

# LAKE AUBURN BIKE AND PEDESTRIAN MASTER PLAN

## SOUTHERN LINK



Prepared for:

**The Lake Auburn Watershed Protection Commission**

Prepared by:

**Sebago Technics**  
Engineering Expertise You Can Build On



September 2007

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## Lake Auburn Bike and Pedestrian Master Plan

### Southern Link

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## Acknowledgements

This document could not have been accomplished without the help and input of many people. That list includes:

### Lake Auburn Watershed Protection Committee:

Roger Bouvier, Chair  
Joseph Grube, Vice-Chair, Assessor, City of Lewiston  
Bruce Rioux, Representative of Auburn Water District  
Richard Thibodeau, Representative of the Town of Turner  
Bob Thompson, Executive Director Androscoggin Valley Council of Government  
Ronald Jean, City of Lewiston Councilor  
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### Land Owners/Committee:

George Schott  
Scott Knapp, President Central Maine Community College  
Mike Grimmer, Sisters of Charity Health Care  
Dan Fournier, St. Dominic's Regional High School  
Bob Belz, Public Works Director City of Auburn  
Calvin Hunter, Operator of the Berry Farm Gravel Pit

## Lake Auburn Watershed Protection Commission Bike and Pedestrian Master Plan Southern Link

### INTRODUCTION

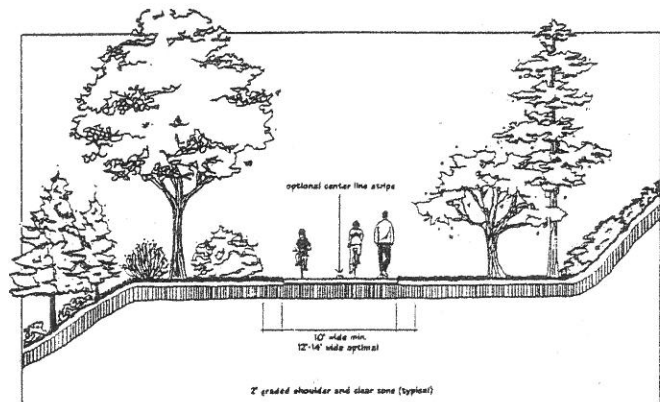
In the spring of 2007, the Lake Auburn Watershed Protection Commission (LAWPC) approached Sebago Technics, Inc. about working with a group of large landowners in the southern portion of the Lake Auburn Watershed in order to develop a joint Bike and Pedestrian Trail System on their properties to enhance the recreational opportunities along the lake, and provide access to the citizens of the area that they would not otherwise have. This plan is a vision that is shared by many people who want to make Lewiston/Auburn a better place to live by providing scenic recreation opportunities to the public. The following document provides the LAWPC with a guide to utilize in planning the actual development of a Bike and Pedestrian Trail System and includes options to consider such as, where to locate the actual trail as well as determining a funding source for this project to become reality. A great deal of thanks goes out to those landowners who believe that this project is vital to the region including the Berry family of the Berry Farm, K&K Construction, CLH Construction, St. Dominic's Regional High School, Sisters of Charity Health Care, Central Maine Community College (CMCC) and the LAWPC.

### STUDY AREA

The study area consists of the southern portion of the Lake Auburn Watershed beginning at the boat launch along Route 4 finding its way along outer Turner Street past the CMCC to Gracelawn Road, along Gracelawn Road past St. Dominic's Regional High School and the old City landfill to a point terminating at the Berry property directly across from Park Avenue. The attached Study Area Plan outlines the vicinity of land as described above.

### SHARED PATH USAGE

Off road shared paths, like the one that the Lake Auburn Watershed Protection Commission is seeking to develop, are usually completely separated from vehicle traffic and built along areas of independent easements for the sole purpose of developing a trail network. Trail systems that have been developed in this way include the Brunswick system along Route 1, the Eastern Promenade Trail in Portland, and the Eastern Trail System in southern Maine and throughout New England.



