ELK RIVER ACCESS PROJECT

Recommendations

DOCKET
06-AFC-7
DATE 22 2002
RECD. FEB 0 8 2008

Prepared by
Natural Resources Services Division of RCAA
for
The City of Eureka

August 22, 2002

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ELK RIVER ACCESS PROJECT *Recommendations*

City of Eureka, California August 22, 2002

The following are recommendations made by the Natural Resources Services (NRS) Division of Redwood Community Action Agency to the City of Eureka regarding trail development in the Elk River Wildlife Area (ERWA) and adjacent City property north of the ERWA and south of Truesdale Street. The ERWA is managed by three agencies: the City of Eureka, the State Department of Fish & Game (DFG), and the Humboldt Bay Harbor, Recreation and Conservation District. The proposed project is in an area managed by the City and DFG, and the lead agency for the project is the City of Eureka.

SUMMARY OF THE RECOMMENDED PROJECT

Currently, the City has an offer of approximately $250,000 with which to construct a multiple-use trail on the Eureka waterfront from a local benefactor. This funding should be used to leverage other monies with which additional, more expansive public access facilities could be built. The proposed scope of the Elk River Access Project (project) includes a 'centerpiece' multi-use trail with additional day-use and trail support facilities that will collectively provide a coastal access 'gem' for the Eureka waterfront.

If the City wishes to utilize the available private funds while additional monies are being secured, the project could easily be phased after necessary permits are obtained. Construction of the entire project at once will not only improve implementation efficiency, however, but will also ensure that the project is manifest as a more striking 'whole' rather than less impressive 'pieces'.

The Elk River Access Project, as proposed and as illustrated in Figure 1, includes:

- Debris removal, fence removal/reconstruction, and site preparation;
- Construction of a new multiple-use trail between Hilfiker Lane and Truesdale Street, including two to three observation platforms;
- Surfacing improvement of existing public trail/maintenance road between Hilfiker Lane and Pound Road in the ERWA;
- New construction of trailhead and day-use facilities at the Truesdale Street 'Vista Point', including rehabilitation of existing rock slope protection at this site;
- Development of trailhead facilities at the existing public Hilfiker Lane parking area;
- Native habitat enhancement in locations between between Hilfiker Lane and Truesdale Street;
- Surfacing improvement of an existing riverside and fisherman's walking path in the ERWA;
- Site name and interpretive signing; and
- Landscaping and other appropriate aesthetic or artistic enhancements of the area or project elements.

It is recommended that, in the future and beyond the scope of this project, bicycle/pedestrian access, streetscape landscaping and/or other site improvements are made:

- Toward contiguous *multiple-use trail (or Class I path)* connections north and south of the project area as a part of the larger Eureka Waterfront Trail and California Coastal Trail systems;
- From Herrick Road and Pound Road to the ERWA;
- Between US 101 and the bay on both Hilfiker Lane and Truesdale Street; and
- On the former Crowley 'fuel tank' site east of Hilfiker Lane that are compatible with public access and open space values in the project area.

PROJECT OBJECTIVES

The following project objectives are presented for City input to ensure clarity during development of a project scope:

1) **Enhance public access to the Elk River Wildlife Area, Elk River estuary, and Humboldt Bay.**
   a) Provide recreational facilities that serve a wide variety of interests and needs into the future:
      i) Develop parking and day-use facilities at Truesdale Vista Point and the Hilfiker Lane ERWA trailhead.
      ii) Construct a multiple-use trail that meets ADA standards and serves a variety of recreational uses *(including equestrians? Need to determine this for trail specifications).*
      iii) Create a site for launching paddle boats with basic facilities for paddlers.
      iv) Consider future use levels commensurate with the type of facility proposed and potential regional trail connections when designing public facilities.
   b) Research future opportunities to provide a more enticing and visually obvious connection between US 101 and the Truesdale Vista Point and the ERWA.
2) **Foster appreciation of the environment and previous human activities.**
   a) Provide attractive, vandal-resistant signs that interpret natural and cultural history.
   b) Prioritize consistency with other interpretive signing around Humboldt Bay.
   c) Provide opportunities for the public to appreciate wildlife where impacts to that wildlife can be limited and carefully managed.
3) **Improve public health and safety in the ERWA.**
   a) Provide information on signs with area use guidelines, location and safety information.
   b) Design public facilities to be 'comfortable' to visitors and easily accessed by law enforcement and emergency services personnel.
   c) Increase public awareness of and access to the project area to reduce the prevalence of unwanted activities.
4) **Improve native habitat where possible.**
   a) Identify zones in project area where some level of landscape restoration is feasible.
   b) Identify invasive exotic plant species to be removed and replaced with native species.
   c) Remove invasive exotic plan species in conjunction with public access facility development.

CITY PLANNING FRAMEWORK

City plans for access improvements in the project area focus on the Truesdale Vista Point. The proposed project is consistent with the General Plan and Capital Improvement Program (CIP), and expands on the City's current Vista Point plans to connect public access facilities with the Elk River Wildlife Area, to the south. The City identified recreational improvements to this area as a priority in the 1999 General Plan:

> Policy 5.B.1: c. Establish scenic vista points at numerous locations along the waterfront, including construction of a public access vista point at the foot of Truesdale.
>
> Policy 5.B.7: The City shall establish a coordinated continuous public access system throughout its Coastal Zone, consisting of pedestrian walkways, nature walks, and bikeways with necessary support facilities, as described in Table 5-2.
>
> Excerpts from General Plan Table 5-2:
>
>> For the Elk River Wildlife Area: Public accessways shall be implemented by the City in consultation with the Department of Fish and Game...

Figure 1.

Elk River Access Project
Recommendations

Natural Resources Services, RCAA, August 2002 ¥ Photo date: March, 2000

Existing Conditions

- Public Multi-Use Trail
- Footpath
- Approximate Elk River Wildlife Area Boundary
- Approximate City Ownership
- Approximate Harbor District Ownership
- Approximate Private Ownership
- NWP Railroad
- Parking Area

Proposed Improvements

- Public Multiple-Use Trail (approximate location)
- Fencing/Access Control
- Parking Area
- Paddle Boat Access
- Day-Use Facilities
- Restroom
- Interpretive Sign and/or Wayside Exhibit
- Observation Platform (includes interpretive signing)
- Landscaping & Beach/Trail Access Control

Approximate Scale

0 — .25 MILES

Site Summaries
Approximate Areas

(1) **Truesdale Vista Point**
- ¥ Scenic visitor area with day use facilities
- ¥ Upgraded parking area to accommodate 23 vehicles
- ¥ Refer to Figure 3 for further detail

(2) **Truesdale Beach & Park**
- ¥ Former City storage yard
- ¥ Open space

(3) **'Crowley' Natural Area**
- ¥ Potential observation platform
- ¥ Interpretive signage

(4) **Elk River Paddling Access**
- ¥ Small parking area and simple accommodations for primitive beach launch site

(5) **Hilfiker Lane Trail Segment**
- ¥ Multi-use trail adjacent to Hilfiker Lane
- ¥ Aquisition of private parcel necessary
- ¥ Potential observation platform

(6) **Elk River Wildlife Area Trailhead**
- ¥ Existing parking for 21 vehicles
- ¥ Interpretive signage
- ¥ Day-use facilities and park/open space north of parking area

(7) **Existing Elk River Wildlife Area Trail**
- ¥ Re-surfacing of existing trail
- ¥ Potential interpretive signage

(8) **Riverside Footpath**
- ¥ Hardened surface to reduce habitat impacts
- ¥ Potential interpretive signage

(9) **Pound Road Access**
- ¥ Several options for public access improvements
- ¥ Interim ERWA trail 'loop' end until RR access approved
- ¥ See Figure 6 for more details

At the foot of Truesdale a scenic vista point shall be developed on the shoreline to complement the existing vertical access at the street end. Access support facilities shall include a small parking area, bicycle racks, and trash receptacles.

Along the waterfront between Truesdale and Hilfiker Lane, a continuous waterfront trail shall be dedicated and developed in conjunction with future development in order to connect the vertical accessways at the two street ends. The waterfront trail shall be fenced and/or landscaped to protect adjacent property.

The brief Truesdale Vista Point 2001-2006 CIP project description includes 25,000 ft^2 of parking, traffic barriers and picnic tables as a future priority. Project costs are estimated at a total of $250,000.

In 1998, the City commissioned a conceptual architectural plan and estimated costs (by Amphion Environmental, Inc., of Oakland) of a pedestrian walkway to the Elk River spit on the former fuel trestle and associated access amenities at the corner of Hilfiker Lane. Design and construction of the 'Rotary Tidelands Park' project is estimated to cost $1.33 million in the 2001-2006 CIP for "construction of a fisherman's park at the foot of Hilfiker Lane, including a parking area, picnic areas, lighting, trails, coastal plantings, group picnic shelter, a restroom, and rehab of the Elk River Spit Estuary boardwalk to Elk River Spit." It is not recommended that development of the pedestrian walkway be pursued at this time, based objections from partner agency DFG and other regulatory agencies regarding habitat issues, as referenced in the 2001 *Humboldt Bay Trails Feasibility Study*. The public access facilities associated with the walkway, however, are similar (though more extensive in scope) to what is proposed here as the Hilfiker Lane paddling access site.

The City is currently proposing extension of Waterfront Drive to Hilfiker Lane. This roadway would be located on the east side of the railroad corridor, and would not conflict with the proposed project. Between Del Norte Street and Truesdale Street, a Class I multi-use trail is planned to accompany the proposed roadway. This trail should connect to the trail recommended herein at the Truesdale Vista Point.

The *Opportunities and Constraints Analysis of the Crowley Marine Property* is a compilation of biological and historical resources information compiled in 1999 by SHN Consulting Engineers and Geologists for the City of Eureka, including a wetland delineation that encompasses a portion of the project area. This document will be a useful tool during the permitting phase of the proposed project. This document identified significant recreational use occurring on the Crowley property and opportunities for Coastal Trail connection with the Palco Marsh and development of interpretive facilities. An attached *Wildlife Assessment* by Mad River Biologists notes that the ERWA is "one of the best spots in Humboldt Bay for viewing shorebirds during low tide". Another attachment from the California Historical Resources Information System identifies the "high possibility" of Native American and a "moderate possibility" of historic cultural resources in the area.

The following tentative determinations were made by the City Manager and Director of Community Services to enable project planning to proceed:

- The former 'storage yard' adjacent to and south of the McCullens Avenue Pump Station can be cleared of debris and fencing and utilized for public access and open space values;
- The north portion of the former 'Crowley property', zoned Coastal Dependent Industrial, can be used for public access and possibly other open space values such as habitat improvement since it will not likely provide for coastal dependent industrial use; and
- The south portion of the former 'Crowley property', where fuel tanks were previously located and which is also zoned Coastal Dependent Industrial, should not be slated for any type of improvements that could prohibit future development at that location.

PROJECT DESCRIPTION

The following is a geographic description of proposed public access facility improvements. The sites below are named and numbered for planning purposes only, and correspond to numbers in Figure 1. More detail about the proposed facilities follow.

1. Truesdale Vista Point

Located between Truesdale Street and the City's McCullens Avenue Pump Station is an existing dirt lot with poor surface. Potential for high use levels, with close and visible proximity to the Bayshore Mall and US 101, and existing moderate use. Public access improvements here are a priority in the General Plan and Capital Improvement Program.

Parking	Proposed permeable surface of crusher fines (or permeable paving bricks), 14,400 square feet, with 23 spaces, three ADA-compliant.
Roadway	Upgrade of 600 square feet of Truesdale Street adjacent to Vista Point, including railroad crossing improvements. Shoreline armor replacement at foot of street.
Multi-Use Trail	Parallel to shoreline, (potentially paved) surface for high-level use and compatibility with segment west of pump station, approximately 380 linear feet. Standard 14' width, including 4' of hard/unpaved adjacent path. City-removable/collapsible access control structure (bollard/s) to prevent vehicular access.
Day-Use Area	Scenic trailhead and visitor area including: two to four picnic tables, benches, trash receptacle/dog cleanup station, appropriate (low focus) lighting. Three- or four-sided informational/interpretive kiosk. Underground utility lines: west of pump station and on northern side of Truesdale Street. Pump station fencing replacement. Pump station could be repainted.
Signage	Site name sign at entrance. Trailhead kiosk: three or four-sided structure, including site use guidelines, region/site map and natural/cultural history interpretive information.
Restroom	Plumbed restroom facility on northeast side of parking area.
Landscaping	Significant landscaping to add scenic element to site as viewed from US 101. Native plants recommended, few trees. Appropriate landscaping and 420 feet of upgraded fencing to screen pump station facility. Design will include vehicular access control to trail and beach. Potential element/s of public art or creative design.
Observation Platform	Raised (approximately 48") platform for bay/birdlife viewing at northwestern corner of Vista Point. Constructed on armored shoreline. Two (or three) rail-mounted interpretive signs.

2. Truesdale Park

The former City storage yard area south of the pump station – approximately 425 linear feet, including the open route between storage yard and Crowley site fences.

Multi-Use Trail	Start of unpaved Elk River trail, 14' area with 10' hardened (e.g. crushed shale) surfacing.
Landscaping	Cleanup of storage yard debris. Potential earthscaping/raised relief, groundcover, some shrubs and trees, all natives. Planting of shore pines in between decadent Monterey pines to sustain biological shoreline protection. Removal of invasive non-native species and existing fences. New fencing, approximately 4' tall, constructed at the railroad/city property line.

3. 'Crowley' Natural Area

The former Crowley property north of Hilfiker Lane – approximately 650 linear feet. This area has a great deal of native vegetation interspersed with numerous invasive exotic plants.

Multi-Use Trail	Continuation of unpaved Elk River trail, 14' area with 10' hardened surfacing.
Landscaping	Invasive exotic plant removal and native species plantings. Fencing, approximately 4' tall, constructed at the railroad/city property line.
Signage	One or two trailside interpretive signs.
Observation Platform	Potential: slightly raised earthen platform for bay/birdlife viewing at constructed on armored shoreline. Should have two (or three) rail-mount interpretive sign/s. Siting will depend on location of wastewater transmission line.

4. Elk River Paddling Access

Southwest end of the former Crowley property and corner of Hilfiker Lane. Site of roadway entrance to the ERWA.

Paddle Boat Access	'Primitive' beach launch with footpath from parking area.
Day-Use Area	Minimal paddling facilities: two picnic tables, trash receptacle/dog cleanup station, possibly single vault or portable restroom.
Parking	Permeable surface for eight vehicles, including one ADA-compliant space.
Signage	ERWA welcome sign at corner of Hilfiker Lane facing roadway – potentially could direct traffic to ERWA trailhead at end of Hilfiker and identify corner site for paddling access. Small paddling access kiosk with site use guidelines, 'water trail' map, and interpretive information.
Multi-Use Trail	Continuation of unpaved Elk River trail west of parking area, 14' area with 10' hardened surface.
Landscaping	Gateway landscaping and earthscaping at corner of Hilfiker Lane and around parking area with primarily native shrubs. Vehicular access control to beach and trail.

5. Hilfiker Lane Trail

From corner of Hilfiker Lane to ERWA trailhead – approximately 1500 linear feet. Assumption: AmidiPartnership property is donated to City and requires no toxic cleanup.

Multi-Use Trail	Continuation of unpaved Elk River trail as above. Outer edges of trail will be a minimum of approximately four feet from Hilfiker Lane and extreme high tide line. Trail will depart from shoreline just north of existing Pacific Bell property. Recommend undergrounding utility lines along Hilfiker Lane that would place constraints on trail construction.
Signage	Possibly one or two trailside interpretive signs at or near Pacific Bell site.
Landscaping	Earthscaping, native trees and shrubs. Structural control of vehicular access control to beach and trail between roadway and trail corridor. Invasive plant/fencing removal and cleanup on Amidi site. Potential element/s of public art.
Observation Platform	Potential: raised earthen berm for bay/birdlife viewing at point of armored shoreline. Should have two (or three) rail-mount interpretive sign/s.

6. ERWA Trailhead

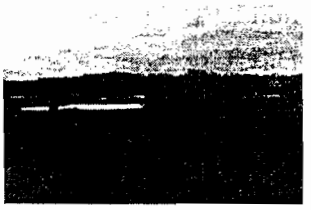
North of and surrounding existing ERWA parking lot. This area will be less developed than the more urban environment of the Truesdale Vista Point.

Parking	Existing asphalt parking for 21 vehicles. This lot should be adequate for proposed improvements in the area. Two parking sites should be designated for ADA access. There is no space for large recreational vehicle parking, however, and consideration should be given to directing these vehicles to Truesdale Vista Point.
Day-Use Area	Scenic trailhead and visitor area: picnic tables, benches, trash receptacle/dog cleanup station, appropriate (low focus) lighting. Existing cyclone fencing will be removed.
Restroom	A vault restroom facility south of parking area.

Multi-Use Trail	Continuation of unpaved Elk River trail west of parking area, as above, to connect with existing ERWA trail, described below.
Signage	Trailhead kiosk: three or four-sided structure, including site use guidelines, region/site map and natural/cultural history interpretive information. Possibly one or two trailside interpretive signs north and south of parking area.
Landscaping	Extensive landscaping, earthscaping and beach/trail access control around parking lot and along Hilfiker Lane with primarily native plants. The large fill area north of the parking lot could be maintained as a mowed open space for recreational activities, or it could be more heavily earthscaped with an artistic focus. Potential element/s of public art.

7. Existing ERWA Trail

Maintenance road/trail south of ERWA parking lot to railroad corridor at Pound Road – approximately 3240 linear feet if no access to Pound Road is developed; 3890' if access to Pound Road is developed.



Multi-Use Trail	Continuation of unpaved Elk River trail south of parking area. Surfacing improvements to existing maintenance road/trail will include: aerial and surface vegetation removal in 16' corridor, grading, and application of trail base and surfacing materials to width standards as above. Limited amount of additional vegetation clearing to improve visibility and safety. Where trail crosses railroad corridor near Elk River and Pound Road, an interim solution could be to develop a 'loop' footpath to lead trail users back north away from railroad corridor. Resurface small 270' 'loop' to ponds east of the main trail.
Signage	One or two trailside interpretive signs. Potentially a 'use guideline' sign to communicate status of railroad crossing access or a related safety warning.

8. ERWA Riverside Footpath

South of ERWA parking lot to railroad tracks at Pound Road – approximately 1090 linear feet. Existing unimproved 'volunteer trail' receives substantial use.

Footpath	Proposed surfacing improvement to 4' width of crushed shale or similar surface.
Signage	One or two trailside interpretive signs.

9. Pound Road Access

Current informal pedestrian access to ERWA from Herrick Road overpass and Pound Road over railroad corridor – approximately 405 linear feet from small parking area and gate to railroad corridor; approximately 1000 linear feet from small parking area to US 101 Park and Ride lot. Large park-and-ride lot adjacent to US 101 has ample parking space, but lacks safe pedestrian access to ERWA. Informal parking area currently accommodates three to five vehicles at end of Pound Road.

