

Gull Crest Trails Master Plan

*Gull Crest Development
Spurwink Avenue
Cape Elizabeth, Maine*

Prepared for

The Town of Cape Elizabeth

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Executive Summary

The Cape Elizabeth 2001 Greenbelt Plan envisions a Town-wide network of greenbelt trails connecting the Town Center to open spaces and neighborhoods through a hub-and-spoke system. The hub in this system is the Town owned Gull Crest property. Situated adjacent to the Town Center, the Gull Crest property contains approximately 150 acres of meadows, woods, wetlands, streams, and occasional trails. The Greenbelt Plan calls for developing a coordinated, recreational trail network in the Gull Crest property as the Plan's top priority. The enclosed Gull Crest Trails Master Plan is intended to serve as the basis for implementing the Greenbelt Plan's vision for the Gull Crest property.

The Master Plan creates a coordinated, recreational trail network that will accommodate multiple uses. The trail network is best depicted in Exhibit 4 in the Appendix Section of this report. The trail network will be connected to the Town Center by a trail and footbridge crossing the Spurwink River tributary, and connecting to the existing trail over the Town's sewer easement in the vicinity of Chancellor Gardens. The trail network will consist of a series of interconnecting loops that will allow for short walks, a hike of nearly four miles, and nearly any distance in between. Users of the trail network will be presented with permanent trail maps, mounted on kiosk-like structures located at the three main entry points to the trail network. Permanent trail map locations are shown in Exhibit 5. All trails will be well signed, with particular emphasis on identifying trail names, distances, and intersections. Boardwalks will be constructed at specified locations, to facilitate both crossing and preserving wetlands. Once the Master Plan is adopted, the Plan will be submitted to the appropriate regulatory agencies (i.e., Maine DEP, U.S. Army Corps of Engineers and the Cape Elizabeth Planning Board) to obtain all permits required in one cumulative endeavor.

Adoption of the Gull Crest Trails Master Plan does not require the Town Council to allocate or commit any new funding. The Master Plan contemplates that much of the trail work will be accomplished through donated efforts. To the extent Town funding is necessary, the Conservation Commission will approach the Town Council for approval of specific budget items.

1.0 Introduction

The Town of Cape Elizabeth purchased the 113± acre Gull Crest parcel in 1998. A Location Map depicting the Gull Crest parcel is included in the Appendix of this report as Exhibit 1. This parcel combined with the previously owned 64-acre parcel, which included the Transfer Station, sewer treatment plant, and casual trails. The total combined acreage of the Town's land is now 177 acres. The Gull Crest parcel, which is also known locally as the former Dyer and Cooper farmland, was then developed for three distinct and much needed uses for the Town and its citizens. A new Public Works Department facility was constructed to combine with the adjoining Transfer Station. Two multi-purpose, recreational fields with supporting parking facilities were also developed to provide organized play areas for the youth of Cape Elizabeth. These construction activities utilized approximately 15 acres of the overall parcel.

The remaining land areas, consisting of a variety of physical features, are located on varying terrain. Large expanses of grassy meadows, forests, and open wetlands cover the property (See Exhibit 2). This land is to remain essentially as it exists for the enjoyment of all. It was envisioned that the existing trail system, which traverses throughout the site, could be improved upon within the parcel and expanded upon to connect to other Town-owned properties and local features. The unique location of this parcel in a centralized area within Cape Elizabeth makes it ideal to connect to the Town Farm, the Great Pond area, and the linking trail opportunities that the Town-wide Greenbelt Trail network offers.

The Town has developed this Gull Crest Trail Master Plan to better provide a comprehensive trail layout scheme that will provide public access to areas within the parcel as well as interconnect to links of the Greenbelt system. It is envisioned that this Master Plan will also provide priorities within the trail options so that the Town can systematically improve on its access to the vast resources both specifically within the confines of the Gull Crest parcel and its connections to adjoining land uses.