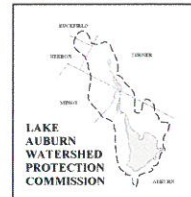
INSERT LAKE AUBURN WATERSHED



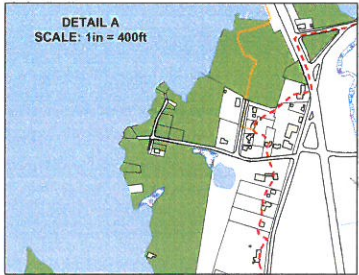
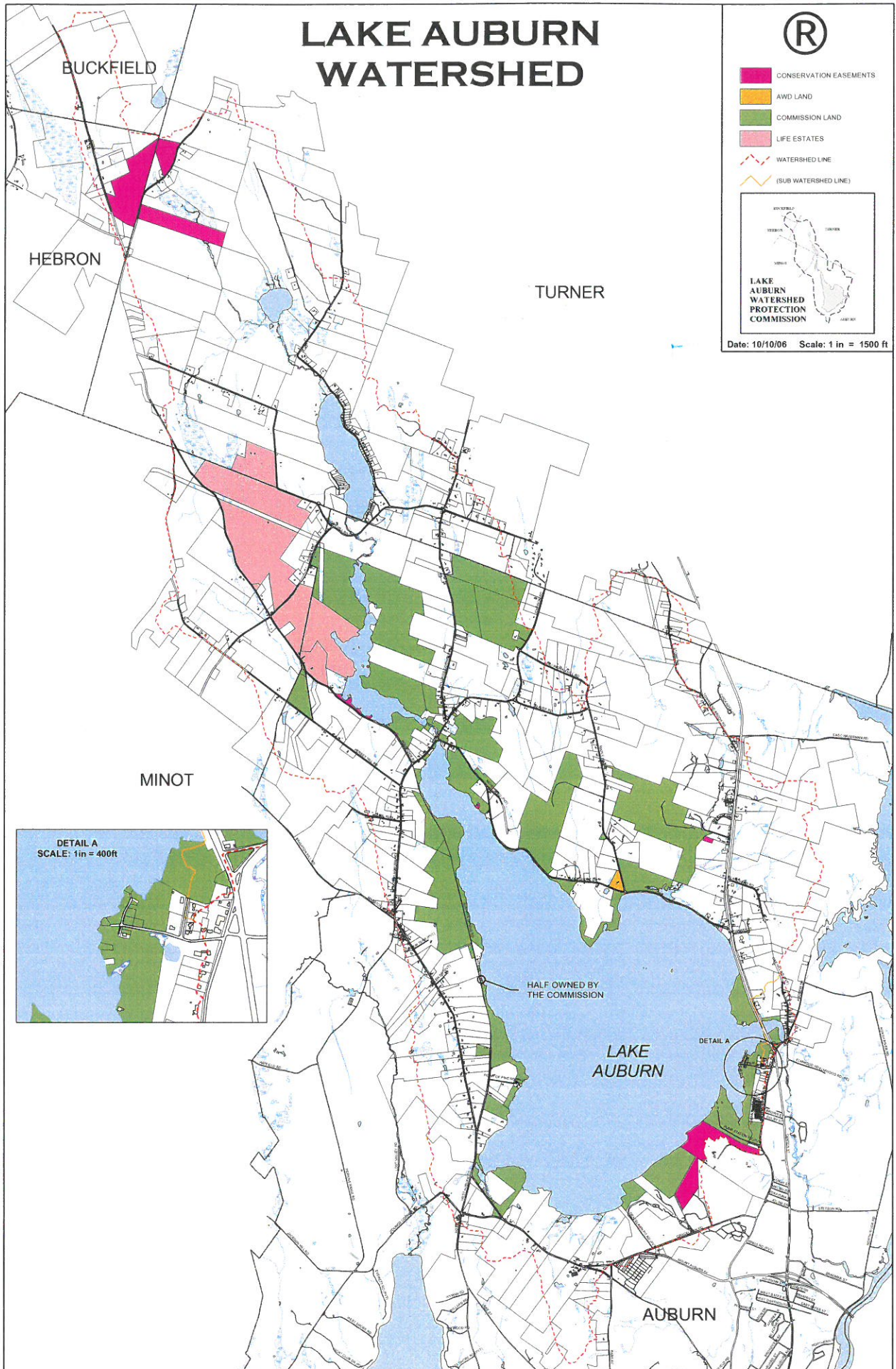
# LAKE AUBURN WATERSHED