Parking	Grading and crusher fine surfacing of existing trailhead parking area to accommodate four vehicles, two ADA compliant. Grade approximately 1000' of Pound Road shoulder between Park and Ride lot and trailhead parking to provide space for pedestrians.
Multi-Use Trail	Development of multi-use trail between ERWA trail and Pound Road trailhead: railroad crossing retrofit for pedestrian access, 405' of trail, 10' crusher fine surface width and 4' shoulder.
Signage	Small informational kiosk west of trailhead parking area. Roadway ped/bike warning signs, directional signs to ERWA trail.

TRAIL ROUTE LAYOUT AND DESIGN

Based on site visits with City staff, previously stated objectives of the project, fifteen years of experience with multi-use trail design and construction, and standards from other agencies, the following recommendations are made to facilitate construction and upgrade of a multiple-use trail in and north of the ERWA.

For the proposed project, NRS recommends a 10' hard surface trail with 4' of adjacent soft path (4' on one side or 2' on each side). Around Truesdale Vista Point, where use will likely be relatively high, and a segment of the proposed trail is already paved in front of the City's McCullens Avenue pump station, this surface should be some type of pavement, with perhaps a hardened (e.g. crushed shale) adjacent shoulder/path. Elsewhere, however, it is recommended that the hard surface be such that it supports wheelchair users and bicyclists, but fits the natural landscape – crushed shale is the current recommendation. This surface can be paved in the future, if regional connection of the trail as a segment of the California Coastal Trail and as a transportation corridor or higher use levels deems it necessary. Sections of the McKinleyville Hammond Trail that are eight feet wide are the target of regular complaints regarding the inadequate width for a diversity of users.

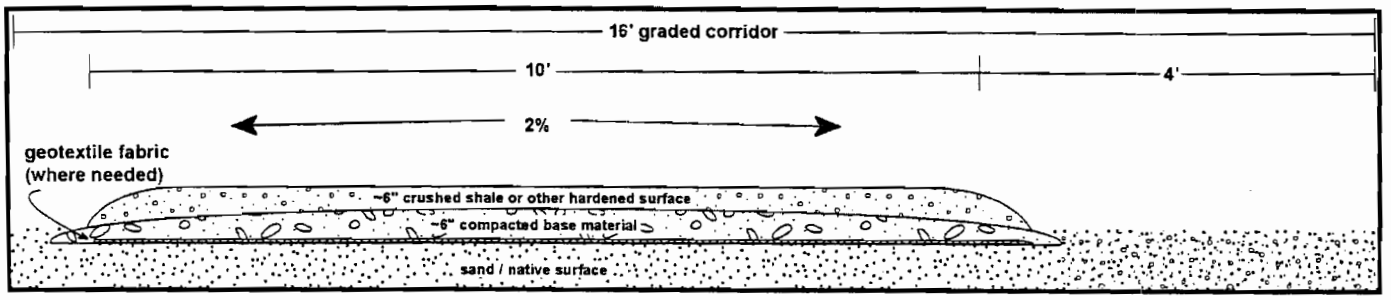


Figure 2. Proposed Typical Elk River Trail Cross-Section.

Multi-use trail standards often differ from agency to agency – partially due to different mandates and missions that range from providing a natural landscape experience to bicycle transportation. Referenced standards herein are balanced with site-specific characteristics, needs, and available construction materials to recommend the most appropriate trail design for this site. A number of sources serve as guidelines for designing attractive and low-maintenance multi-use trails that have a long functional and physical lifespan. Two such relevant sources include:

- The Rails-to-Trails Conservancy recently reprinted the popular ***Trails for the 21st Century: Planning, Design and Management Manual for Multi-Use Trails***. For 'suburban' trails that do not accommodate equestrians, this book recommends a tread width minimum of 10', with 2' minimum to 5' shoulders on both sides of the trail.
- The Open Space and Trails Program of Pitkin County, Colorado, ***Trails Design and Management Handbook***, is widely used by trail builders and managers across the country. This handbook recommends 10' hard surface trails with 4' to 6' soft adjacent trail for high use areas.

Also, Pacific Watershed Associates' *Handbook for Forest and Ranch Roads: A Guide For Planning, Designing, Construction, Reconstructing, Maintaining And Closing Wildland Roads* (June, 1994), includes information on rural road layout considerations, drainage, and surfacing. It is a useful resource for drainage and other long-term maintenance issues in multi-use trail planning.

For the purpose of clarity, a distinction is made here between construction of the proposed new segment of trail (between Truesdale Street and Hilfiker Lane) and the resurfacing of existing trail (within the Elk River Wildlife Area). The construction of new trail will require detailed planning and significant construction effort. Resurfacing of the existing trail will require less planning and construction effort.

Trail Name

After consultation with the Wiyot Tribe, it is recommended that the proposed trail, and in fact the entirety of multiple-use trail in the Elk River Wildlife Area, be named the **'Iksori Trail'**, to honor the area's original Wiyot name. The tribe is currently determining the correct spelling and pronunciation of Iksori, – since much of their language was nearly lost and is currently being reconstructed – and will let the project team know more in upcoming months.

This name is recommended in part because a popular public trail in the BLM Headwaters Reserve upstream is already commonly referred to as the 'Elk River Trail'. Until the 'Iksori' name is approved, however, the multiple-use trail described in this document will be referred to as the Elk River Trail.

Recommended Trail Layout

The Elk River Trail is proposed as a major multiple-use trail similar to the scale and surface of new Hammond Coastal Trail segment in McKinleyville that travels north of Letz Avenue and through the Caltrans Vista Point above Clam Beach. As recommended in the *Humboldt Bay Trails Feasibility Study*, the proposed trail should become part of the California Coastal Trail, as the Hammond Trail is. On a more local scale, it will also serve as a segment of the Eureka Waterfront Trail and the Humboldt Bay Trail.

Layout for the new trail alignment is recommended to parallels the shoreline for a grand total of approximately 6180 feet. This trail corridor, which for planning purposes is slightly wider than the finished trail width, is identified to allow slight flexibility in placement of the final trail footprint on the ground. Appendix A, a draft site plan sketch on 1=100 scale blueprint aerial photos, identifies the recommended trail route through the project area.

Private Property Title or Easement Acquisition

Only one small part of the project area is not owned by the City of Eureka. Access through the parcel west of Hilfiker Lane owned by the Amidi Partnership, as shown in Figure 1, is an important component of the proposed project. This site is in need of cleanup (fence, exotic plant, abandoned outbuilding and debris removal) and will provide approximately 250 linear feet of trail and, as proposed, a site for a raised observation platform that will provide excellent views of estuarine wildlife. It is assumed that there is no need for cleanup of toxic materials on this site, however this would be confirmed in a 'Phase I Environmental Report' upon determination of purchase, as discussed below.

It is recommended that title of this parcel be acquired either by the City or the local Friends of the Dunes land trust. If seeking title by donation fails, then purchase of the property should be negotiated. If purchase fails, then an easement or license agreement for use of the entire property should be secured, so that not only the trail and observation platform can be constructed, but also so that the rest of the property can be maintained to the level that surrounding City property is maintained. This component of project planning is of utmost importance and should be treated as a top priority.

Trail Construction Specifications

What follows are initial trail construction specification recommendations, given the known information to date on trail location. More detailed specifications will follow based on acceptance and/or alteration of these preliminary recommendations by City staff.

Multi-use trail construction on the native sandy surface in the area will generally include: vegetation removal, grading, compaction, application of a geotextile cloth (to maintain material separation), application and compaction of base rock, and finally application and compaction of surface material.

Trail Corridor Preparation

Debris cleanup in the project area is a first and necessary step to prepare for construction of the trail and related or adjacent facilities. There are multiple areas within and adjacent to the trail corridor with a combination of debris, salvageable materials, and cyclone fencing in various states, most of which pose public safety issues and/or obstruct the trail corridor. The following is a brief analysis of these sites:

- **Shoreline Debris Cleanup**: There are several locations between Hilfiker Lane and Truesdale Vista Point where concrete or concrete/metal debris were filled upon or placed as shoreline protection. Some of this debris is spread west up to 50' into low tidal flats. Rebar, metal, and other materials are protruding from shoreline riprap and historic piles on the beach. The Pacific Bell site also has concrete shoreline protection. The metal debris should be removed, and some of the concrete debris will need to come out with it.
- **Storage Materials Removal and Cleanup**: A variety of long-unused material is distributed throughout the fenced storage facility just south of the City pump station. Among the contents are used tires, both ceramic, concrete, and steel pipe, manhole covers, and a metal container half-full with used motor oil. Approximately 1000 linear feet of both functional and degraded cyclone fence require deconstruction and removal.
- **Former Crowley Marine Property**: The northern Crowley site contains some metal debris and garbage. Miscellaneous pipe and/or concrete debris exist near the turn on Hilfiker Lane. Approximately 1450 feet of degraded fence requires deconstruction and removal.
- **Amidi Partnership Property Cleanup** (assuming no toxicity): This fenced property contains discarded asphalt, concrete foundations, a small metal structure, metal scraps, and miscellaneous debris and garbage. Dune-like mounds of material on the northwest corner of the property require investigation. Approximately 375 feet of both functional and degraded fence require deconstruction and removal.
- **Miscellaneous Debris Cleanup:** Excluding the above listed areas, small pockets of scattered debris (including creosote-treated wood, metal scraps, concrete, rock piles, and garbage) exist throughout the project area. At the corner of Hilfiker Lane, abandoned gas pipes remain underground, and are currently exposed west of the street. These pipes, or some length of them, may need to be removed.
- **Barrier Rock Removal**: Approximately fifty half- to 3-ton boulders placed by the City to serve as vehicle access barriers at Truesdale Vista Point and along Hilfiker Lane will be replaced with more appropriate access control structures and require either removal, relocation, or incorporation into overall project planning as a construction or landscaping material.

Vegetation Removal: To prepare the working area and create an organic-free trail sub-base for construction purposes, some shrubs and trees will need to be cleared back from the proposed trail corridor and the existing ERWA trail. Ground vegetation in the trail corridor will be removed by a grader as described above. Non-native vegetation outside the construction corridor may be addressed as part of any landscaping and restoration efforts in the project area (addressed under 'Restoration and Landscaping').

New Trail Specifications: Truesdale Vista Point to ERWA Trailhead

From Truesdale Street, the trail will parallel the shoreline to the south end of Hilfiker Lane.

- Trail length: approximately 2,940'
- Graded width: approximately 16'
- Graded depth: minimum 3" (enough to remove organics and expose compactable sub-base)
- Base rock width: approximately 11'
- Base rock depth: 6" average, site-dependent (site-specific locations up to 18")

- Finished tread width (crushed shale): 10'
- Finished tread depth (crushed shale): 6"
- Geotextile cloth application: 12' width in areas where separation of rock from sand is needed

Resurfaced Trail Specifications: Hilfiker Trailhead to Railroad Corridor

From the Hilfiker trailhead south, the trail will follow the current alignment to the junction with the railroad corridor near Pound Road. Two alternatives exist at this junction: 1) a loop footpath approximately 245' short of the railroad corridor northwest of Pound Road, where the short loop at the trail terminus will be similar in scale to the footpath (described below), or 2) a trail crossing over the rail corridor. Depending on the success of permitting a rail crossing (see Project Management, below) both alternatives might be employed as implementation phases. Also, two 'vegetation tunnel' areas along the trail corridor are recommended for limited brush and limb removal to provide better sight distance and 'openness' on the trail for safety reasons.

- Trail length: approximately 3,240' (short of the railroad corridor by 245' for time being – may extend beyond rail corridor to Pound Road, another 405')
- Graded width: approximately 16' (terrain is level and at least moderately-well groomed)
- Graded depth: 4" average
- Base rock depth: 3" to 6" (trail corridor has adequate base rock for 50% of it's surface area)
- Base rock width: approximately 11'
- Finished tread width (crushed shale): 10'
- Finished tread depth (crushed shale): 6"
- Geotextile cloth application: 12' width, variable length (dependent on post-grading conditions)

Riverside Footpath Specifications

Located west of the north end of the existing ERWA trail, the footpath loop will provide formal, managed access to the shoreline of the river estuary on an existing 'volunteer trail' alignment used heavily by fishermen and walkers. Recommended trail specifications are commensurate with the character and nature of the site and the projected level of usage. The path is intended for foot travel only.

- Trail length: approximately 1,090'
- Graded width: approximately 4' (by hand and/or Bobcat-type equipment)
- Graded depth: approximately 2-10", site dependent
- Base rock: none
- Finished tread width (crushed shale): approximately 4'
- Finished tread depth (crushed shale): 6" average
- Geotextile cloth application: 3' width, 1,090' length

ACCESS FACILITIES AND AMENITIES

To create a truly inviting, comfortable, and easily-managed public access facility adjacent to the Elk River estuary, it is important that trailhead and day-use facilities are given serious design consideration. Much of the project area is a combination of former industrial and wastewater facility sites, 'feels' like a former industrial area, and accordingly attracts some uses that are dependant on a perceived state of relative abandonment. As proposed, this access facility will be inviting not only to families and outdoor enthusiasts to come and to return, but with its proximity to US 101, this area has the potential to also attract a significant number of travelers.

It is proposed that three – potentially four – access points be developed: at Truesdale Vista Point, the corner of Hilfiker Lane, the end of Hilfiker Lane, and Pound Road. These sites would serve different

levels and types of use. What follows are recommendations for attractive and easily-maintained parking, signage, landscaping and open space, places to sit and to eat, trash receptacles, lighting, and restrooms. At this stage, all of these amenities are proposed to be of high quality, which will accordingly require more design and permitting effort than more simplistic facilities.

Day-Use Facilities

Many people who currently use the Truesdale Vista Point and Hilfiker/ERWA parking areas do so just to enjoy the scenery from their car as they eat or visit. These public spaces on the edge of the bay – that afford views of the Elk River spit, boats of all types, wildlife, waterfront industry in motion, and mud flats – could become much more comfortable and enticing locations for the public to spend minutes or half a day. And for those who come to use the proposed trail, these could become places where people feel safe leaving their car (or bicycle). With attractive and well-designed facilities, these public spaces will attract more visitors, and consequently become more comfortable places to visit. More simplistic day-use facilities are recommended at the Elk River paddling access site. Even if public access is developed at Pound Road, day-use facilities are not recommended (beyond signs) due to the proximity of Eureka Protein and 'unsavory' odors. The following are general recommendations for development of day-use areas – information about what facilities are proposed at each site are provided below in 'Site Specific Descriptions'.

Parking Areas

Since the proposed day-use sites will serve several purposes – trailhead, vista parking, and on-site day-use – recommended designs for parking areas reflect the different types of uses proposed at each site. These sites should also include bicycle-locking facilities. No parking facility modifications are proposed at the ERWA trailhead at the foot of Hilfiker Lane, except to more clearly mark two parking spaces for ADA compliance.

Parking for approximately 24 vehicles is proposed at Truesdale Vista Point (Figure 3). Several of these sites should be ADA compliant, and one space (or two spaces combined) should potentially accommodate. Approximately four sites should be used as 'half hour' parking near the waterfront. The surfacing could be asphalt, or it could be a more permeable material. One permeable paving website is www.pavingexpert.com/permabl1.html, and this type of surface *may* make coastal development permitting easier. Drawings of the conceptual site plan and landscaping plan are included in Appendix B.

Space for approximately eight vehicles is proposed at the Elk River paddling access site on the corner of Hilfiker Lane. This parking area is proposed to be compacted shale or gravel, or other permeable surface. A general design for this site is illustrated in Appendix A.

Restrooms

Public restrooms on the Eureka waterfront, downtown Arcata, and at other coastal County public access locations have been beleaguered by abuse. Restroom designs will have to incorporate durability and management parameters.

Truesdale Vista Point and Hilfiker/ERWA trailhead parking are proposed to have public restroom facilities. A one- or two-room flushing toilet facility is recommended at the Truesdale Vista Point. Wastewater from this facility would be tied into the Truesdale Street neighborhood gravity line. A vault toilet was considered for this site, however for long-term maintenance benefits, a plumbed facility is recommended.

The existing Hilfiker ERWA parking area is experiencing the beginnings of a human waste problem. A one-room vault toilet facility is proposed at this trailhead site. Pre-fabricated vault toilets are relatively affordable and simple to install (Appendix C). One design is viewable online at www.cxtinc.com/Products/Restrooms.html). For easier management in the long-term, but higher permitting and plumbing costs in the short term, restroom plumbing could also be tied into the nearby wastewater treatment facility. Another option is that restroom facilities could be located inside the wastewater treatment facility gate. Additionally, in the short-term, a sturdy portable restroom could be placed at this site, similar to the restroom that served the Hookton Slough access site in the Humboldt Bay National Wildlife Refuge for several years before a permanent restroom was built.

To provide optimally comfortable public facilities – restrooms at adequate intervals and at most public access sites along the waterfront – toilet facilities should also be provided at the Hilfiker Lane paddling access site, and potentially at Pound Road if access is developed there. For the time being, durable portable restrooms at these locations would serve public needs, particularly at the proposed paddling access site. Vault toilets at these locations could be 'phased' in later, when public use increases: if these facilities might be desired in the future, they should be included in project permitting.

City Public Works staff are concerned that restrooms in these areas will attract vandalism and demand high maintenance levels. The final designs for restrooms should be as structurally substantial as possible. Even then, restrooms will need to be open only during daylight hours. The CIP calls for restrooms at the Truesdale Vista Point and the formerly proposed Rotary Tidelands Park.

Furniture: Picnic Tables and Benches

Picnic tables and/or benches are recommended at each site where day-use facilities are proposed. Between two and four picnic tables are recommended for the Truesdale Vista Point. Two picnic tables are proposed for the paddling access site, and between two and four for the ERWA trailhead area. It is recommended that benches be provided west of the trail at regular intervals of approximately 500 feet. Several benches should also be provided at both the Truesdale Vista Point and the ERWA trailhead areas.

Picnic tables and benches should also be of very durable construction. Hilfiker Pipe Co. should be approached about potential donation or reduced cost of these items. Additionally, these project elements could incorporate creative designs to include aesthetics in the project. Local artists could be asked to design 'indestructible' but artistic furniture.

Trash and Dog Cleanup Stations

Day-use site development will require placement and maintenance of trash receptacles at the Vista Point, Hilfiker paddling access, and ERWA trailhead locations. These facilities could be related in design to picnic tables and benches, above. They could also either be the same or similar to facilities on the boardwalk.

Also recommended are dog cleanup stations at each of these sites and potentially at Pound Road. Trash receptacle design should be durable, as well as tamper- and wildlife-proof. These stations can be ordered ready to install.

Lighting

Day-use areas should be lit at night to the minimum extent necessary to ensure safety of visitors. Bright, tall lights are not recommended, due to the proximity of the bay and incompatibility with open space values and the ERWA.

The Public Works Department notes that lighting can also *promote* nighttime activities. This issue will need careful attention. Lighting is recommended primarily for safety reasons – to discourage illicit activity and make nighttime patrols easier. However, it may be that a lack of lighting will reduce overall

nighttime use. Consequently at this juncture, minimal, low-level lighting is recommended only for restrooms and site welcome signs. This type of lighting will serve several purposes: it will cast enough light in each trailhead area to reduce the screen of darkness under which vandalism is easier, a moderate amount of light will be provided for safety of those who return to their vehicle after dark, and coastal impacts will be kept to a minimum.