2.0 Objectives

Trail improvements within the property have historically proceeded on a trail by trail basis driven by spontaneity. The Town's efforts since purchasing the property have been to interconnect existing trail systems and to construct raised boardwalks over short expanses of streams and wetlands to facilitate the crossing of these wet areas. These crossings have been undertaken in areas actively used by people at Gull Crest. While these past efforts will not be wasted in the further development of the Gull Crest trail network plan, they have undertaken an unsystematic approach which is time consuming and costly from a permitting standpoint.

The main objectives of this Master Plan are to develop a comprehensive plan with defined priorities established for the strategic construction of the components of the plan, as stated below:

1. Identify the existing trail network within the confines of the property.
2. Provide a trail connection to the Town Center.
3. Provide looped trail connection of varying lengths and degree of difficulty within the Gull Crest property.
4. Identify any private easements, which would need to be obtained to meet the overall trail network goals.
5. Review regulatory jurisdiction and permitting requirements to satisfy the comprehensive trail plan.
6. Review trail, boardwalk, and bridge construction issues and establish a strategy of implementation of these items.

As part of this process, key elements of the Gull Crest parcel will be identified by physical characteristics and destination viability as well as the importance of connection links to adjacent areas. Maintenance criteria and responsibilities for both the existing and future trails will also be determined as part of this effort. Within the parcel itself, interlooping trail segments of varying lengths, terrain, and difficulty will be established (See Exhibit 3). These trails will be multipurpose trails for multipurpose uses. Connections to key locations of the surrounding areas will also be developed. All of these trails will be developed in keeping with the vision of the Cape Elizabeth Greenbelt Plan to provide public access while minimizing environmental impacts and preserving wildlife habitat.

3.0 Methodology

This Master Plan has been developed using a variety of steps. Aerial photography has been used to provide insight on the Gull Crest parcel and adjacent areas' features, orientation, and land cover. Field reconnaissance and additional survey has been conducted throughout the plan's development to better review the site characteristics under changing seasonal conditions. Past wetland mapping review and limited survey investigation to confirm boundary information has also been conducted to further identify constraints on trail development. Familiarity with the site and its special features has provided valuable insight into the potential trail layout options.

The Gull Crest site was then grouped into specific areas. The Transfer Station and the Wastewater Treatment Plant are located in the westerly portion of the Master Plan area and provide connections to the Town Farm parcel on the west side of Spurwink Avenue. The athletic fields and the Public Works facility are located in the southerly core of the Gull Crest site along with a network of existing trails. The Great Pond is located further to the south of the Gull Crest parcel. A Promontory Point is located nearby the Public Works facility in the very center of the Gull Crest parcel. To the east, a vast open wetland area covers a large expanse and is connected to an area referred to as "The Peninsula". A hilly knoll area is located northeasterly of the Transfer Station and transitions northerly to the open marshland of the Spurwink River. The Town Center is located to the northeast beyond the Spurwink River related wetlands (See Exhibit 2).

These areas were then evaluated for trail access and interconnections. Existing trails were also evaluated for their functionality. Redundant trail segments and trails that were undesirable were then designated for abandonment. New trail connections and options to link the Gull Crest with outlying areas were explored. A Trail Map is included herewith as Exhibit 4.

The trail map information was added to a draft plan of the site for review and comment by the Conservation Commission during meetings with the Commission. Members of the public who are familiar with the site and its characteristics have also participated at these meetings and provided valuable input into the Master Plan trail layout process.

4.0 Regulatory Requirements

The regulatory agencies of the Maine Department of Environmental Protection (DEP), the U.S. Army Corps of Engineers (ACOE), and Maine Inland Fisheries and Wildlife (IF&W) were consulted for their concerns and comments regarding the design of trails and boardwalks in environmentally sensitive areas. The Cape Elizabeth Town Planner has also been consulted as to the local permitting requirements for the improvements envisioned within this Master Plan effort. Meeting notes and letters associated with the regulatory process have been included as Exhibit 5 of this report.

Any trail which would be constructed within the limits of a wetland or cross a natural resource such as a stream would require a permit from the Maine DEP through the Natural Resources Protection Act (NRPA) and a local Resource Protection permit approval from the Cape Elizabeth Planning Board.