- CONSERVATION EASEMENTS
- AWD LAND
- COMMISSION LAND
- LIFE ESTATES
- WATERSHED LINE
- (SUB WATERSHED LINE)



Date: 10/10/06 Scale: 1 in = 1500 ft



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# Exhibit 1



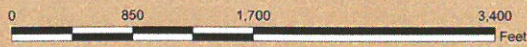


Lake Auburn

Lake Auburn Boat Launch

Study Area

Study Area

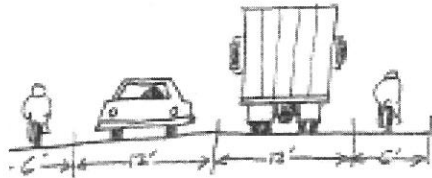


1 inch equals 400 feet





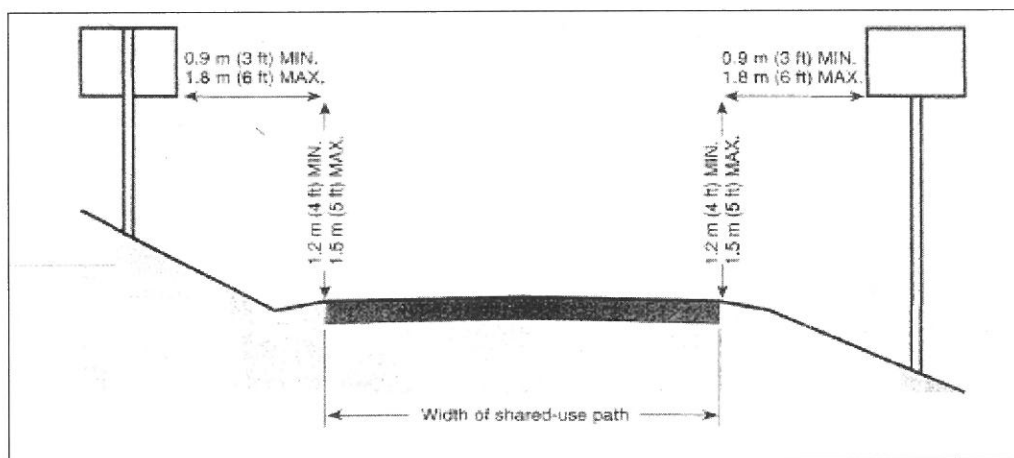
This system in the Lake Auburn Watershed will lend itself to many types of users including casual recreation, physical fitness and those wishing to utilize the system in conjunction with CMCC, St. Dominic Regional High School's athletic facilities, and a future health care facility that is proposing to be developed in the area.

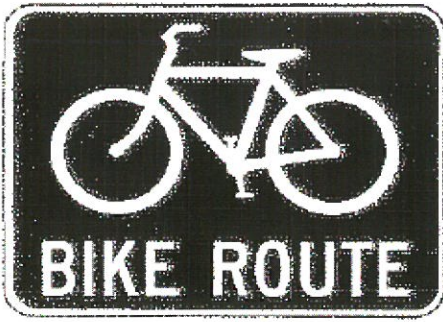


One option of alignment that is being considered with this project is utilizing a short portion of Turner Street from the access road of the water pump station, to the entrance of CMCC and a portion of the drive access associated with the college. In utilizing that alignment, it is important to remember from a safety consideration this area needs to be treated as a shared facility. A shared facility with Turner Street is possible in this area. Currently, Turner Street is approximately 22 feet in width with an additional 20 feet of right-of-way on the westerly side of the road, which would allow for an additional 6-foot lane width to accommodate the Bike and Pedestrian Trail System in this short stretch of roadway. The same design standard for one side of the drive would hold true for the access to the college such as the one shown above.