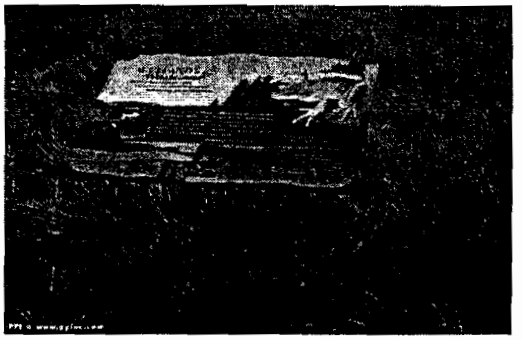
Public Art

Since Eureka has the statewide distinction of being the 'best little art town', it is recommended that public access projects include elements of public art in the 'fabric' of each project. Public art can be obvious or subtle, deliberately distinct from project elements or included in what would otherwise be 'standard fare'. Whatever artistic elements are included, they should be appropriate for the site. As this project becomes more defined, it is recommended that the following opportunities for creativity are included:

- Untraditional designs for standard public access facilities, such as benches and picnic tables, fencing and access control, sign mount structures, and/or even restrooms.
- Landscape art (such as work by the famed Andy Goldsworthy); and
- More classic public art structures whose theme/s match that of the area.

Signs

As recommended in the *Humboldt Bay Trails Feasibility Study*, design of site and interpretive signs for this project should be consistent with a bay-wide interpretive signing program. This program was recently funded by the State Coastal Conservancy, local agencies (including Eureka), and the Humboldt Area Foundation, and is to be developed by early 2003. Additional funds are being sought from the National Fish and Wildlife Foundation (NFWF) to involve one of the leading interpretive exhibit design firms in the country (photo at right). This program will provide base sign and mount design parameters for the region, and will also provide detailed designs and artwork for an Elk River Access Project kiosk, trailside interpretive sign, and water trail access sign. If the NFWF proposal is funded, more Elk River signs will be designed. It is intended that the Elk River signs actually be the first in the region, outside the new Humboldt Bay National Wildlife Refuge headquarters, to showcase such sign designs.



The costs of designing and fabricating 'Humboldt Bay' interpretive signs are being determined as a part of this current signing program effort. Based on rough estimates derived from HBNWR exhibit costs, signs of this quality and durability are expensive to design and fabricate, but by recommendation here, are worth the expense.

Using base sign and mount parameters from this program, additional interpretive and wayside exhibit signs, beyond those described above and proposed herein, will need to be designed with Elk River Access Project implementation funds. Wording, specific illustrations, and other elements particular to the area will need to be developed, however some of the most costly design elements will be completed during development of the signing program. Cost estimates for design and purchase of interpretive signs and trailhead kiosks will be developed as a part of the Conservancy sign project, planned to be complete in early fall.

It is also recommended that site welcome signs be designed with project implementation funds. These signs should be simple but attractive. Just west of the railroad tracks on Hilfiker Lane, and at the end of Pound Road, recommended signs would read something like: *'The City of Eureka Welcomes You to the* ELK

RIVER WILDLIFE AREA', and '*The City of Eureka Welcomes You to the* TRUESDALE VISTA POINT'. The design for these signs could and should be used at the Palco/Eureka Marsh and other coastal access sites in the City.

A large trailhead kiosk is proposed for each major access point: Truesdale Vista Point and the Hilfiker ERWA trailhead. A water trail access sign is proposed for the Hilfiker Lane paddling access site. A smaller informational sign/kiosk could be located at the Pound Road access site. Up to twelve trailside interpretive signs could be placed along the length of the trail corridor, including two at each proposed observation platform.

Initial concepts for titles of interpretive signs (or interpretive panels of wayside exhibits) along the proposed and existing trail include:

- The Secret Life of the Elk River Estuary
- The Elk River Spit... A Mile Long and Growing
- Iksori, Once A Wiyot Village
- Eureka's Wastewater Treatment System Demystified
- Eureka's Stormwater Runoff... Where Does It Go?
- The Falk Railroad (You're Standing On It) and Headwaters Forest
- Boats of Humboldt Bay
- Tides At Work
- Planet Mudflat

Access Control and Fencing

To reduce use of the trail and surrounding public land and beaches by motorized vehicles, a combination of structural access control features and fencing are proposed.

Controlling motorized access to trails is best achieved by collapsible or removable bollards placed at trail intersections with parking areas or streets (Figure 4). Recommended locations of bollards are illustrated in Appendix A.

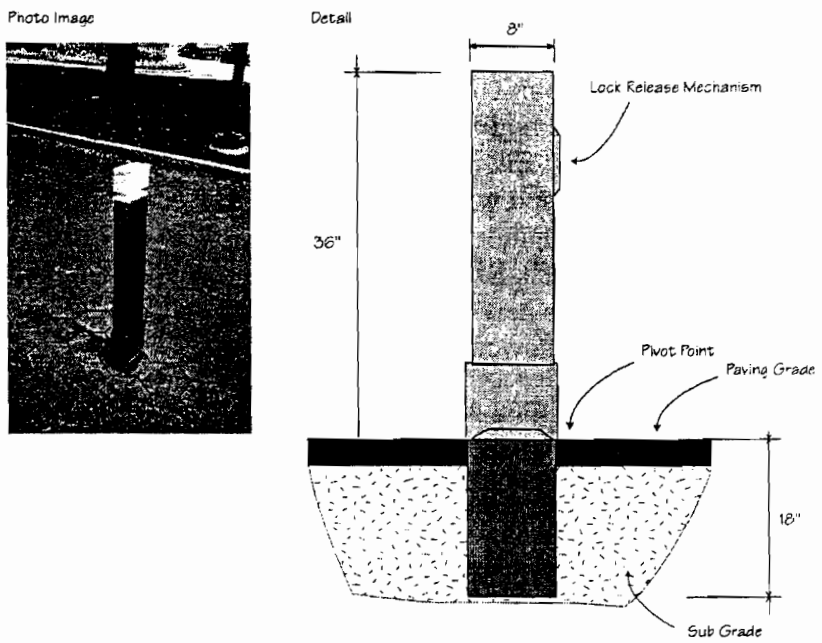


Figure 4. The collapsible bollard facilitates maintenance and emergency response access.

A linear structure that serves as both access control and fencing is proposed where the trail will closely parallel Hilfiker Lane. The narrow space between the roadway and trail (and around the Hilfiker ERWA parking lot) will need a barrier to keep motor vehicles off of the trail and beach, since there has been a historic problem with motorized vehicles on the beach. This means that approximately 1800 feet of natural waterfront vista will need a functional barrier, which should accordingly also be more aesthetic than standard chain link fence. In recent years, the City placed large boulders to (successfully) address this issue. These boulders should be replaced to 1) provide space for trail development and 2) improve the aesthetics of access control. A conceptual proposal is that this linear structure would consist of 2-3' tall concrete or rock pilings on 10-foot centers with heavy chain hung between. This structure is another situation where community artists could assist in the design of a functional, yet aesthetic project element.

New or upgraded fencing is proposed in several places (Figure 5). Along the North Coast Railroad Authority right-of-way, a 4-foot fence (a minimum of 15' from the track centerline or on the parcel boundary) is recommended to delineate city property and establish a barrier to the railroad corridor. It is recommended that this fence be 4' tall and constructed either from steel or timber frame and wire grid. This is a reasonably low cost and generally attractive fence type for this type of environment. Chain link is a much lower cost and may be acceptable if low in height and coated with colored vinyl. The vinyl adds some vibrancy to an otherwise very drab material and reduces the feeling of the "detention center" access facility.

Optimally, 420 feet of existing chain link and barbed wire fence around the pump station would also be replaced with vinyl-coated chain link or even another form of less 'climbable' fencing. If the fence was less scalable, it may not need to include barbed wire along the top, which establishes an inhospitable 'feel' in the area.

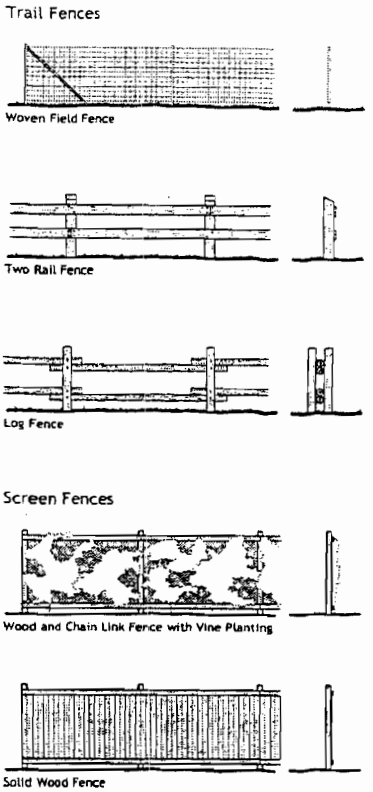
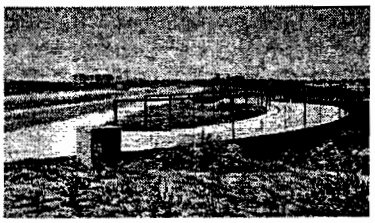


Figure 5. Several trail

Observation Platforms

Though planning and design of raised observation platforms is not in the current planning project scope, it has been identified by the City Trails Committee that at least one such structure is desired. A maximum of three observation platforms are (conceptually) proposed adjacent to the trail near the shoreline. Details about the designs for such structures can be determined in the next project design phase. An example of a coastal San Diego observation platform, below, illustrates the concept – though the site situation is different (flat ground with a need to elevate above that level), and the actual design would differ accordingly.



Observation platforms should be fully accessible, and will be natural places to locate two (or three) interpretive panels. Two alternatives are recommended for observation platform design:

- At the northwest corner of Truesdale Vista Point, a structural platform, approximately three to four feet in height, is proposed (Figure 3).
- Adjacent to and west of the trail, one or two raised earthen observation areas are recommended, approximately three to four feet in height (Appendix A).

Depending on design, these structures may introduce an increase in cost and permitting complexity to the project, but would create a very visitor-friendly, landscape focus to the overall facility and help showcase the attraction of the area for birdwatching.

Shoreline Armor Needs Assessment

Between Truesdale Vista Point and the corner of Hilfiker Lane is the only 'sandy beach' on the Eureka waterfront. This area also shows signs of shoreline erosion. Existing shoreline slope protection at the foot of Truesdale Street (concrete slabs that appear to have been dumped at the location without any design) appears to be 'unravelling', and sections of roadway and Vista Point property are being lost to erosion. To determine the need for and potential extent of shoreline armoring necessary to protect the proposed access facilities,

a preliminary assessment of coastal erosion and treatment alternatives was developed by SHN Consulting Engineers and Geologists (Appendix D).

In summary, this report indicates that the part of the project area with shoreline erosion potential is immediately west and south of the Truesdale Vista Point, where there is no 'protection' from wave action by the Elk River Spit. Additionally, portions of beach in the project area where erosion of historic fill materials on the shoreline has produced cobble and gravel beach materials that appear to also be providing some level of shoreline protection.

Shoreline protection at the foot of Truesdale Street should be replaced with specifically-designed structural protection to prevent further loss of the roadway and Vista Point facility. It is not recommended that the beaches in the project area be treated with rock slope protection, however, if shoreline erosion accelerates, which does not appear to be likely, small diameter cobble or gravel could be used to provide additional shoreline protection that will still provide for beach qualities and facilitate beach access.

Pound Road Access Design Alternatives

Pound Road, at the southern end of the project area, currently serves as a popular but undesignated public access point (Figure 6). This site is problematic for access improvements for several reasons: parking space is very limited at the 'trailhead'; the neighboring land use to the north (Eureka Protein, or the 'tallow factory') often generates unappealing odors; and public access to the ERWA and existing maintenance road trail requires crossing of the Northwestern Pacific Railroad corridor where there is no established public rail crossing facility.

The Pound Road access site is important to the proposed project because 1) the public will continue to use it, and if the rest of the facilities are improved, use of this access point will increase in an unmanaged fashion, and 2) this is the closest coastal access point for the residents of south Eureka.

Establishing a public access route over the railroad corridor will be a challenge. The best way to begin this process is to arrange a site visit for the 'Rail Safety Contact' of the California Public Utilities Commission for Humboldt County. This staff member, David Stewart, has been provided with project description and crossing location information. After a site visit, Mr. Stewart can provide additional consultation regarding the permitting process for development of a legal railroad crossing. It may be beneficial to determine the levels, extent and history of public use between Pound Road and the ERWA to establish the significance of pedestrian use of the railroad corridor crossing.

An existing state 'Park and Ride' lot is located approximately 1000 feet from the end of Pound Road where there is enough room for several vehicles. Pound Road, however, is narrow and utilized primarily by commercial trucks.

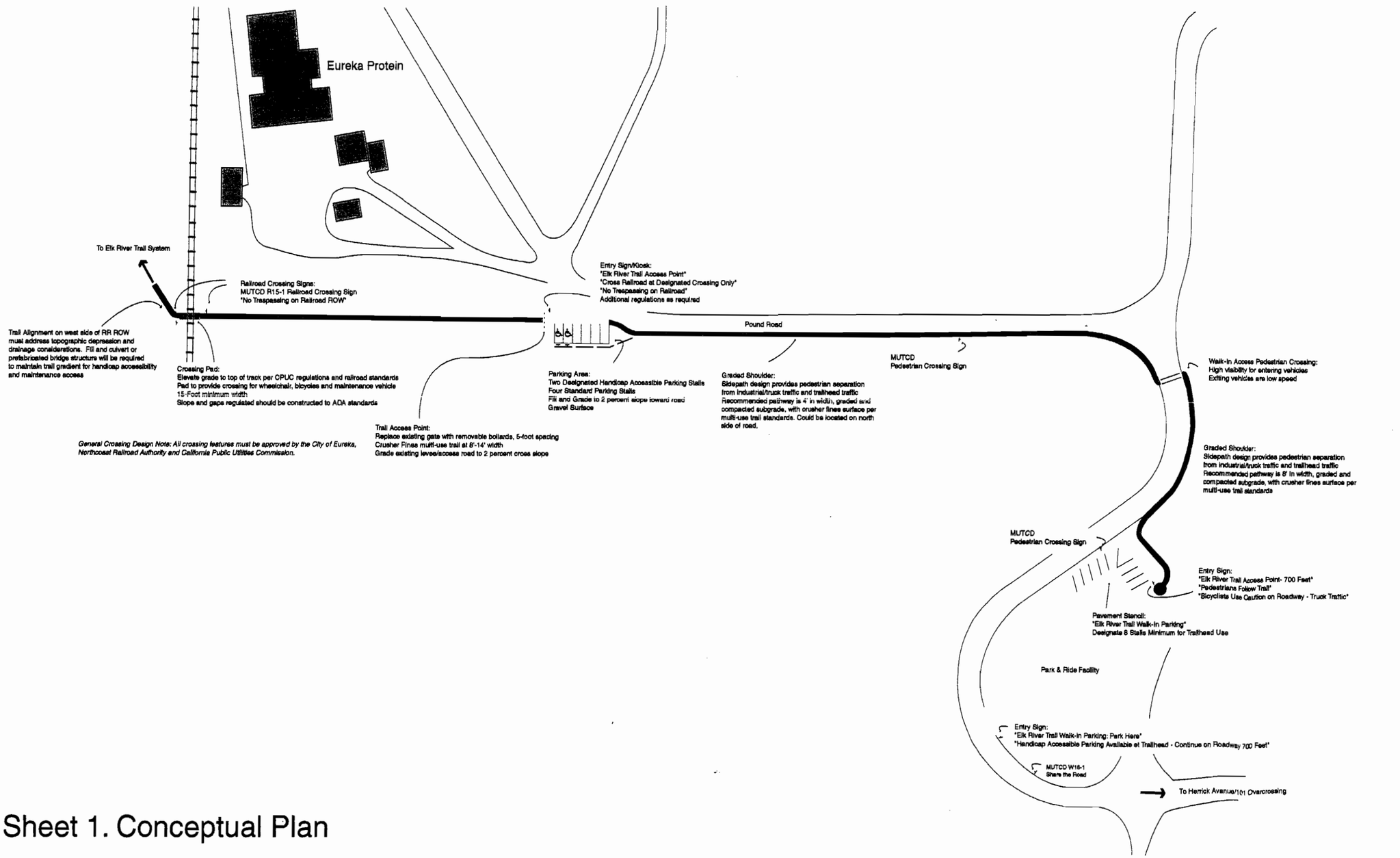
Several options exist for improving public access safety and management at Pound Road:

- Placement of signs that warn of hazardous access circumstances (if no other access improvements are made);
- Improvement of the existing small parking area to accommodate four to six vehicles;
- Utilization of the state 'park and ride' facility, expansion of the Pound Road shoulder to provide a walking surface;
- Grading and surfacing of the levee-top access trail between Pound Road and the railroad corridor; and
- 'At-grade trail crossing of the railroad corridor and connection of the Pound Road access trail to the ERWA trail.

Figure 6.

Elk River Trailhead Design

Pound Road Access Point



Sheet 1. Conceptual Plan

Prepared for: Natural Resources Services of Redwood Community Action Agency and City of Eureka, California
Prepared by: Alta Planning + Design

Restoration and Landscaping

Since much of the project area is former industrial site or otherwise disturbed by exotic plant species, many native habitat restoration opportunities exist. The local DFG office, which is a partner in the management of the ERWA, feels that an ERWA Management Plan (that including restoration priorities) should be developed before restoration projects are planned, permitted or funded.

A basic level of analysis was performed on the opportunities for native plant community and wetland enhancement. Appendix E provides detailed recommendations regarding exotic plant removal and native plant restoration recommendations. Appendix F is a cursory list of native and exotic plants in the ERWA. Additionally, on the northernmost former Crowley property site, north of Hilfiker Lane, wetland areas mapped for the 1999 SHN study could be expanded and enhanced (Appendix A).

Proposed landscaping will be a significant component of the project, and is planned primarily for the day-use areas. If landscaping were a limited element of the project, the area may still 'feel' like a former industrial site. It is important that landscaping be carefully designed to be compatible with the natural environment setting and that it plays an important role in creating a space that is inviting to the visitor without creating safety or law enforcement problems.

Landscaping recommendations include earthscaping – contour relief in conjunction with planting – where appropriate, a predominance of low-growing native vegetation, and wind buffer planting arrangements. A landscaping plan is presented for the Truesdale Vista Point (Appendix B), which will serve as a general scheme for landscaping of the remainder of the project area, specifically around the Hilfiker paddling access and ERWA trailhead sites. The remainder of the trail corridor will have minimal landscaping, except for removal of invasive exotic plants in the vicinity and appropriate replacement with natives, such as those listed in Appendix G.

MAINTENANCE

Around this region, the primary 'trailblock' to developing new public access facilities is the cost of maintaining these areas that must be born by local agencies. All of the proposed access facilities herein are recommended with maintenance feasibility and 'reality' foremost in mind. The City has clearly established the desire to develop improved access facilities in the project area by pursuing this planning effort, and by previously identifying the Truesdale Vista Point and Rotary Tidelands Park projects as priorities in the CIP.

Day use facilities will generally require more maintenance effort and attention than trail facilities. Restrooms in particular often attract vandalism and at this site should probably not be left unlocked other than during daylight hours. Lawns are relatively high maintenance, therefore, where possible, native plant landscaping is proposed.