Minor impacts may be able to be permitted through the abbreviated Maine DEP "Permit-by-Rule" program. Any impact to the Gull Crest Parcel would also require a modification of the DEP Site Location of Development Permit. Depending on the type of construction, a permit review from the ACOE may be required. Permitting of a raised boardwalk would not require ACOE review. The placement of any type of fill, including bark mulch, or a constructed walkway directly on the ground surface of a wetland, however, would trigger the need for an ACOE review.

It is anticipated that the Town would attempt to permit the new trails outlined in this Master Plan effort as one cumulative permitting endeavor and not piecemeal the permit process for each trail segment as has been inefficiently done in the past. Past wetland impacts associated with prior on-site boardwalk improvements would also need to be included in the overall cumulative impact to the site. Depending on the manner in which the impact is evaluated, it appears that the cumulative wetland impact will range between 3,000 to 5,000 square feet.

The comprehensive trail plan would need to receive an Amended Site Plan approval for Gull Crest and Transfer Station parcels from the Cape Elizabeth Planning Board. The Planning Board would also concurrently grant Resource Protection permits to any improvement that would directly impact wetlands or be located within an RP-1 regulated buffer area.

5.0 Recommended Trail Improvements and New Trails

Consultations with the Conservation Commission have identified trail priorities and established goals to achieve as the Master Plan implementation is undertaken by the community. These goals focus on connecting the Gull Crest Facility to Town-wide trails and creating internal loop trails on the property (See Exhibit S). During this process, the Commission ranked its five top trail priorities. The following discussion is a description of the recommended improvements in order of priority.

5.1 The Spurwink River Crossing

The **highest priority trail** is the trail connection crossing the Spurwink River tributary and associated marshland that would link the Town Center via an existing trail running along the north side of the Spurwink marsh to the Transfer Station/Gull Crest parcel. This trail connection is referred to as "Possible Trail #12" in the recently completed 2001 Greenbelt Plan. This trail would require the construction of an eight-foot wide bridge crossing a sixteen-foot span of the Spurwink River tributary and may also require the construction of approximately 400 linear feet of boardwalk to provide a durable and stable surface over the marsh areas leading to the bridge. It is the commission's recommendation to construct the bridge as an initial step and to construct the boardwalk approaches only after need has been firmly demonstrated.

An easement may also need to be secured from the owners of the Chancellor Gardens facility for the area between the Spurwink River and the sewer easement located on the Chancellor Gardens property. This easement would be necessary should a portion of the new trail traverse the Chancellor Gardens' property and would allow for the use of a trail area to the south of the existing trail that follows the sewer easement to the Spurwink River tributary, which represents the southerly limit of their parcel.

The Spurwink River bridge could be constructed entirely of wood or be a composite of steel support members with wooden planking and railings. Since the proposed improvements are

located within a 100-year flood zone, the design would need to take into account provisions to ensure that the improvements would be able to withstand conditions during extreme rainstorm and runoff events. We believe that the envisioned 8-foot wide and 16-foot span scope of bridge construction would be economically competitive with either an entire wood structure or the composite steel and wood construction. Concrete piers would likely be necessary on both sides of the stream crossing to support the new bridge structure.

Boardwalks leading to the bridge can also be constructed in a variety of fashions. A two-foot wide wooden plank with raised sleepers represents one of the most economical boardwalk designs. This type of construction should be reserved for the more rustic and hardy settings within the Gull Crest trail area and is viewed as inappropriate for this area. We believe that a more expensive, but durable, four-foot wide wooden plank boardwalk with a raised wooden edge curb is more appropriate to traverse the marsh. Exhibit 6 of the Appendix to this report shows details of the described boardwalk sections.

5.2 Outer Loop Trail (Wooded Area)

The **second priority trail** system improvement would be the construction of a connecting outer loop trail to be built in the wooded area between the Transfer Station and Spurwink Avenue. This trail would connect the existing trails near the northerly end of the Transfer Station parcel to the southwesterly quadrant of the Gull Crest property where an existing parking lot has been constructed for users of the nearby Town Farm property. By constructing this trail, the connection with the Town Farm parcel can be made and readily accessed either remotely by driving to the Gull Crest parcel and parking or directly by walking from a variety of areas both on the Gull Crest parcel itself or surrounding areas in the Town. It should be noted that no wetland or environmentally sensitive areas have been identified in this area. Therefore, it is likely that this trail would be one that could be identified for volunteer group labor and its installation could be accomplished with minimal cost to the Town.