### TRAFFIC CONTROL FOR BICYCLE FACILITIES

Off road/shared bicycle and pedestrian facilities and shared roadway facilities have specific signage used in order to communicate with the users of all the facilities being utilized. The *Manual on Uniform Traffic Control Devices* Edition 2003 (MUTCD) has a full series of safety related signs dedicated to bicycle facilities and has been included in this document as Exhibit 1 for use by the Lewiston/Auburn Watershed Protection Commission in the development of the Bike and Pedestrian Trail System. A few of the common signs and striping that would be utilized with this system are shown below:





D11-1



W5-4a



W7-5



W8-1



W8-2



W8-10



W8-10p

### SITE AMENITIES

There are several locations along this trail network that can serve as rest areas and provide view corridors of Lake Auburn, which have not been seen by most people in the region unless they have accessed the area by boat.

The first area is approximately 800 feet south of Church Street on property owned by the LAWPC. Formerly, there was a house in this location and would now serve nicely as a picnic and rest area for those people parking at the boat launch facility and making their way into the site.



*Looking at the lake from the former camp location*

The second location is known as the Dr. True site. Dr. True owned a camp in this location during the 1800s. He is better known in the Auburn area for his elixirs that he developed during that same time period. This location is approximately half way between both trailheads on this segment of the trail network. This area lends itself as a focal point on the network because of its central location not only

along this trail but is a link area to other trails that can be formalized as monies become available to do so. This site may also be utilized as an educational tool for local history, as many people do not know the history behind Dr. True. Unfortunately, due to the topography, the bikeway itself cannot directly access this location, which in turn will lend itself to being a footpath just off the main trail.

These trails link to both the St. Dominic's Regional High School recreation facility as well as the future CMCC athletic fields.

The third outlook area is again property owned by the LAWPC and was previous a camp that has been demolished. The site is relatively flat and again may be used for rest areas and vistas to the lake that have never been available to the public. This area is approximately 2,000 feet off the Gracelawn Road trailhead location, which fronts on the Berry Farm property. The topography to this location will also lend itself to being a footpath rather than a direct bike route.



*Looking down the trail from St. Dom's toward the athletic fields*

## **ALTERNATIVE ROUTE ALIGNMENTS**

With the certainty of several outlooks and stops along the overall concept of the route, there are alternative routes to consider as this project moves from concept to reality. The accompanying map lays out those alternative routes. The need to obtain a 20-foot wide access easement across the Turner property which fronts on Turner Street and abuts the Water Pump Station Road will be important unless the ultimate alignment takes the user on to Turner Street for approximately 200 feet between the Pump Station Road and the CMCC entrance.

### **Option 1**

Will take the user down the CMCC access drive to the maintenance building area and bring you to an existing opened right-of-way for a Central Maine Power (CMP) line which is an easement area only and not owned by CMP. This line takes the user directly behind the St. Dom's athletic fields and ties into the area the CMCC is proposing to utilize in the future for athletic fields as the campus grows.

**Advantages:** Close to the health care project location for access to the trail system and access to the CMP right-of-way making construction of the trail easier.