Maintenance requirements for the only other significant multi-use trail in the region, the Hammond Trail in McKinleyville, vary greatly along the corridor. Some sections of the trail are Class III (on roads) and are treated as roadway maintenance (though this is more costly, it is not included in trail maintenance budgeting). Other trail segments are Class I paths, and some of those segments are bordered by dense vegetation. County staff note that by far the most intensive maintenance needs are brush clearing. There are no trash receptacles, bathrooms or other facilities that are managed by County staff along the Hammond Trail. County staff estimated costs for labor and materials for general maintenance in 2001 at $8,000 and for 2002 to be around $9,000. With most of the maintenance requirements occurring along approximately four miles of multiple-use trail, a rough estimate is that multi-use trail maintenance costs range between $1300 -$2100 per mile of trail in a moderate- to heavily-vegetated corridor.

Maintenance along the proposed new segment of Elk River trail will be much less labor intensive and less expensive than that required for the Hammond Trail due to the lack of brushy or rapid-growing vegetation in the trail corridor vicinity. Trail maintenance, in fact, will not be significantly more than current needs since the existing ERWA trail demands a fair amount of brush clearing, and the new trail will not require much if any brush clearing.

The amount of design consideration and level of quality construction effort given to any public access facility will directly affect the amount and intensity of maintenance required. Though well-designed, high quality facilities may be more expensive to permit and construct, the maintenance savings over their lifetime is significant.

Though not part of this project, NRS recently completed a random survey of 500 voters in the Humboldt Bay region regarding support for trail development and open space preservation. With a 30% return, there is a great deal of support for trail development in particular, and even for an increase in taxes to support the development and maintenance of these facilities:

- 70% of respondents said they strongly or very strongly believed that local governments and non-profits should develop more multi-use trails.
- 59% said they'd pay higher sales tax to help support trail development and maintenance.

Consequently, it may be possible in the future to obtain more discretionary funds for public access project development and maintenance. It is likely NRS will continue to pursue this possibility for local governments.

PROJECT MANAGEMENT

After the completion of these initial design recommendations, there are a number of steps to take the proposed project through to completion, as listed below and in the memo accompanying this document. In this early stage of project planning, the City will need to determine how project planning and implementation management should proceed.

NRS' recommendations are based on experience planning, designing, fundseeking, and implementing restoration and trail projects for the City of Arcata, the City of Fortuna, Humboldt County, State Departments of Fish & Game and Parks & Recreation, Caltrans, the Bureau of Land Management, and the U.S. Forest Service through similar 'professional services' or 'memorandum of understanding' types of agreements. In particular, several miles of the multi-use Hammond Trail in western McKinleyville has been constructed using this mechanism between 1994 and 2000.

Using this experience, the following are recommendations to take the project from this draft design stage through construction.

Permitting

It is recommended that as much of the project concept as possible is permitted at once. This will save time and resources in the future by avoiding multiple permitting processes.

The project area is entirely within the Coastal Zone – primarily within Coastal Commission permitting jurisdiction, and partially within City permitting jurisdiction (Appendix H).

The ERWA is zoned 'Natural Resources', where the principally permitted use is wildlife habitat, and conditional uses include pedestrian access and restoration. North of the Wastewater Treatment Facility and ERWA parking area, zoning is 'Coastal Dependent Industrial', where recreational access/support facilities and boat launching facilities are conditionally permitted uses.

Several project elements will require regulatory agency review:

- Coastal Development Permits: from both the City and the Coastal Commission.
- Truesdale Vista Point rock slope protection repair: Corps of Engineers (COE) and Water Quality Control Board.
- Sensitive species: if any are found in project area, a DFG '2081' permit is required.

The project proposal should also be discussed with agencies or interest groups who may have design and/or management concerns:

- Department of Fish & Game, as co-manager of the ERWA;
- Harbor District, regarding the paddle boat put-in site and co-management of a portion of the ERWA;
- Caltrans, regarding traffic issues at Hilfiker, Truesdale, and potentially Pound Road; and
- Adjacent residential and commercial landowners.

The following is a summary of permitting process element recommendations compiled from City Community Development staff and regulatory agency staff and an estimated project timeline:

Element	Who	Sept		Oct		Nov		Dec		Jan		Feb		Mar	
1) **Interdepartmental, Committee and Council Review**: confer with City Police and Fire Depts. regarding emergency access issues related to site designs, and present project for input and conceptual recommendation by Parks and Rec. and Harbor Commissions to Council. Present project concept to Council.	NRS CD	*	*												
2) **Construction drawings**: preparation of project designs for permitting.	NRS CS, PW	*	*												
3) **Regulatory Agency Meeting**: gathering of Commission, DFG, COE, and other necessary representative staff (Caltrans, WQCB) to discuss finalization of project design and permitting needs.	NRS CS, CD			*											
4) **Biological, Cultural Resources Surveys**: basic project area surveys for sensitive, threatened and endangered species and for cultural resources. (And potentially for traffic impacts, however these may not be necessary and relevant traffic studies may already exist if they are necessary).	NRS CS CD			*	*	*									
5) **California Public Utilities Commission**: site visit and request for permission to develop a 'legal' railroad crossing for pedestrian/bike traffic at Pound Road.	NRS CD?			*	*	*	*	*	*						
6) **Draft Initial Study**: prepared in City's format; early draft completed for *Bay Trails Feasibility Study*.	NRS				*	*	*	*							
7) **Public Involvement**: inform adjacent landowners and interested public of proposed project at a well-publicized Trails Committee meeting (and potentially individual contact) and record input.	NRS, CS						*								
8) **CEQA, Conditional Use Permit and Coastal Development Permit Processes**	CD							*	*	*	*	*	*		
9) **Design Review & Council Approval**: City committee review and approval.	CD, CS NRS											*	*		
10) **Detailed Project Designs**: final engineering for project components which require it; final site designs for components which require it.	NRS, CS, PW					*	*	*	*						
11) **Regulatory Permits**: Prepare draft COE, WQCB, DFG permit applications for City Community Development staff.	NRS						*	*	*						
12) **Regulatory Permits**: Submit applications and obtain permits.	CD								*	*					
13) **Fundseeking**: Coastal Conservancy; other local contributors; other grant proposals.	NRS					*	*	*	*	*	*	*	*	*	
14) **Project Implementation**: mechanism for and extent of 'Phase I' scope to be determined.	?													*	→

NRS: Natural Resources Services staff and subcontractors, CD: Community Development staff, CS: Community Services staff, PW: Public Works staff

Potential Permitting Needs

- If the Amidi Partnership parcel is to be donated to or acquired by the City, a Phase I Environmental Report will need to be executed. This report would include an analysis of the site and recommendation to Council that the City or purchase the property.
- If it is a priority to underground the utilities in the project area, creation of a Utility Undergrounding District may be the best and most cost-effective long-term solution.
- A Caltrans Encroachment Permit may be necessary if the Park and Ride facility is to be utilized as trailhead parking.
- At some point, it may be worthwhile to pursue a zoning change for the former Crowley property (north of Hilfiker) and Truesdale area to 'Public' (now zoned as Coastal Dependent Industrial).

Cultural & Biological Surveys

During project planning, the approximate footprint of disturbance should be shown to the Wiyot Tribe to ensure their ancestors' sites are not in jeopardy of being disturbed. The tribe has 'known sites' of cultural significance mapped around the bay, and will notify project planners of potential interface if they are involved early. This information should be recorded in a general way, without specific site location, for further planning efforts and CEQA use, since it is best not to provide information about site location to reduce the potential for all-too-common looting and defacement.

It is recommended that a Wiyot archaeological monitor and an archaeologist be present during all earthmoving activities. If there is a potential that unknown sites may be disturbed, sample plots and a surface survey should be conducted prior to construction by a professional archaeologist accompanied by a Wiyot monitor. These precautions minimize the potential for cultural resource damage and extra costs associated with stopping work during the implementation phase. It is also recommended that the proposed trail be called 'Iksori Trail', to honor the previous site name, but final approval from the Wiyot Tribe is necessary.

It is known that at least one sensitive plant species calls the project area home. Humboldt Bay owl's clover grows just northwest of the existing Hilfiker Lane ERWA parking lot and also in areas near the proposed riverside footpath. As noted by the Sacramento office of the USFWS on their Endangered Species Program webpage (http://sacramento.fws.gov/es/plant_spp_accts/johnny_nip.htm):

> *In both Humboldt and Tomales Bay, Humboldt Bay owl's-clover grows in very small colonies. Although it has not been officially listed by the State of California, the Department of Fish and Game considers it to be "threatened." The California Native Plant Society has placed it on List 1B (rare or endangered throughout its range).*

In relation to any shoreline or tidal marsh disturbance associated with the project, other sensitive species that could be an issue are eel grass (*Zostera marina*) and the black brandt (*Branta nigricans*) that depends on it for food. Other sensitive plants in the area – on the spit – are Humboldt Bay wallflower (*Erysimum menziesii ssp. eurekense*) and beach layia (*Layia carnosa*). Other sensitive plants or animals may also live in the project area, and formal surveys should be completed to ensure that biological impact information will be accurately reported in the Initial Study.

Engineering Needs

There are a number of issues that will require some level of engineering. Detailed design work will need to be accomplished by engineering consultants under direction of NRS and in consultation with City Public Works and Community Services staff.

Truesdale Vista Point

These trailhead facilities will require:

- Construction drawings for the parking lot facility and upgrade of the end of Truesdale Street;
- Stormwater and restroom wastewater management designs;
- Undergrounding of utilities (see Utility Undergrounding, below);
- Electrical infrastructure for lighting; and
- Shoreline armor design for the foot of Truesdale Street.

Transmission Line

NRS recommends a trail layout that parallels the City's transmission line for part of the route between Truesdale Vista Point and the Hilfiker Trailhead. Activities to be proposed in proximity to the transmission line include: debris clean up by a backhoe and dump truck (including removal of cyclone fence posts), backhoe manipulation of some dune features (within or near fenceline) and clearing vegetation, removal of vegetation by box scraper or grader), filling of low areas and addition of surface materials (numerous 10 yard trucks hauling debris and construction materials), and compaction of crushed shale or other surfacing material by a roller.

Construction of the trail adjacent to, but not directly above (except where the trail need to cross) the wastewater transmission line is potentially acceptable, however some truthing may be necessary to determine the exact location of the line and its proximity to the surface. It may be that this truthing could be completed by City staff.

Utility Undergrounding

If possible, it is recommended that overhead utilities in the project area are 'undergrounded' to improve coastal scenic vistas and reduce conflicts at the time of construction. At the Truesdale Vista Point, the pole serving the City's pump station is on the waveslope, and other poles on the north side of the street will affect parking lot/streetscape design recommendations. Along Hilfiker Lane, there are eight utility poles between the proposed trail corridor and the roadway.

City Public Works staff recommend that an 'Undergrounding District' be formed in the project area. Though it may take longer than the life of the project to establish this district, the City would later be reimbursed for the expenses of undergrounding powerlines. The connection between those powerlines and private residences and businesses in the area, however, would be a local responsibility, though not likely an insurmountable expense.

Since it will take beyond the life of the current proposed project to establish a district, and the Hilfiker Lane poles will likely demand a more expensive undergrounding process, it is currently proposed that only the utilities around the Truesdale Vista Point are undergrounded. It is optimal for the success, ease of implementation, and management of the project that the Hilfiker poles be undergrounded, however.

Observation Platforms

Pending further design research, and the type of designs preferred by the City, these structures could range in complexity. The more complex, the more durable, and the more aesthetic they are to be, the more engineering attention their design will require.

Other Facilities

For permitting purposes, construction drawings will also likely be necessary for:

- Vault toilet facility at Hilfiker ERWA trailhead;
- Sign mount structures;
- Small parking lot at the Hilfiker paddling access site; and
- Trail cross-sections for different construction scenarios (such as adjacent to Hilfiker Lane and shoreline.

Implementation

Completion of the proposed 'Elk River Access Project' will be a multi-faceted undertaking, including: development of final detailed designs and permitting; fundseeking; site preparation, trail construction; interpretive sign development; day-use facilities construction; and landscaping. The goal of the following recommendation is to see that the proposed project be implemented as quickly as possible to a very high standard, and with the least amount of burden on City staff.

NRS Implementation Proposal

As a partner with the City, NRS can take responsibility for accomplishment of the proposed project. NRS has a track record of successfully implementing complex projects – an important element of that success is based on project-specific partnerships with other agencies, contractors and consultants who add necessary expertise to a project team. Of primary importance is the pursuit of a significant amount of outside funding (outlined below), of which NRS has a nearly perfect track record for multiple-use trails and native landscape restoration projects. If funds come directly to NRS, the City is not bound to low-bid contracting requirements nor to the details of managing the project – additionally, if the City is considering multiple funding requests to the SCC (or others), a grant to NRS for a City project would not likely compete with other City proposals.

NRS staff would find funds for, design, hire/supervise contractors and build Elk River Access Project facilities in partnership with City staff. In our estimation, this is the most cost-effective process. NRS rates are relatively low and there are no prevailing wage requirements with a number of the recommended funding sources (specifically those in the short term: private donations and State Coastal Conservancy). NRS would apply directly for Coastal Conservancy or other grant funds.

The project would be constructed under S. Madrone/NRS's Landscape Contractor's License, where NRS can subcontract to various contractors most appropriate for each project component. As a licensed Landscape Contractor, NRS can only design projects if involved in oversight or implementation of those projects. *If NRS is not implementing the designs, NRS can only give recommendations regarding preliminary design specifications.*

PRELIMINARY COST ESTIMATES

The following estimates are as specific as possible at this early stage of project scope and conceptual design. Three trail development components are estimated separately from site cleanup, day use facilities and public access support amenities. The Truesdale Vista Point estimate includes: site preparation, parking area surfaced with crusher fines, landscaping, plumbed restroom, observation platform, site amenities, and roadway (including rail crossing) improvements. More detailed preliminary cost estimates are included in Appendix I.

A. Multiple-Use Trail	
Truesdale to Hilfiker Trailhead	$ 163,600.00
Improvement of Existing ERWA Trail	$ 101,720.00
B. Riverside Footpath	$ 41,580.00
C. Cleanup, Landscaping, Undergrounding, Public Art	$ 118,000.00
D. Day Use Areas Infrastructure	
Truesdale Vista Point (see written description)	$ 278,900.00
Hilfiker Paddling Access	$ 28,000.00
Pound Road	$ 32,000.00
Earthen observation points	$ 14,000.00
E. Amenities	
Signs	$ 86,000.00
Access Control and Fencing	$ 53,000.00
Furniture	$ 14,200.00
F. Overhead, Bonding, Contingency on C, E	$ 216,100.00
TOTAL	**$1,158,800.00**

Estimate Notes

- Estimates do not include costs for construction plans and specifications, permitting, engineering, or putting the job out to bid.
- Topographic study of some project elements will be necessary to develop construction drawings.
- The Truesdale Vista Point facility, if built to urban park standards, will have a minimum budget of $300,000 and require higher overhead costs with a greater number of subcontractors.

PROJECT FUNDING

It is recommended that the proposed project is completed in as few phases as possible. With this in mind, the most likely funding sources are listed first. Next are funding sources that should also be pursued in the short term if the 'full' project option is the goal. Potential funding sources for future projects, recommended in the 'Summary of the Recommended Project' section, are also included below.

Available Funds

Local Benefactor

More information is needed about terms and conditions associated with the reported $250,000 available to the City for multi-use trail development. It is necessary for the fundraising effort to clearly identify for which project elements this funding can be utilized, and it should absolutely be used to leverage as much grant funding as possible. It has been assumed that these funds should not be applied to the costs of designing such a facility, but this needs to be confirmed. Final design and engineering costs are always the hardest parts of a project to fund.

State Coastal Conservancy

The Conservancy is very interested in contributing to the project. It is recommended that the Conservancy request include area cleanup and development of the Truesdale Vista Point facility and associated amenities, approximately $300,000. The Conservancy requires that a CEQA determination and approved Coastal Development Permits be a part of the staff report to the Board.

The Conservancy and a host of matching agencies and foundations will also be providing the designs for approximately eight of the interpretive signs proposed for this project. Implementation funds will be necessary to get the signs 'in the ground'.

Proposition 40: Discretionary Funds Available to City of Eureka

This source is mentioned here because competitive grant programs may want to know how the City is using their own 'pool' of California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002 monies available for access and restoration projects. It is recommended that the City develop a strategy for use of these monies. If the City had a strategy, for example, to focus discretionary funds on operations and maintenance, or restoration and access in the gulches (projects that may have more difficulty competing for statewide programs) then, these statewide, competitive programs might better see how their funds fit into the Eureka public access (and open space/restoration) strategy. Per capita Proposition 40 funds might also be best utilized for this project as design, engineering and maintenance funds.

California Conservation Corps

The CCC has matching Proposition 12 and 40 funds. Their Fortuna Center is interested in potentially supplying labor for trail construction, particularly the proposed walking path loop south of the existing Hilfiker Lane parking area, and for restoration. Fortuna Center coordinator Mel Kreb and assistant Tom Merrill visited the project site. Their primary requirement is that the work is crafted to serve as education for the Corpsmembers. For instance, education regarding the uniqueness of the Elk River spit dune ecosystem and Wiyot cultural history could be taught by local experts. Once more project specifics are known, Fortuna Center coordinator Mel Kreb, or his staff Tom Merrill or Bob Frechou, should be contacted to determine potential CCC availability for partnership.

Additional Funds to Be Sought

It is recommended that the following programs and sources be pursued for additional project funding. Initial contact with program representatives should occur soon. The City may have other public access and restoration projects that are also priorities for these programs, so some strategizing may need to take place.

California Department of Parks and Recreation: Habitat Conservation Fund Program

This program provides matching funds to local governments for habitat restoration and for public access projects that help urban residents access wildlife areas. West Eureka is the most urban setting in northwestern California, and this proposed project touches on several of the program's parameters. The HCF program might be a good source of funds for wetland habitat restoration, interpretive signs, and other amenities not funded by local and Conservancy dollars. They provided funds to Manila CSD last year for a wetland project – otherwise, this program has provided literally nothing to northernmost California. Application packages must prove that proposed projects comply with CEQA. Applications are due in October for 2003 projects.

Department of Fish and Game: Public Access Program

This program provides state/local cooperative projects with funds (not grants) for acquisition or improvements that preserve wildlife habitat or provide recreational access for hunting, fishing, or other wildlife oriented recreation. Qualifying projects include developments such as fishing piers or floats, access trails or roads, boat launches, wildlife observation and interpretive trails, restrooms and parking areas. Funding can be up to $250K, not including engineering and CEQA costs, and no matching funds are required for non-pier projects.

National Fish & Wildlife Foundation

Provides federal matching funds for fish, wildlife, plant conservation and education projects as well as public access projects. There are numerous programs, however one of most relevant to this project is the 'Pathways to Nature' program, which funds wildlife and bird viewing and education opportunities at significant nature tourism destinations in US and Canada. Funds must be matched equally with non-federal match/es – only a total of $100,000 is available in 2003, however.

