



**PLAN**



#	DATE	DESIGNED:	CHECKED:	APPROVED:

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**CITY OF DOVER**  
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**NEWINGTON BRANCH  
 BIKE/PEDESTRIAN PATH  
 FISHER-CENTRAL AVE PLAN**  
 CITY OF DOVER  
 NEW HAMPSHIRE

SCALE: AS NOTED	JOB NO. 16-0109
DATE: NOV, 2016	DWG. <b>03</b>