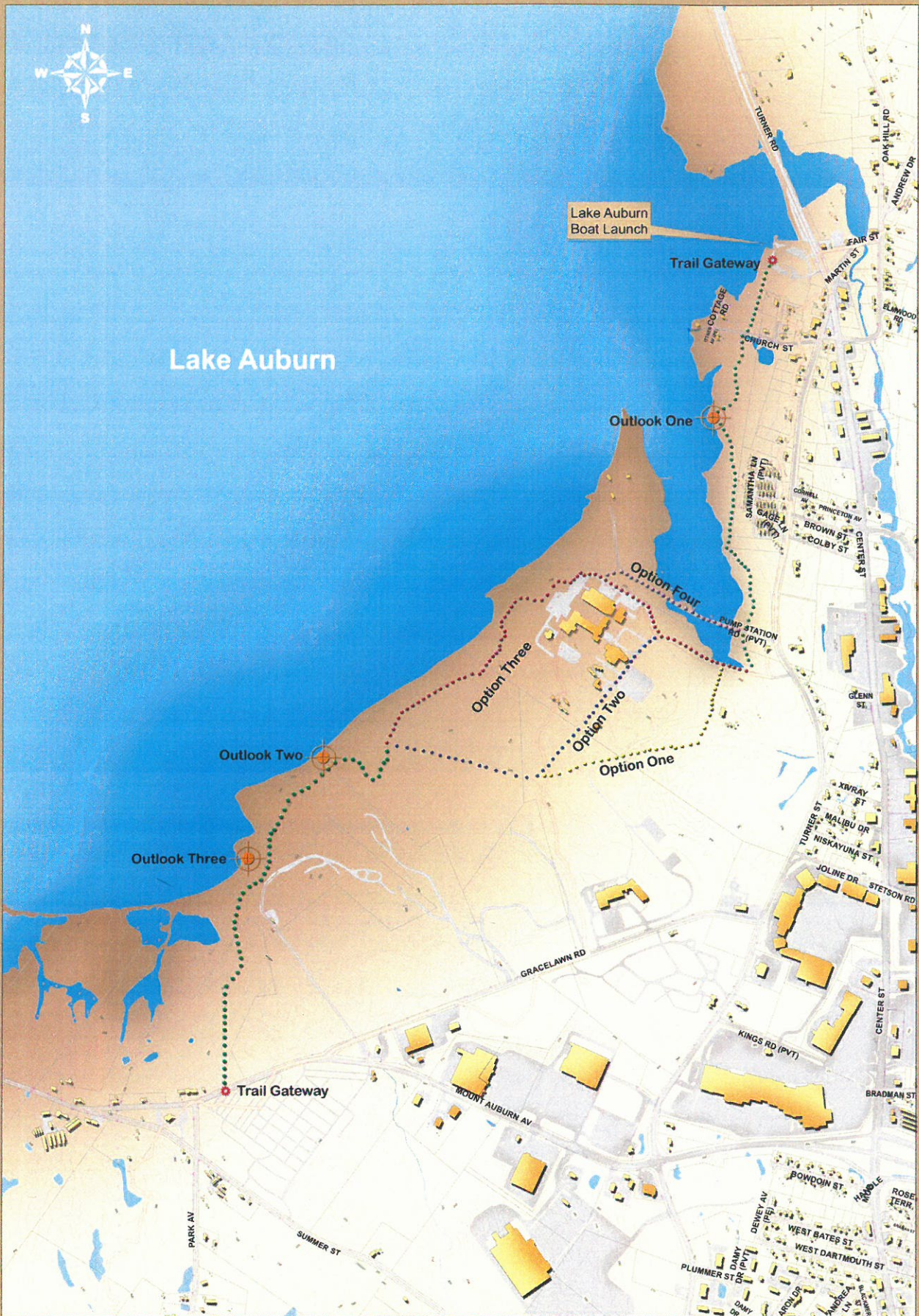
**Disadvantages:** Access location to the CMP power line has very rugged terrain making the slope of the trail system to steep or convenient for the recreational user.



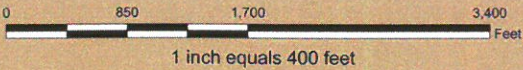
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## **Exhibit 2**





Alternative Route Alignments





## Option 2

Takes the user down the CMCC access drive, thru the parking lot to a point that terminates with a home located on the campus, which is owned by the school. From this point, a short connector thru a beautiful stand of pines will again take the user to a point which ties nicely into the St. Dom's athletic fields and to the area that CMCC is proposing to utilize in the future for athletic fields.

**Advantages:** Cost savings may be seen by utilizing the access drive of the campus for a long stretch of the system, although additional lane width will be required in order to accommodate the multi use system. Taking the rider thru the nice pine setting is enjoyable. The terrain is user friendly and this alignment works well with both sets of athletic fields.

**Disadvantages:** Conflict for users and vehicles going through the parking lot of the college campus. Alignment will require the construction of a new 6-foot lane and the replacement of street lighting infrastructure along the CMCC access drive will be required.

## Option 3

This alignment will take the user down the CMCC access road to a point that will tie the user into the parking lot on the lake side of the CMCC property and take them through the parking lot or through the grass area of the parcel with a new 12-foot wide paved multi use trail.