NRS has been discussing the development of a proposal with the Humboldt Bay National Wildlife Refuge, and it may be possible to propose a project with two components that can compete as a 'significant nature tourism destination'. Another NFWF program may provide funds for the Humboldt Bay Interpretive Signing Program, and a 'Pathways to Nature' grant could be written for access facilities like Elk River observation platforms and interpretive signage.

Local Contributions

With more formalized project designs, approaching local manufacturers and businesses to either sponsor elements of the project or donate materials is recommended. For instance, approaching Hilfiker Pipe Co. for concrete picnic tables and Pierson Lumber Company for landscaping materials should be considered. Businesses like Northcoast Auto could be approached as sponsors.

California Department of Parks and Recreation: Recreational Trails Program

This program provides funds to local and state governments, districts, and non-profits for trails and access projects. They may prioritize non-coastal projects, as the State Coastal Conservancy covers those projects well. Applications are due in October for 2003 projects.

Wildlife Conservation Board

The WCB provides funds for habitat restoration and wildlife access projects. The board meets ten times annually to select projects. Theirs is a similar process to State Coastal Conservancy – in other words, funds can be secured on a relatively short timeline. The WCB has provided a significant amount of funding for acquisition of lands and easements in and around Arcata in the last several years. Their staff are interested in receiving a proposal with the consent of the local DFG office. The local DFG office, however, feels that an ERWA management plan which includes restoration priorities should be developed before projects are planned, permitted or funded.

Recommendations for Funding Future Projects

Streetscape improvements to two streets that intersect US 101 will help motorists recognize the proximity of and access opportunities awaiting at the Humboldt Bay shoreline. Currently, most motorists have no idea that the bay is so close, or that there are coastal public access opportunities nearby.

California DOT: Environmental Enhancement and Mitigation (EEM) Program

This Caltrans program has funded several phases of the Hammond Trail in McKinleyville, and provides up to $250,000 per project. The goal of the program is to mitigate Caltrans projects through a competitive grant program. A potentially relevant Caltrans project is the retaining wall recently constructed across the highway from both site access streets.

Of the three EEM categories, 'Roadside Recreational' is likely a good project fit. A first step is to discuss early project concepts with the local office, potentially starting with former City staff Joel Canzoneri. This project could possibly be incorporated into US 101 streetscape improvement plans – funds were sought by City Public Works for a Broadway/101 gateway improvements through this program in 2000-01 – as well. Possibly, after some communication with Caltrans, these two projects could be combined.

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Pacific Watershed Associates. 1994. *Handbook for Forest and Ranch Roads: A Guide For Planning, Designing, Construction, Reconstructing, Maintaining And Closing Wildland Roads.* McKinleyville, CA.

Parker, Troy S. 1994. *Trails Design and Management Handbook.* Open Space and Trails Program Pitkin County, Colorado. Boulder, CO.

SHN Consulting Engineers & Geologists, Inc. 1999. *Opportunities and Constraints Analysis : Crowley Marine Property, City of Eureka.* Prepared for the City of Eureka.

Rails-to-Trails Conservancy. 1993 and 2000. *Trails for the Twenty-First Century: Planning, Design, and Management Manual for Multi-Use Trails.* 1st and 2nd Eds., Edited by Karen-Lee Ryan. Covelo, CA: Island Press.

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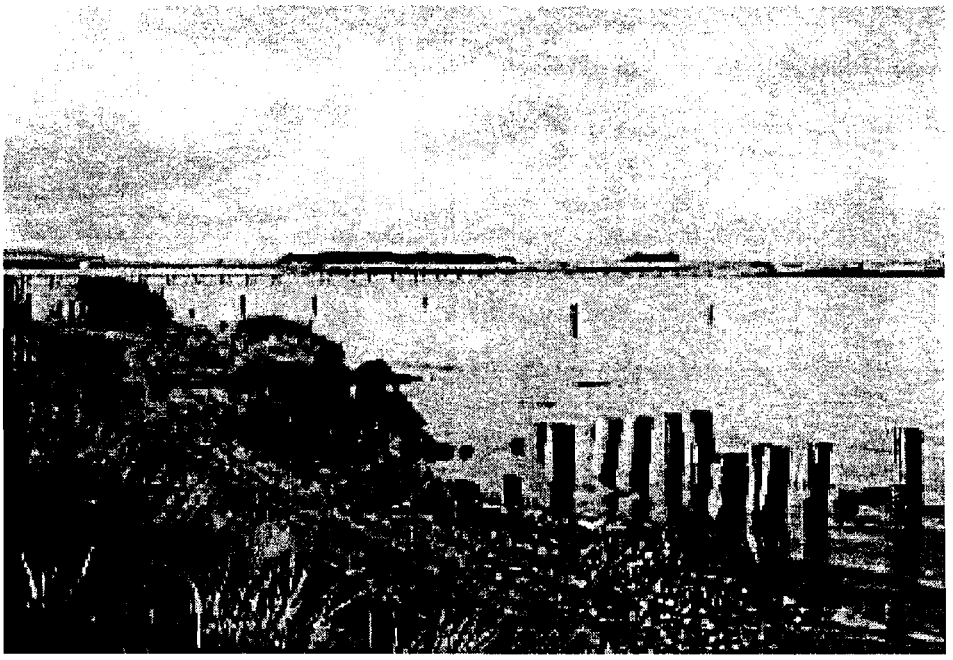
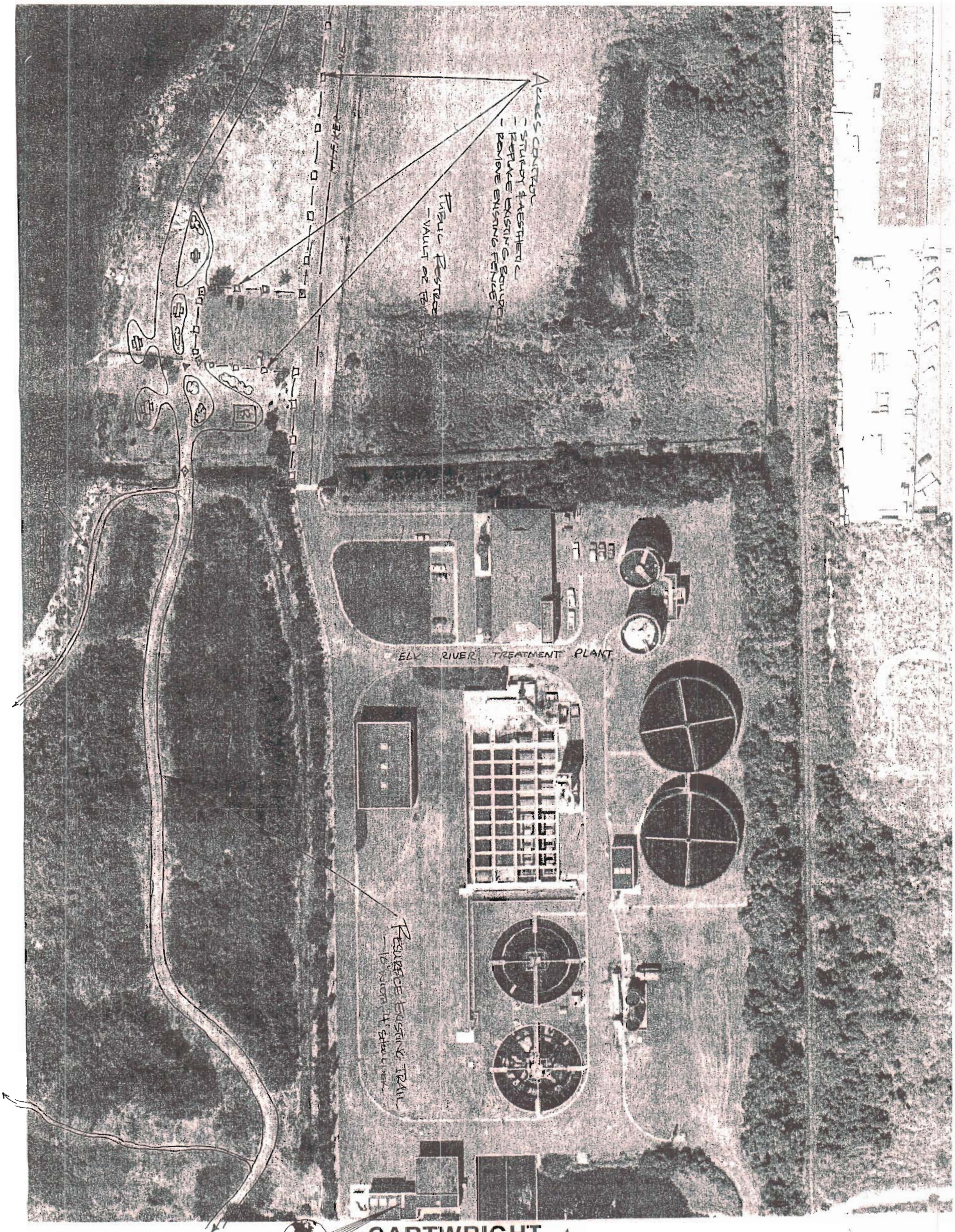
Appendix A

Elk River Access Project

Recommendations



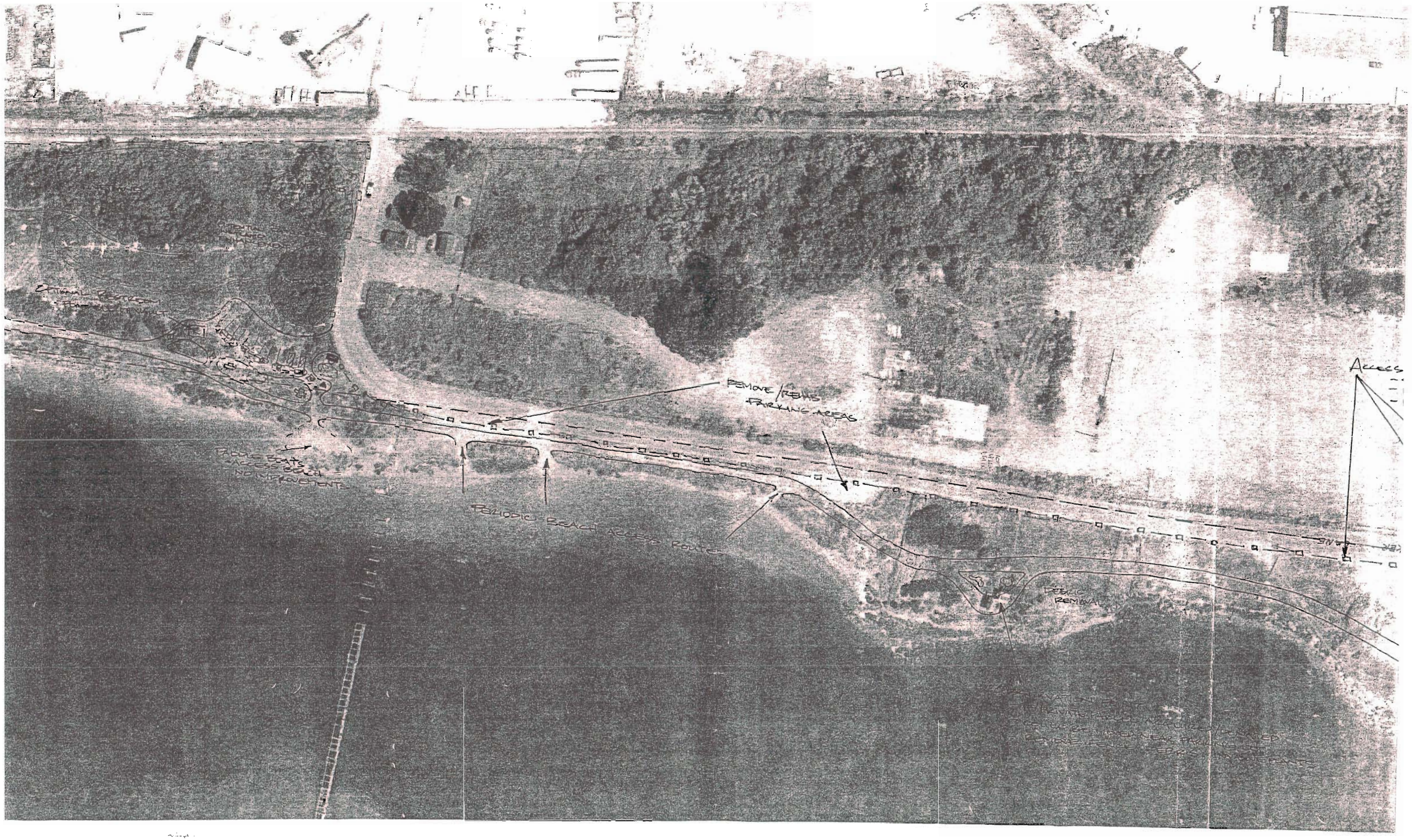


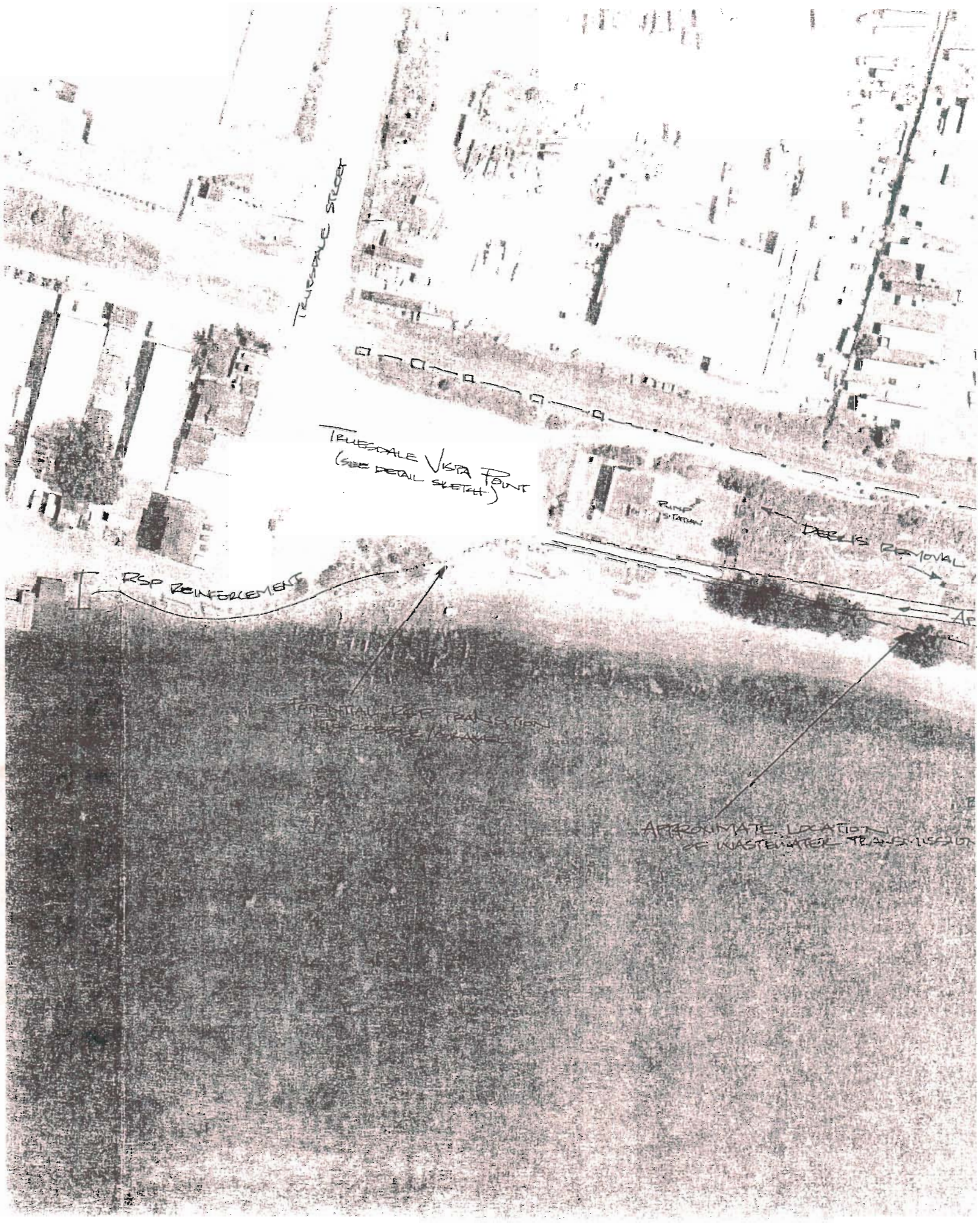
Aerial Photography by CARTWRIGHT AERIAL SURVEYS, INC.