5.3 Outer Loop Trail (Wetland Area)

The **third priority trail** consists of the upgrading of a trail segment that loops around the easterly portion of the Gull Crest parcel. This trail travels through RP- 1 and RP-2 wetland areas and passes over drainage courses to connect the southerly side of the Gull Crest property to the Peninsula and Knoll areas. Currently, this trail is in very poor condition. Wooden pallets and makeshift boardwalks and bridge segments have been placed along the wetland portions of the trail route. The trail is primarily passable in the winter and colder months of the year when the ground conditions have frozen sufficiently to provide a stable walking base. During the remainder of the year, the trail is only accessible to the hearty user.

The trail does offer a variety of site characteristics and its upgrade is wholeheartedly supported by the Conservation Commission. Several sections of boardwalks and small bridges would be required. For the purposes of this discussion, we have assumed that the four-foot wide boardwalk design described in Section 5.1 of this report could be adjusted if necessary to act as small bridge crossings and that this type of boardwalk would be used as a robust treatment in the extremely wet conditions. The plank style boardwalk would be implemented in the spongy somewhat drier wetland areas as a rustic improvement. There appears to be some marginal sections of the existing trail which may warrant the rustic style boardwalk improvements in the future. We believe that this marginal area is relatively passable in its current condition and the rustic style boardwalk improvements should be isolated if used at all. Approximately 300 linear feet of four-foot wide robust boardwalk improvements would be required for this trail. In addition, there are three isolated bridge crossings of 10-, 20- and 30-foot lengths. We believe that the four-foot wide,

robust boardwalk design could be implemented in this area by using more substantial support measures. Therefore, a total robust boardwalk length of 360 feet is estimated to be needed on this trail.

5.4 Knoll Trail

The **fourth priority trail** system would be a new trail connecting the Transfer Station property Knoll area to the Promontory Point area to the east of the Public Works facility. The advantage of this trail is that it creates a medium length loop on the property with relatively little wetland disturbance. This trail connection would likely consist of a four-foot wide elevated boardwalk traversing through a cattail marsh with a two-foot wide plank and sleeper boardwalk extending on the southerly connection to the Promontory Point. It is estimated that 300 linear feet of four-foot wide boardwalk and 150 linear feet of two-foot wide boardwalk will be required to accomplish the trail connection.

5.5 Redundant or Ineffective Trail Discontinuance

The **fifth and final priority** Master Plan item as established by the Conservation Commission Plan would be to discontinue the use of several redundant trails and trails that lead to areas where the public should be discouraged from entering such as the area around the Public Works facility. The discontinued trails should be allowed to revert back to their natural state so that maintenance efforts and costs are directly utilized to maintain the functioning trail infrastructure program and not be expended on trails which do not serve the primary goals of the Master Plan. The discontinuance of trails is not anticipated to incur any financial cost to the Town.

6.0 Trail Construction and Maintenance Schedule

The existing trail surface treatment so far has consisted of the removal of vegetation in wooded areas and the mowing of existing grass growth in open areas. It is anticipated that this practice will continue wherever possible with the new trails to be created within this Master Plan scope. Existing and new trails should have a minimum vertical trail clearance to height of eight-feet and a width of four to six-feet. In areas where motorized maintenance equipment will be used on the trails, a minimum eight-foot width with additional space on turns should be provided.

Terrain character should be given consideration in trail design. Narrower trails should be considered in areas of steep slopes to avoid erosion and added costs for maintenance and construction. Wider trails are more appropriate on flatter slopes that can sustain more intensive use. Generally, trail grades of ten percent or less are more sustainable, but this criterion may be difficult to achieve in some isolated areas within the Gull Crest parcel. Trail sections with steep slopes should be minimized in length and only be utilized when no other practical alternatives are readily available. As discussed earlier within this report, trails crossing wetlands and streams should be done with boardwalks and bridges to minimize the potential for trail impacts to these environmentally sensitive areas. (See Exhibit 6.)