**Advantages:** Views of Lake Auburn are very attractive and allow the user to take advantage of this area. The large open area on the campus lends itself to a host of activities that can be anchored by the trail system. Access for the health care facility is relatively easy with access through the CMCC maintenance drive.

**Disadvantages:** Alignment will require the construction of a new 6-foot lane along the CMCC access drive. Conflicts for users and vehicles going through the parking lot of the college campus.

## Option 4

This alignment utilizes the Pump Station Drive owned by the Auburn Water District for access to the pump house water distribution facility. The network would than head southwest to the CMCC property at an area where the access drive turns to the north taking the user through a beautiful set of pines and opening up to the open field on the lake side of the campus.

**Advantages:** The Pump Station Drive is very well established so no infrastructure cost (other than signage and a gate on the road) will be required. No need for the purchase of easement rights across private property and is very flat level area for the user. Educational opportunities exist for the Auburn and Lewiston water districts.

**Disadvantages:** Security to the pump station is a concern. The cost of an additional gate to keep the area secure, especially from vehicle traffic, will be required.



Currently, there is a master planning effort underway for gravel extraction operations, which abuts the proposed trail location. The remainder of the path alignment will be determined based on the final Master Plan(s) for the two gravel extraction operations owned by George Schott, Get Er Done, LLC, and the second pit operated by Calvin Hunter on the Berry land.

It has been determined that the alignment should be on the top of the final berm on the north and westerly sides of those pits. Establishing the alignment will require coordination with the Gravel Extraction Master Plan(s) as well as survey fieldwork when the construction is planned for the Bike and Pedestrian Trail System.

## **PATH MATERIALS**

There are several materials that will work for this Bike and Pedestrian Trail System as discussed below:

**Bituminous Pavement** - is by far the best product to use on a Bike and Pedestrian Trail System like the one that is proposed here. This product is also the most costly to utilize; however, the long-term wear and tear, as well as maintenance of this product, will allow the trail system to last a long time and will be very conducive to all types of use such as runners, walker, bikers and roller blades.

**Recycled or Reclaimed Asphalt** - Otherwise know as RAP is also a great material if it is in abundance from another job and is not being utilized on the project that the material is being utilized from. In order for this material to be utilized effectively, it must be mixed with new bituminous. If there is a cost savings from new bituminous, this would be an effective way to go; however; the cost savings will be minimal.

**Stone Dust** - If this material is compacted as it is put into place, it can be a very effective material as well; however, maintenance can be a long-term problem with spring runoff and heavy rains. Material will be required to be added seasonally in order to keep the trail system in good shape.

**Compacted Gravel** - This is by far the least costly material to use and there will not be any long-term maintenance for this type of system; however, it is very dirty and dusty during the dry summer months which would not conducive to family use since there can be stones mixed in which makes for unpleasant walking and bicycling for children. This material would be the least favorable for a trail system like the one that the LAWPC is seeking to develop.

## **UNIT COSTS**

The unit costs are listed below. It should be noted that these costs do not take into consideration construction, bridges, guardrails or any other special needs that may arise as part of the construction associated with this project.

### Unit Costs

Bituminous Pavement	\$10.22	Per LF
Recycled Asphalt	\$2.25	Per LF
Stone dust	\$21.00	Per LF
Compacted Gravel	\$11.25	Per LF

Source: Pike Industries and the Maine Department of Transportation

The figures above do not include sub base material but give you a strong indication of the cost for finished material. The sub base would be of equal value for each of these finished product materials.