1" = 100' ±

Date: Sept. 4, 1998

Photo No. 4


Access
Remove/Relocate
Parking Areas
Boat Ramp
Access Beach
No Improvements
Periodic Beach Access Route
Debris
Removal


TRUESDALE STREET
TRUESDALE VISTA POINT
(SEE DETAIL SKETCH)
PUMP STATION
DEBRIS REMOVAL
RSP REINFORCEMENT
POTENTIAL R&R TRANSITION
APPROXIMATE LOCATION
OF WASTEWATER TRANSLOCATION

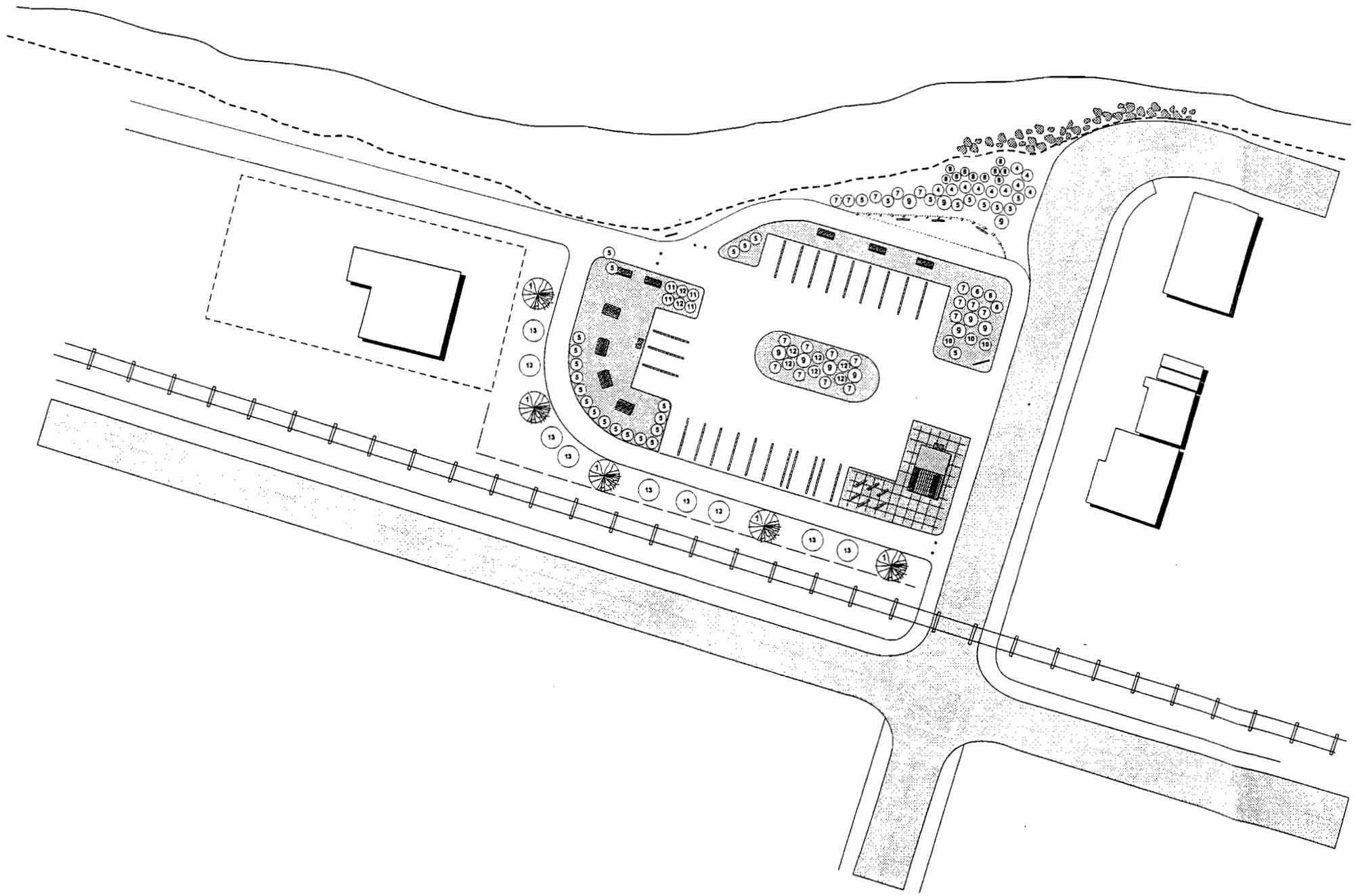
Appendix B

Elk River Access Project

Recommendations

Elk River Trailhead Design

Truesdale Vista Point
Sheet 2. Conceptual Landscape Planting Plan



Prepared for: Natural Resources Services of Redwood Community Action Agency and City of Eureka, California
Prepared by: Alta Planning + Design

Scale
0' 10' 20'

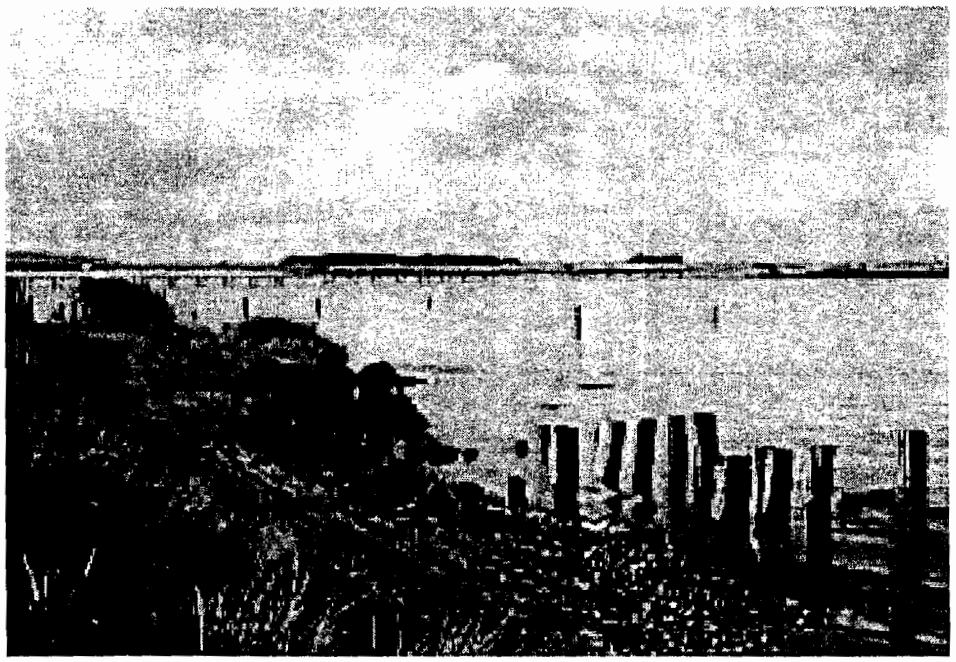
N

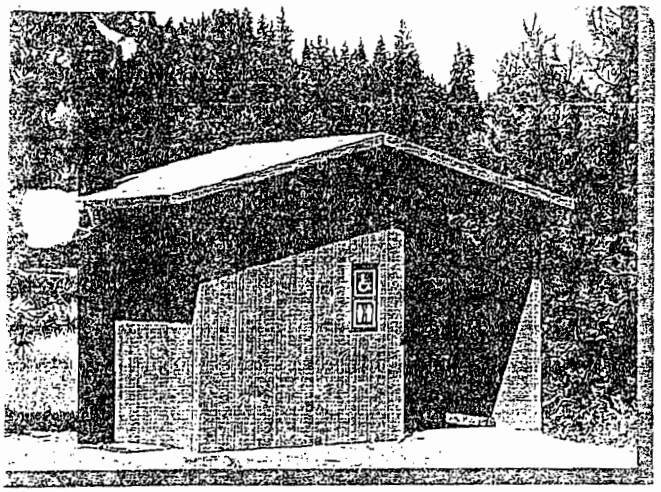
alta

Appendix C

Elk River Access Project

Recommendations





APPENDIX C

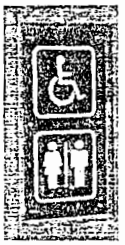
CXT

Precast Concrete Products

Gunnison

- Sweet Smelling Technology
- Meets UFAS, A.D.A. and Title 24 statute of the State of California
- Vandal resistant building, vault & Toilet Components
- 4" thick steel reinforced concrete walls
- 5" thick steel reinforced concrete roof & floors
- 1,000 gallons or 15,000 uses per containment vault
- Black ABS one piece vault liner with side wall embeds
- Available in (25) different earthtone colors
- Barnwood or struck trowel exterior wall textures
- Cedar shake or standing seam exterior roof textures.

The Gunnison is a single vault toilet building designed with a 60" turning radius within the toilet room. The turning radius is measured exclusive of all fixtures, walls and door. The Gunnison comes with a single 1,000 gallon vault to hold the waste.

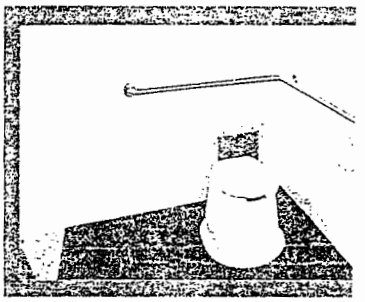


Durability

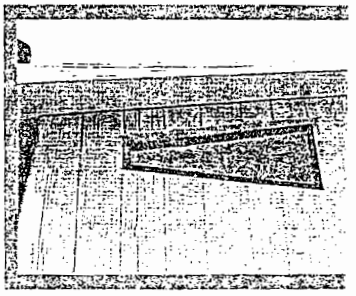
The Gunnison is engineered and designed for long life in extreme conditions. The building meets or exceeds the effects of a Zone-4 earthquake, a 120 mph wind load and a 350 pounds per square foot snow load.

Maintenance

The Gunnison is extremely easy to maintain. With our steel reinforced 5,000 psi concrete construction, the building and vault will not rot, rust or burn. The building's interior is primed and painted with white paint to reflect natural light from the Lexan windows mounted in heavy steel frames cast into the walls.



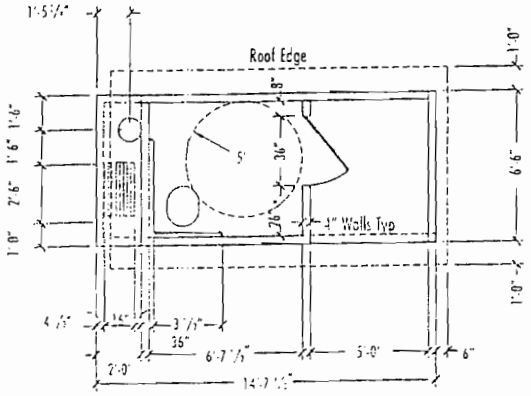
Cleaning of the building's interior is easily accomplished with a brush and warm soapy water. The walls and roof structure are made with "colored thru concrete", which are spray coated with an exterior stain, followed by an anti-graffiti sealer.



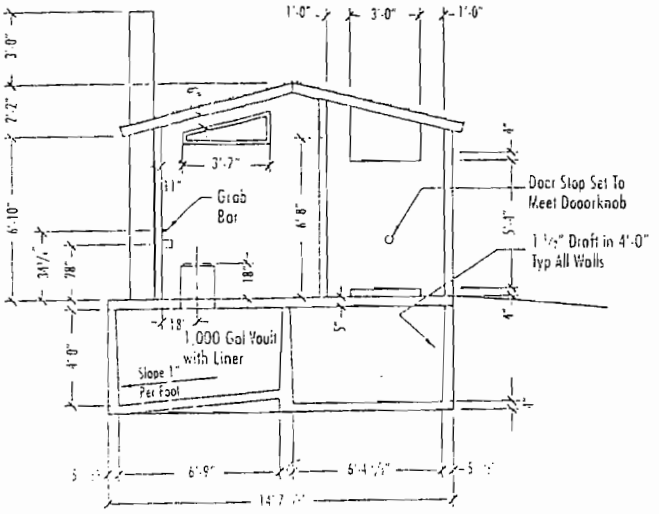
Precast Concrete Products

Product Data

Gunnison Style Toilet Building

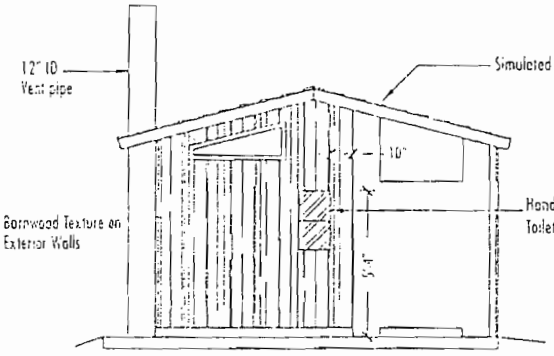


Floor Plan
(Right-Hand Shown)

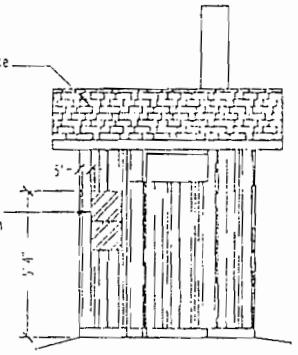


Left-Hand Schematic

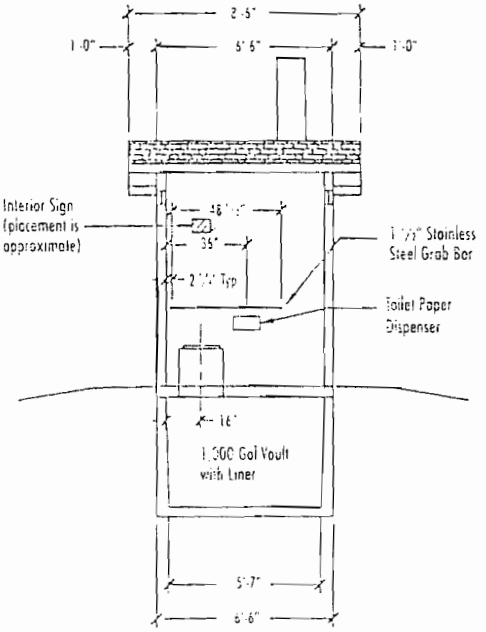
Right-Hand Schematic

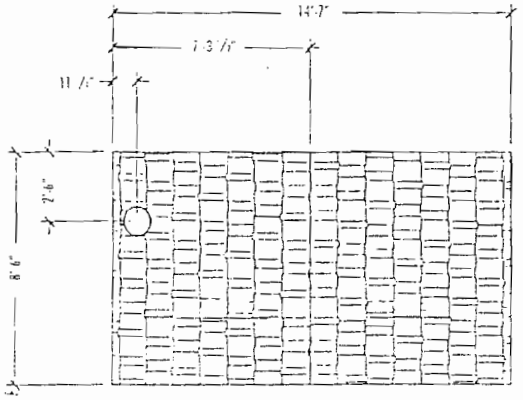


Side Elevation



End Elevation





Roof Plan

CXT Incorporated
An L.B. Foster Company

Spokane Industrial Park
3808 N. Sullivan Road Bldg. #7
Spokane, WA 99216
Telephone 509-921-8766
Fax 509-928-8270
Toll Free 800-663-5789

PPD9910/2000

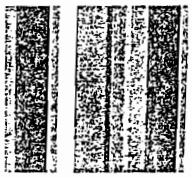
Available in these textures:

Walls:

Barnwood Texture

Stucco Texture

Roofs:



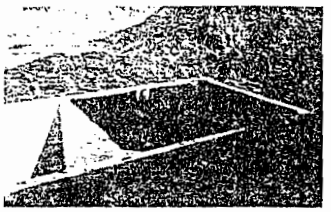
Ribbed Metal Texture

Cedar Shake Texture

Also available in 25 different earthtone colors.

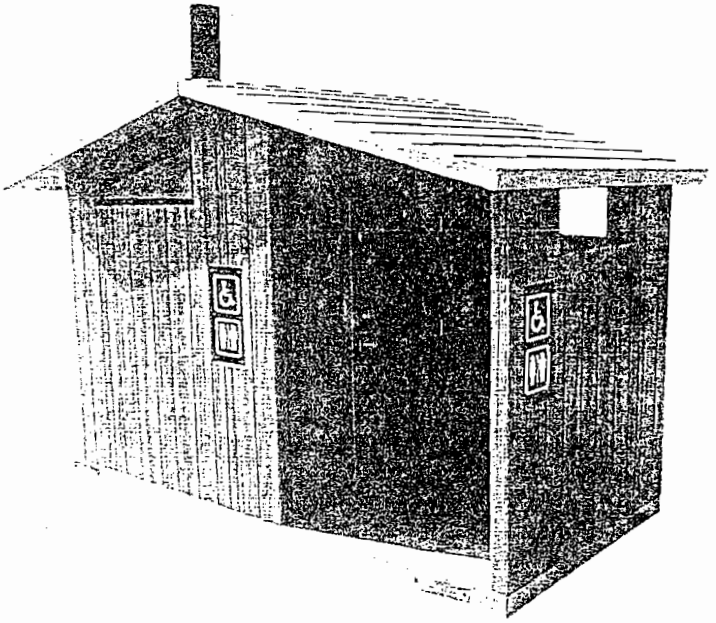
Vault

The waste collecting vault is installed below ground level and is made of 4" thick reinforced concrete. The dimension of the vault unit matches the perimeter of the building, providing a stable footing structure which supports the full weight of the building. The vault can hold up to 1,000 gallons of waste, or 15,000 uses, and is sloped, so that waste will drain to the clean out end of the vault. The vault is lined with a black ABS plastic liner which is cast into the side walls of the concrete vault by way of dovetail embeds.



Sweet Smelling Technology

The building is designed with sweet smelling technology in mind. A black plastic vent pipe, located on the back side of the building, always face south. When heated by the sun, the pipe creates a continual air flow through louvered vents located in the building near the floor. The air flows down the riser, through the vault, and finally, up and out of the vent pipe. The positive continual air flow carries the vault air out through the vent pipe, not through the building.



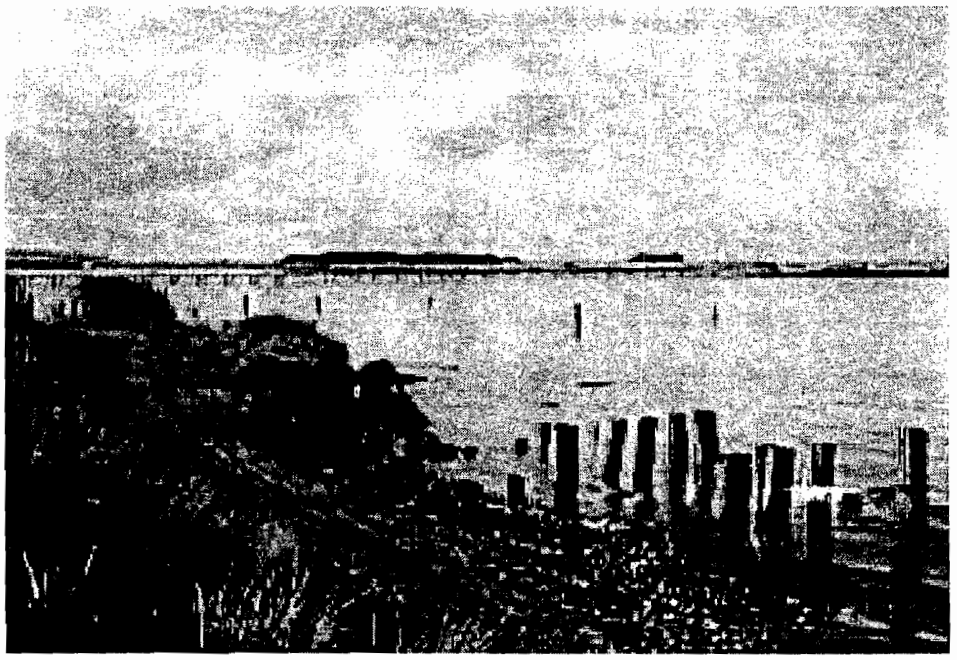
CXT Incorporated
An L.B. Foster Company

Spokane Industrial Park
3308 N. Sullivan Road Bldg. #7
Spokane, WA 99216
Telephone 509-921-5766
Fax 509-928-8270
Toll Free 800-696-5789

Appendix D

Elk River Access Project

Recommendations



APPENDIX D

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707-441-8855 • Fax 707-441-8877 • shninfo@shn-engr.com

Reference: 002021

June 11, 2002

Ms. Jennifer Rice
Redwood Community Action Agency
904 G Street
Eureka, CA 95501

SUBJECT: PRELIMINARY COASTAL EROSION AND MITIGATION ALTERNATIVES, ELK RIVER ESTUARY, HUMBOLDT BAY, EUREKA, CALIFORNIA

Dear Ms. Rice:

SHN Consulting Engineers & Geologists, Inc. (SHN) has completed the scope of work outlined in our agreement with the Natural Resources Services Division of Redwood Community Action Agency (RCAA) dated February 27, 2002. As such, we are pleased to present the results of coastal erosion hazard investigation and to provide preliminary, low impact shoreline erosion mitigation alternatives.

To evaluate changes in coastline morphology, a sequential air photo analysis was conducted using stereographic photos of the following dates and scales.