In open areas, smoothing the terrain periodically and mowing the grass-covered trails is sufficient until heavy use begins to wear the grass down without adequate time for rejuvenation. Once a trail has become significantly disturbed and cannot naturally revegetate, a more aggressive treatment will become necessary. On grass-covered trails with exposed soil areas, an attempt to either freshly loam and reseed the disturbed areas or plug the bare area with sod and loam to maintain the turf condition may be the best solution to attempt to stabilize the surface. These newly attended areas would need to be temporarily isolated from foot traffic to be given an opportunity to stabilize with grass growth.

Another economical approach has been the use of wood chips. The wood chips in combination with a geotextile mesh provides a stable and durable tread surface. Other fill materials such as stone dust and gravel can be used to fill in low areas and provide stability. These surface enhancement treatments should only be used on trails that are located in upland areas. In wet areas, boardwalks should be used to protect an area that has become eroded due to trail use.

In wooded areas where erosion or use has exposed roots and created a hazardous condition, these areas should either be covered with wood chips or boardwalk. Alternately, the trail should be relocated.

It is anticipated that once the trails are created with smooth surfaces, periodic mowing will suffice to maintain trails in open fields. Depending on the rate of grass growth, these mowing operations may need to be conducted several times over a growing season or perhaps once annually in shaded areas with slow grass growth.

Trails in wooded areas should be reviewed annually to remove downed branches, trees, other debris along the trail route. Problem areas should be identified and addressed through improvements to the trail surface. Drainage from adjacent areas should be encouraged to flow across trails in a controlled fashion so that erosion and other water-related damage do not occur to the trails. Water bars or shallow swales should be installed if necessary to prohibit runoff from flowing directly within a trail's path for sustained distances. This will divert runoff from the trail surfaces, discourage erosion, and allow the trail to more quickly recover after a rainstorm event.

Signs should be installed per the Town's Greenbelt sign policy with a large "G" symbol placed on 4-inch by 4-inch aluminum signs. Kiosks are proposed to be installed at the Gull Crest parking lot at the west entry to the Gull Crest, at the Gull Crest Recreational Fields parking lot, and at the intersection of the existing Town Center Trail and the proposed Spurwink River Crossing Trail. These kiosks should feature prominent signs with 3-foot by 4-foot maps depicting the trail network in a weather-proof enclosure. Refer to Exhibit 6 for the proposed kiosk locations.

7.0 Implementation and Funding

The intent of this Master Plan is to guide the development of Gull Crest as a recreational facility for the foreseeable future. Implementation will not be completed in the immediate future, but be accomplished incrementally as labor and funding is available. The Conservation Commission intends to take advantage of opportunities to implement the Master Plan as volunteer labor is offered. Recent experience with student volunteers and Boy Scouts, periodic maintenance performed by the Public Works Department, and the advent of Cape Trails Day this year, suggest that much of the trail installation work can be accomplished through volunteer efforts and continued support from the Public Works Department.

The Conservation Commission plans to supplement their annual funding by seeking monetary donations and receiving donated time, labor and appropriate grants to fund Master Plan Improvements. With the support of the Town Council to continue to fund Greenbelt trail work at current funding levels, the Gull Crest Trail Master Plan can be implemented in a fiscally restrained manner that enhances a centrally located recreational facility.

8.0 Conclusion

The Town of Cape Elizabeth has already taken the first steps in creating significant recreational opportunities at the Gull Crest parcel for its residents. By purchasing the property and establishing its trail development as a priority in the adopted 2001 Greenbelt Plan, the foundation has been set to enhance the opportunities present on the Gull Crest and its surrounding properties. This process has been furthered with the preparation of this Trail Master Plan report. This report stipulates the goals and

objectives of the trail network system on the property along with its adjacent connections to surrounding land areas. It identifies future trails to be created and develops a network of existing and future trails. The permitting, design, and construction of the new trail improvements can now proceed in an orderly and efficient manner. Once the trail system detailed in this Master Plan has been implemented, the character and terrain of this unique rural land setting and its surrounding areas will be able to be fully enjoyed by Cape Elizabeth residents for future generations.