### FUNDING SOURCES

#### ANDROSCOGGIN TRANSPORTATION RESOURCE CENTER (ATRC)

As members of the ANDROSCOGGIN TRANSPORTATION RESOURCE CENTER (ATRC) and being recognized as part of the Metropolitan Planning Organization (MPO), there are transportation funds set aside by the Maine Department of Transportation (MDOT) for the needs of communities like Lewiston and Auburn which have been established in a priority fashion by the communities and the MDOT. These funds are broken into Roads, Bridges, and Passenger Transportation, Safety and Bike and Pedestrian needs. The Bike and Pedestrian funds are provided on a statewide competitive base. It would be the responsibility of both communities to show the MDOT through the ATRC Annual Work Plan funding process the desire to construct such a facility and that this is a high priority program and that it deserves funding. The cities would be responsible for funding the 20% match through this process. In June 2002, **BRIDGING THE GAPS: A Long Range Facilities Plan for Bicycling and Walking in the Lewiston-Auburn Area** was developed by ATRC with a horizon date of 2025. This document is attached as Exhibit 2. It is clear throughout the document that this off road pathway and other on road improvements complementing this project are considered for future funding. Page 20 of the report lists the Lake Auburn Bike Routes as Priority #7 with a 2002 price tag of \$400,000 for the CMCC/St. Dom's 1.55-mile portion of the project. Page 22, a map from the report, shows this project as a priority project.

#### FEDERAL AND STATE FUNDING SOURCES

There are a number of federally funded programs through ATRC that can be utilized to pursue federal funds. A list of the funding mechanisms is included as Exhibit 3. The State of Maine also has several alternate funding sources available through grant programs. They include:

- Land for Maine's Future-State Planning Office
- Maine Outdoor Heritage Foundation-Inland Fisheries and Wildlife
- Land and Water Conservation Fund-Maine Bureau of Parks and Lands
- Maine Trails Funding- Maine Bureau of Parks and Lands

A list of these funding sources, as well as the grant programs and contact information, can be found in Exhibit 3.

### **FUTURE LINKS**

This plan will not terminate at the Summer Street Trail Gateway. The City of Auburn has recently completed a study of the Park Avenue corridor that includes the need for a bike lane which will link to the Court Street area of the community and is highly residential along this link providing bike riders and pedestrians a greater piece of infrastructure for use which is consistent with the **BRIDGING THE GAPS: A Long Range Facilities Plan for Bicycling and Walking in the Lewiston-Auburn Area** report noted earlier in this document. The City also has a long-range plan with the MDOT to reconstruct the Summer Street corridor from Park Avenue to Young's Corner Road due to safety issues. In reconstructing this area, it would be highly desirable to add a bike lane on this link, discontinue and vacate the Summer Street extension from Summer Street to North Auburn Road so that it may be turned into a bike and pedestrian facility which will help link the Southern Link Project to the already heavily used Whitman Spring Road owned by the LAWPC. These links altogether would provide a little over 8 miles of a continuous, official bike and pedestrian facility.

### **RECOMMENDATION**

It is the recommendation of this report that the project move to the next step of the process by presenting the information to the public, securing funding for the construction of the Southern Link Project and developing full engineering plans for the construction of the bike and pedestrian facility. In doing so, the project design should move from concept to construction by utilizing the Option Four alignment through Pump Station Drive to the CMCC campus as shown on the accompanying map. Based on the cost of materials to construct the facility, it is the recommendation of this report to utilize bituminous paving for the construction of the facility due to the long-term maintenance and usability of the network for all of the end users.

### **REFERENCES**

- Manual on Uniform Traffic Control Devices for Streets and Highways, 2003 Edition.
- BRIDGING THE GAPS: A Long Range Facilities Plan for Bicycling and Walking in the Lewiston-Auburn Area, Prepared by the Androscoggin Transportation Resource Center, June 2002.
- Web Based Information:  
[www.Transportation.morpc.org/documents/Federal/FundingPrograms.pdf](http://www.Transportation.morpc.org/documents/Federal/FundingPrograms.pdf)  
[www.enhancements.org/rtefunding.asp](http://www.enhancements.org/rtefunding.asp)



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## **Exhibit 3**





# Future Links





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## **Exhibit 4**





Lake Auburn

Lake Auburn Boat Launch

Trail Gateway

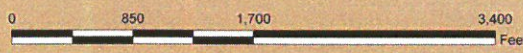
Outlook One

Outlook Two

Outlook Three

Trail Gateway

Recommended Route Alignments



1 inch equals 400 feet

Sebago Technics  
Engineering Expertise You Can Build On