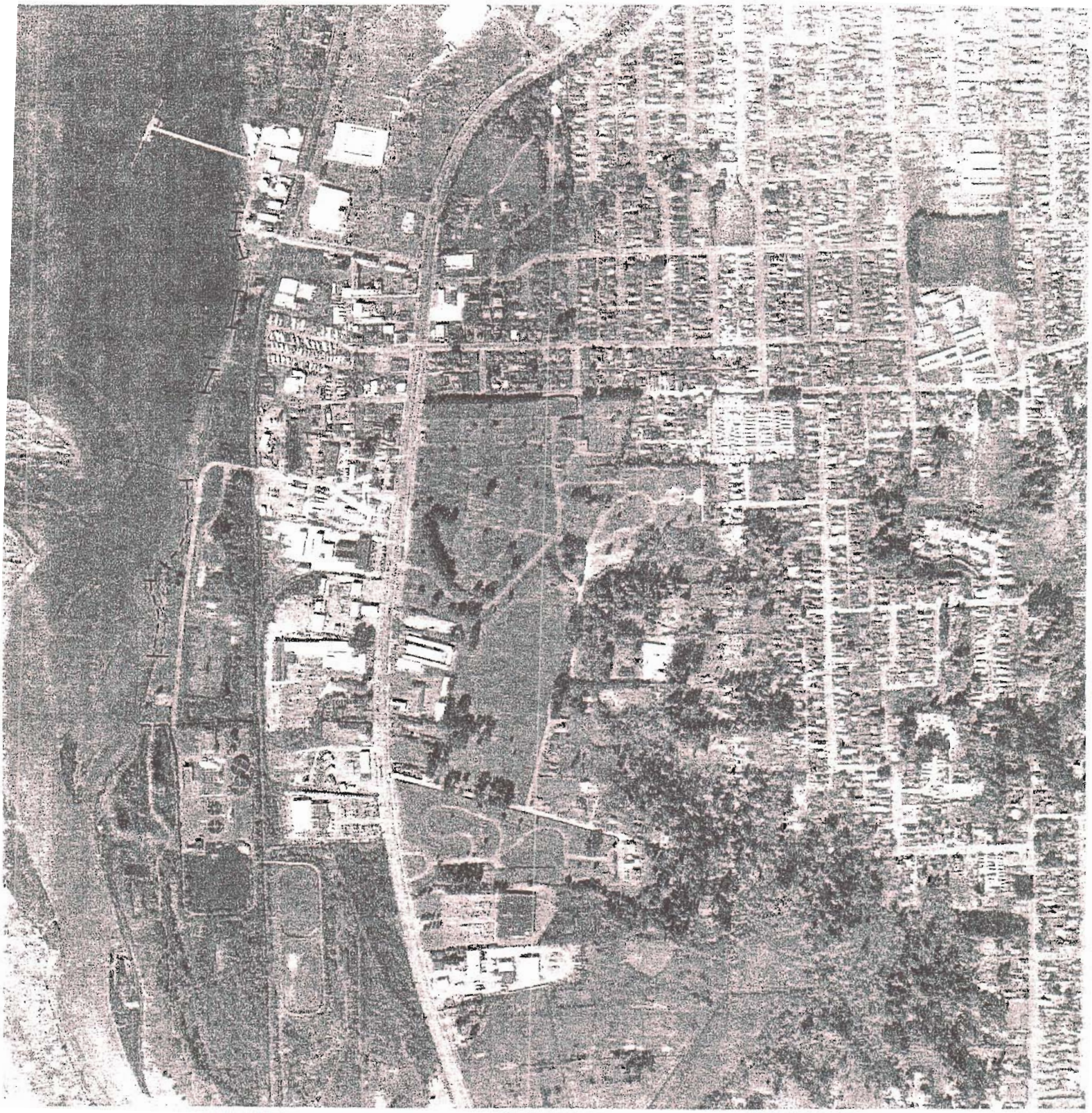
Year	Scale
1939	1:10000
1941	1:20000
1958	1:12000
1962	1:12000
1966	1:12000
1970	1:12000

Year	Scale
1974	1:12000
1980	1:24000
1981	1:26000
1988	1:34000
2000	1:26000
2002	1:13000

In addition, historic maps and surveys dated 1854, 1870, 1874, 1894, and 1921 were examined to evaluate longer term trends in the coastline configuration changes.

Prior to construction of the jetties, it appears that the coastline located between the foot of Truesdale Avenue and the Eureka Wastewater Treatment Plant was subject to erosion from waves entering the mouth of Humboldt Bay. Due to a combination of factors including construction of the jetties, placement of rock slope protection along the coastline segment extending from Buhne Point to Elk River, levy confinement of Elk River, and increased Elk River sediment yield, the Elk River Spit has prograded (lengthened) approximately 5,000 feet to the north during the past 125 years. As such, the spit now provides erosion protection from ocean and bay generated wind blown waves for the southern half of the project. The northern half of the project is not protected by the spit and is subject to wind driven wave attack as well as

wave run-up generated by passing ships. This is primarily the Truesdale Beach segment of the bay shoreline. Within the project area, the most significant area of erosion that should be mitigated is the end of Truesdale Avenue.



0 ~800 ft

Explanation

Areas of minor erosion identified during field reconnaissance

Areas of historic erosion identified on air photos

Cobbled areas identified during field reconnaissance

N

COASTAL EROSION EVALUATION
ELK RIVER TRAIL
EUREKA, HUMBOLDT COUNTY, CA

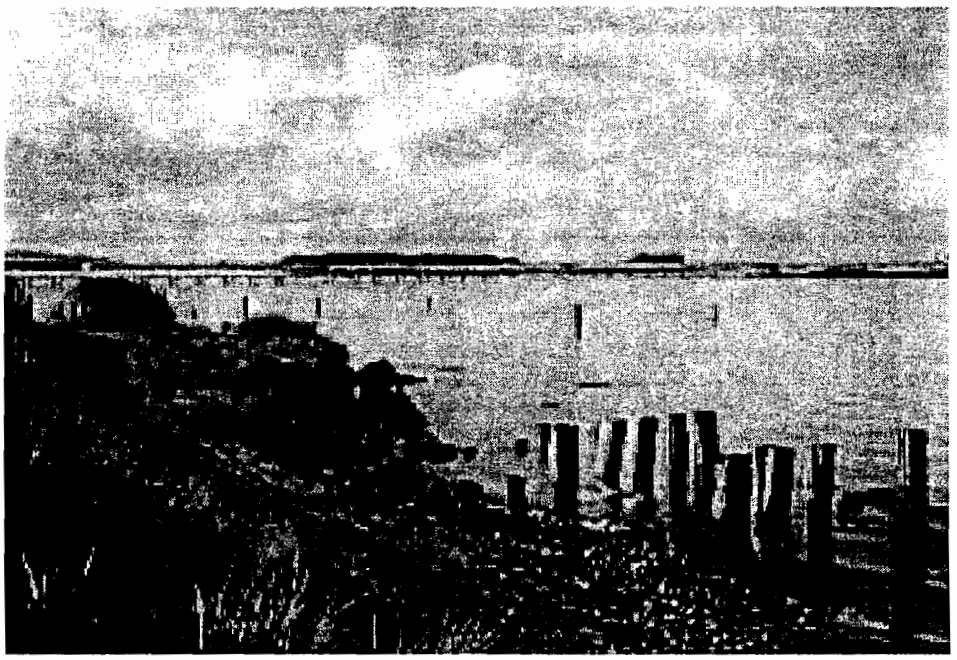
COASTAL EROSION EVALUATION MAP

SHN 002021
MAY, 2002
FIGURE 1

Appendix E

Elk River Access Project

Recommendations



Appendix E

INITIAL ASSESSMENT OF NATIVE PLANT RESTORATION OPPORTUNITIES

Exotic species invasions are recognized as one of the greatest threats to native plant communities. Though there are numerous exotic invasive plant species in (and north of) the ERWA, the Elk River Spit itself has recently been identified by Humboldt Bay National Wildlife Refuge staff as one of the most unique coastal dune systems in northern California. To reduce further spread of invasive species, and reduce the cost of doing so by combining project efforts, it is recommended that some native plant community rehabilitation be included in the proposed project.

Development of access facilities in the area presents an opportunity to remove exotic plants that are a threat to the ERWA and the greater Humboldt Bay area. When the landscape is disturbed to enhance public access, some restoration goals can be met as well. The areas surrounding the trailhead/parking areas will receive formal landscaping treatment, to be discussed later. Heavy equipment used during trail construction would be used to help facilitate exotic removal in heavily infested areas in conjunction with hand crews working in more sensitive sections of the project area.

Initial removal of invasive species will not be adequate to control these species. The following proposal first outlines removal options and recommendations for targeted species, then describes future opportunities for restoration and long term management for ecosystem health with public access. These recommendations are based on field observations and an informal plant survey, along with consultation with Humboldt Bay National Wildlife Refuge staff Andrea Pickart.

While this proposal is focused on initial restoration efforts during trail construction, it may also be appropriate to delay restoration until a comprehensive ERWA Management Plan can be competed. However, if funding can be secured to develop detailed restoration plans in conjunction with development of a management plan, it is recommended that restoration precede trail development in the project area.

Recommendation for Removal of Invasive Species

Due to their concentrated distribution and high abundance, three species have been identified from remotely sensed data and field site visits as a critical threat to ERWA's ecosystems (Calonje and Watson, 2001). European beachgrass, Chilean cordgrass and pampas grass completely dominate some parts of the landscape. High priority should be given to these species, but complete eradication is unlikely due to the advanced nature of the invasions and presence of seed banks in close proximity to the project area. Chilean cordgrass is mentioned here because it represents a serious threat to the ecosystem – however, successful removal methods are still unknown and attempted eradication of this plant is not recommended at this time. Other species of primary concern in the project area are fennel, scotch broom, yellow bush lupine, and Himalaya berry.

General Removal Methods

The first step of the removal process should include intensive flagging of natives in the area. This is absolutely necessary to protect current healthy populations of natives and determine where hand crews will need to be used. Rough estimates for potential area of heavy equipment use verses hand removal are given below.

Appendix E

The time of year invasive species removal is done can have an impact on the success of the initial removal and on resources necessary for future monitoring and management. The optimal time to complete the removal of exotics in the project area is in spring or early summer, before they set seed. If removal is completed during fall, it is critical that crews go out immediately the following spring to remove new plants. This type of follow-up should be done regardless of the time of initial removal, but it will likely require a greater commitment if plants are removed after seed dispersal for the season. For a brief overview of removal methods for priority species, see Appendix B.

Site-Specific Recommendations

The following proposal focuses on the area where new trail development will occur, where there has been heavy invasion by exotic species. Much of this area has also been moderately or heavily disturbed, thus creating a favorable environment for exotics. There are still small areas of relatively strong native populations that should be enhanced during this phase of the project. In addition, there are sections of the corridor that have been identified as potential sites for restoration of wetland, native dune and coastal prairie habitat.

- South of the pump station, there are some vestiges of sand dune habitat. European beachgrass and annual grasses are dominant, however. Grasses would be removed with heavy equipment and replaced with native grasses. Additionally, non-native Monterey pines along the western edge will soon die out. It is recommended that shore pines be planted inbetween existing trees to maintain shoreline protection value with native trees.
- Just north of the corner of Hilfiker Lane, there is a small wetland area surrounded by European beachgrass. There are also smaller invasions of pampas grass, Himalaya berry and Scotch broom. During equipment removal of the beachgrass, the wetland could be enhanced and expanded – existing native sedge and rush species would then be able to out-compete invasive species (Pickart, 2002).
- A significant patch of native dune grass (*Leymus mollis*) exists just upland from the abandoned fuel trestle close to Hilfiker Lane. Special care must be taken in the removal of unwanted species around valuable native plants that can gain a 'foothold' after invasives are gone. As mentioned previously, these sensitive areas must be flagged extensively prior to any removal effort in order to ensure conservation of native communities.
- Fennel and Himalaya berry, in heavy concentrations between Truesdale and Hilfiker, should be scraped by equipment or dug by hand. A stand of Scotch broom at the Pacific Bell site should be pulled, not cut.

Invasive Species Area Estimates for Elk River Trail Enhancement

Species	Est. Ft^2	Heavy Eqpmt	Hand Pull	Notes
Scotch broom (*Cytisus scoparius*)	3,050	3,050	0	May be new recruits needing treatment later
Pampas grass (*Cortaderia jubata*)	63,500	62,700	800	37,500 in lot east of Hilfiker - off trail corridor
Himalaya berry (*Rubus discolor*)	3,500	3,200	300	Patchy distribution
Chilean cordgrass (*Spartina densiflora*)	20,000	0	0	No removal recommended at this time
European beachgrass (*Ammophila arenaria*)	37,850	33,000	4,850	May require burning or burial
Yellow bush lupine (*Lupinus arboreus*)	700	600	100	Scattered distribution
Fennel (*Foeniculum vulgare*)	58,250	38,250	20,000	Large areas mixed with native willow
Invasive annual grasses	55,500	48,000	7,500	Number of species unknown

Note: Project is some time away from completion - estimates are rough and will continue to change.
Areas of pampas grass, himalaya berry and fennel overlap

Appendix E

Long-Term Management

Control of invasive species at ERWA will be an ongoing management concern. The reinvasion and introduction of new invasive species will continue. Disturbance created with trail construction will only increase the area's susceptibility to exotic invasion. The Society for Ecological Restoration (SER) has created a policy for restoration plans, which calls for a minimum of seven elements. Future plans for management of vegetation in the area, whether at the time of trail construction or further into the future, should consider including at least these elements:

- A baseline ecological description of the ecosystem designated for restoration;
- An evaluation of how restoration will integrate with components of the regional landscape;
- Explicit plans and schedules for on all on site preparation and implementation;
- Clearly stated performance standards by which the project can be evaluated objectively;
- Monitoring protocols by which performance standards can be measured;
- Provision for procurement of native planting stock; and
- Procedures for remedial activity.

For examples of appropriate restoration plan formats, see Chapter 3 of *Ecology and Restoration of Northern California Dunes.*

The future of native plant enhancement in the Elk River will depend on development of a comprehensive management strategy for the larger area - not simply the length of the proposed trail development. Invasive species are abundant on lands adjacent to the project area, including the Elk River Spit. The Elk River estuary area, if restored and enhanced, could provide habitat for many rare north coast plants. Optimally, a survey should be performed this spring to check for populations of sensitive species, including Humboldt Bay owl's clover (*Castilleja ambigua* ssp. *humboldtiensis*) – seen last spring northwest of the Hilfiker Trailhead parking area – and Point Reyes bird's beak (*Cordylanthus maritimus* ssp *palustris*). In addition, a particularly dense population of the endangered Humboldt Bay wallflower (*Erysimum menziesii* spp. *eurekense*) is located on the Elk River spit.

Designs needed to complete restoration project will be beyond the scope and planning funds currently available. Pacific Coast Joint Venture is interested in assisting with finding planning and implementation funds. And, though it will add some effort to the planning and permitting process, restoration will be a benefit to the trail project during the permitting phase to offer some level of mitigation for proposed access improvements.

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Appendix E

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Pickart, A.J. and J.O. Sawyer. 1998. *Ecology and Restoration of Northern California Coastal Dunes.* Sacramento, CA: California Native Plant Society.

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Pickart, A.J. & Eicher, A. 2000. *Invasive Weeds of Humboldt County: a Guide for Concerned Citizens.* [on line] http://www.northcoast.com/~cnps/iwhc/

Weed Research & Information Center. 2001. [on line] http://wric.ucdavis.edu/

Appendix F

Elk River Access Project

Recommendations

Appendix F
ELK RIVER WILDLIFE AREA PLANTS

ERWA Exotic Invasive Plants

Not a comprehensive list – further research should be completed

Chilean cordgrass - *Spartina densiflora*
European beachgrass - *Ammophila arenaria*
Fennel - *Foeniculum vulgare*
Gorse – *Ulex europaea*
Himalaya berry - *Rubus discolor*
Iceplant - *Carpobrutus edulis*
Scotch broom - *Cytisus scoparius*
Pampas grass - *Cortaderia jubata*
Yellow bush lupine - *Lupinus arboreus*
Teasel - *Dipsacus fullonum*
Poison hemlock – *Conium maculatum*
Cotoneaster – *Cotoneaster franchetii*
Birdsfoot trefoil - *Lotus corniculatus*
Quaking grass - *Briza maxima*
Beardgrass – *Polypogon monspeliensis*
Yellow star thistle – *Centaurea solstitaialis*
Velvet grass – *Holcus lanatus*
Monterey pine – *Pinus radiata*

Note: Informal plant surveys were completed in the fall and winter months. There are likely many other annual grasses and herbaceous flowering exotics that were not detected due to the season.

ERWA Native Plants

Not a comprehensive list – further research should be completed

Spit and areas with moving sand or sandy substrate:
Beach sagewort *(Artemisia pycnocephala)*.
Beach blue grass (*Poa douglasii* or *P. macrantha*)
Beach morning glory *(Calystefia soldanella)*
Beach bursage *(Ambrosia chamissonis)*
Beach buckwheat (*Eriogonum latifolium)*
Yellow sand verbena *(Abronia latifolia)*
Beach strawberry *(Fragaria chiloensis)*
Dune goldenrod *(Solidago spathulata)*
Beach pea (*Lathyrus littoralis*)
Beach evening primrose *(Camissonia cheiranthifolia)*
Sea thrift (*Armeria maritima*)
Miniature lupine *(Lupinus bicolor)*
Dune knotweed *(Polygonujm paronychia)*.
Dune goldenrod *(Solidago spathulata ssp. spathulata)*
Beach strawberry (*Fragaria chiloensis*)

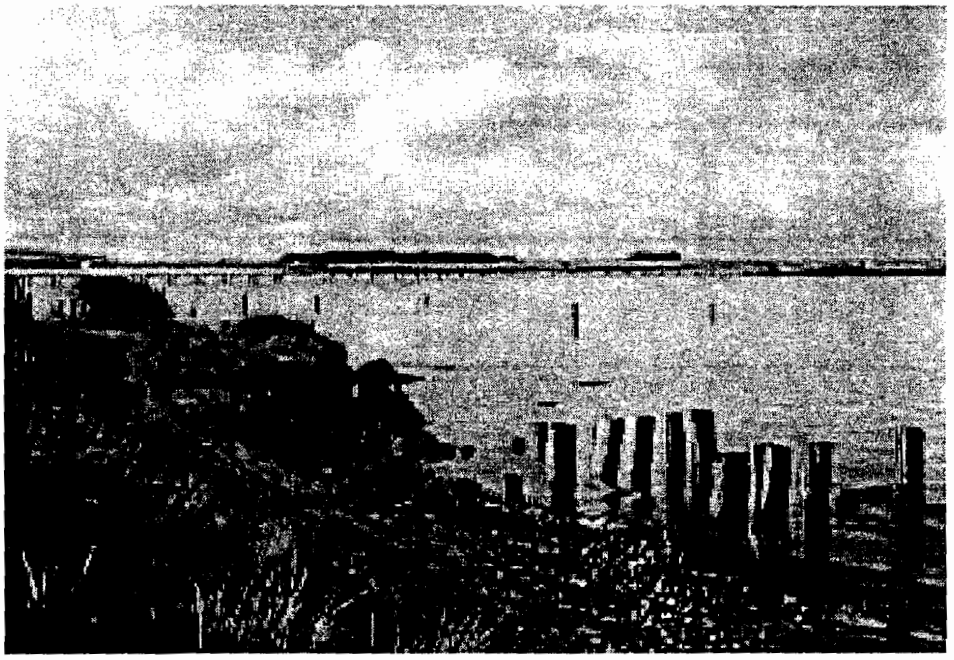
Wetland and upland areas:
Red alder (*Alnus rubra)*
Wax myrtle (*Myrica californica*)
Dune willow (*Salix piperi)*
Arroyo willow (*Salix lasiolepis*) – in sourthern portion
Pacific willow (*Salix lasiandra*)
Willow (*Salix* spp.)
California blackberry (*Rubus ursinus*)
Slough sedge (*Carex obnupta*)
Cattail (*Typha latifolia)*
Salt rush (*Juncus leseurii*)
Shore or beach pine (*Pinus contorta* ssp. *contorta*)
Seaside daisy (*Erigeron glaucus*)
Pacific silverweed (*Potentilla anserina ssp. pacifica*)
Common rush *(juncus effusus)*
Seashore bluegrass (*Poa douglasii*)
Salt grass *(Distichlis spicata)*
Pickleweed *(Salicornia virginica)*
Humboldt Bay owl's clover *(Castilleja ambigua* var. *humboldtiensi)*
Point Reyes bird's beak (*Cordylanthus maritimus* ssp. *palusris*)
Purple owl's clover (*Catilleja exserta* ssp. *latifolia*)
Humboldt gumplant (*Grindelia stricta* ssp *blakei*)

Less common species include:
Seashore lupine (*Lupinus littoralis*)
Dune gilia *(Gilia millefoliata)*
Sand mat *(Cardionema ramosissima)*
Humboldt Bay wallflower (*Erysimum menziesii* ssp. *eurekense*)
Beach layia (*Layia carnosa*)
Native dune grass (*Leymus mollis*)
Eel grass (*Zostera marina*)

Appendix G

Elk River Access Project

Recommendations



Appendix G
ELK RIVER WILDLIFE AREA POTENTIAL LANDSCAPING PLANTS

Recommended Native Species for Landscaping

Some species not native to project site – but are native to California.

Plant Species and Common Name	Habit	Notes/Requirements
Trees		
Shore/Beach Pine – *Pinus contorta ssp. Contorta*	2-34 m, small evergreen with spreading crown	Very adaptable
Wax Myrtle – *Myrica californica*	2-10 m, evergreen shrub or small tree.	Sun or part shade, well drained soil
Dune Willow - (*Salix piperi)*	1-10 m, many trunked to tree-like, deciduous.	Do well in wet sites – but can tolerate summer drought. Good for wildlife
Pacific willow (*Salix lasiandra*)	1-10 m, many trunked to tree-like, deciduous.	"
Shrubs		
Silk Tassle - *Garrya elliptica*	< 8 m, evergreen shrub or small tree.	Very tolerant of coastal conditions
Blue Blossom - *Ceanothus* thyrsiflorus	< 6 m, evergreen shrub	Well drained soil, full sun
Western Azalea – *Rhododendron occidentale*	< 5 m, deciduous shrub	Moist site, light shade. May do poorly right next to coastline
Red Flowering Current - *Ribes sanguineum*	< 2 m, leaves generally deciduous	May have difficulty close to coastline
Small Flowering Plants		
Beach buckwheat - *Eriogonum latifolium*	10-70 cm, small bush.	Excellent for coastal areas, hardy, long lived, can act as ground cover
Ground Covers		
Beach/Wild Strawberry – *Fragaria chiloensis*	5-20 cm, leaves basal	Full sun - part shade
Bearberry – *Arctostaphylos uva-ursi*	<.5 m, ground-hugging evergreen.	Full sun, well drained site
Yerba Buena - *Satureja douglasii*	Short stems	Good groud cover for areas with more trees
Grasses		
California Bent Grass - *Agrostis densiflora*		
Coastline bluegrass - *Poa confinis*		
Douglas Blue grass - *Poa douglasii*		
Dune grass - *Leymus mollis*		

Appendix H

Elk River Access Project

Recommendations

APPENDIX H

STATE OF CALIFORNIA – THE RESOURCES AGENCY

CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE AND TDD (415) 904-5200
FAX (415) 904-5400

RECEIVED JUN 27 2002

GRAY DAVIS, GOVERNOR

Memorandum

June 24, 2002

To: Tiffany Tauber, CCC-North Coast

From: Darryl Rance, GIS/Mapping Program

Cc: Bob Merrill, CCC-North Coast

Subject: Coastal Zone Boundary Determination No. 30-2002, Elk River Access Project, City of Eureka, Humboldt County.

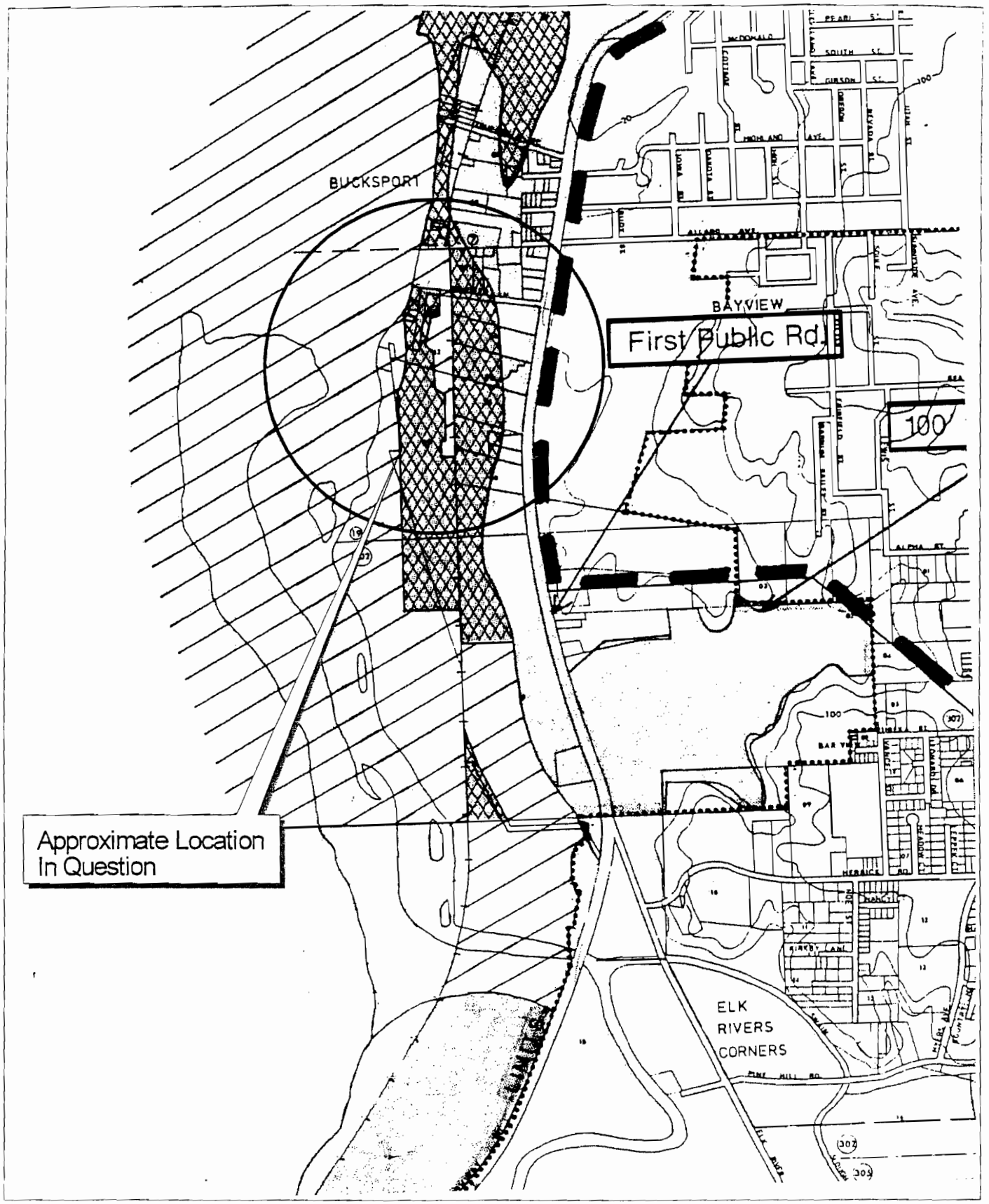
You have requested that we provide you with a Coastal Zone Boundary Determination for the Elk River Access project in the City of Eureka. Enclosed is a copy of a portion of the adopted post-LCP Permit and Appeal Jurisdiction Map with the approximate location of the Elk River Access project indicated. See Exhibit 1. Also included is a project area exhibit that depicts the Elk River Access project with the Coastal Commission and City of Eureka permit jurisdiction identified. See Exhibit 2.

Based on the information provided and available in our office, the Elk River Access project is located entirely within the Coastal Zone and appears to be bisected by the Coastal Commission permit jurisdiction boundary in the manner indicated on Exhibit No. 2. Any development that is proposed within the Coastal Commission's permit jurisdiction would require coastal development permit authorization from the Commission. The Coastal Commission's permit jurisdiction is based on the existence of tidelands, submerged lands and public trust lands. The information available indicates that the area in question appears to be located, in part, on tidelands, submerged lands and land that may be subject to the public trust. Based on this information the Coastal Commission is asserting jurisdiction that portion of the Elk River Access project as shown on Exhibit 2.

Development activities that are located within the City of Eureka's permit jurisdiction would require coastal development permit authorization from the City. Any decision by the City to approve a coastal development permit within the Elk River Access project area, as shown on Exhibit 2, could be appealed to the Coastal Commission.

Please contact me at (415) 904-5335 if you have any questions regarding this determination.

Enclosures



BD No. 30-2002
Elk River Access Project
City of Eureka
Humboldt County

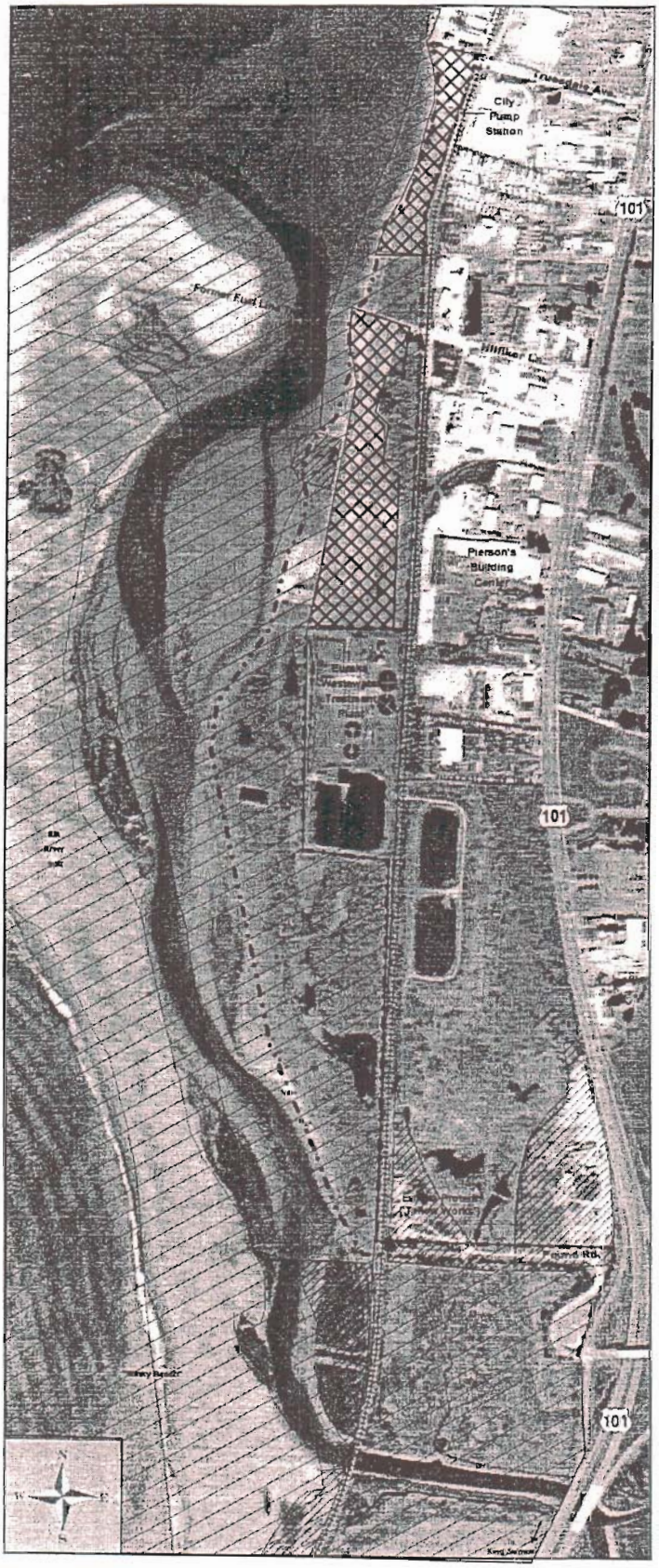
Portion of Post-LCP
Certification Permit and Appeal
Jurisdiction Map, City of Eureka

N

California Coastal Commission
Technical Services Unit

Exhibit 1

DAR.06/2002



Proposed Project Area
Elk River Access Project
CITY OF EUREKA
by Natural Resources Services, RCAA, 2002 - Photo date, March, 2000

- Project Area
- Approximate City Ownership
- Approximate Private Ownership
- NWP Railroad

Approximate Scale
1" = 600 feet

4/12/02

BD No. 30-2002
Elk River Access Project
City of Eureka, Humboldt County

Coastal Commission Permit Jurisdiction

City of Eureka Permit Jurisdiction
Coastal Commission Appeal Jurisdiction

California Coastal Commission
Technical Services Unit

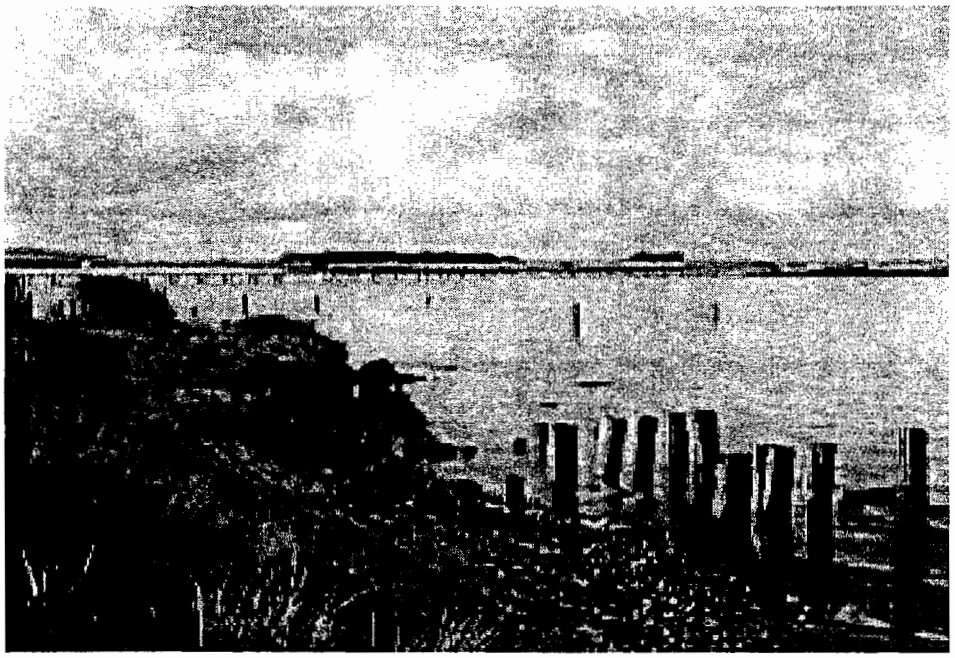
Exhibit 2

DAR.06/2002

Appendix I

Elk River Access Project

Recommendations



Appendix I

Preliminary Cost Estimate

Elk RiverAccess Project

Truesdale Vista Point to Hilfiker Lane Trailhead Multi-Use Trail

10' width surface, 2,625' length, avg. 6" base and 6" crushed shale surface, underlain by geotextile. Includes site prep.

ITEM		Qty/Unit	Unit Cost		Item Cost
Labor:					
Management & Coordination		560		$	21,800.00
Labor		580		$	11,600.00
	Subtotal	**1140**		**$**	**33,400.00**
Equipment:					
Trucking		140	$140	$	19,600.00
Backhoe with box scraper and/or grader		120	$80	$	9,600.00
Water truck		40	$80	$	3,200.00
Roller		80	$70	$	5,600.00
Rental equipment				$	3,000.00
	Subtotal	**380**		**$**	**41,000.00**
Materials:					
Base rock		680	$14	$	9,180.00
Crushed shale		583	$14	$	8,160.00
Geotextile Fabric	rolls	8	$300	$	2,400.00
A C paving for Truesdale VP trail segment	s.f.	3,800	$1.80	$	6,840.00
misc.: materials/small purchases				$	5,000.00
	Subtotal			**$**	**31,580.00**
Travel (vehicle use/day)		90	$65	**$**	**5,850.00**
Tool Use Fees:		200	$40	**$**	**8,000.00**
	Grand Subtotal			**$**	**119,830.00**
Bond Fees, performance and Completion 1.5%				$	1,800.00
Overhead 15%				$	18,000.00
Contingency 20%				$	23,970.00
	Grand Total*			**$**	**163,600.00**

* Does not include costs for final plans and specifications, permitting, engineering, costs of putting the job out to bid

Appendix I

Preliminary Cost Estimate

Elk River Access Project

Rehabilitation of Existing Elk River Wildlife Area Trail

10' width, 3890' length, average 6" (compacted) crushed shale surface. Includes site prep.

ITEM		Qty/Unit	Unit Cost		Item Cost
Labor:					
Management & Coordination		316		$	12,840.00
Labor		460		$	9,200.00
	Subtotal	**776**		**$**	**22,040.00**
Equipment:					
Trucking		80	$140	$	11,200.00
Backhoe with box scraper and/or grader		80	$80	$	6,400.00
Water truck		32	$80	$	2,560.00
Roller		64	$70	$	4,480.00
	Subtotal	**256**		**$**	**24,640.00**
Materials:					
Rock		720	$14	$	10,080.00
bollards		2	$500	$	1,000.00
Interpretive kiosks		1	$5,000	$	5,000.00
Other signs		6	$800	$	4,800.00
Landscaping				$	1,000.00
Materials/small purchases				$	3,500.00
	Subtotal			**$**	**25,380.00**
Travel (vehicle use/day)		16	$65	**$**	**1,040.00**
Tool Use Fees		35	$40	**$**	**1,400.00**
	Grand Subtotal			**$**	**74,500.00**
Bond Fees, performance and Completion 1.5%				$	1,120.00
Overhead 15%				$	11,200.00
Contingency 20%				$	14,900.00
	Grand Total*			**$**	**101,720.00**

* Does not include costs for final plans and specifications, permitting, engineering, costs of putting the job out to bid

Appendix I

Preliminary Cost Estimate

Elk River Access Project

Improvement of Existing Elk River Wildlife Area Riverside Footpath

4' width, 1,090' length, average 6" crushed shale surface

ITEM		Qty/Unit	Unit Cost		Item Cost
Labor:					
Management & Coordination		164		$	6,160.00
Construction Labor		500	$20	$	10,000.00
	Subtotal	**664**		**$**	**16,160.00**
Equipment:					
Trucking		21	$140	$	2,940.00
Bobcat		32	$50	$	1,600.00
Vibraplate Tamper (per week)		2	$250	$	500.00
Misc. equipment				$	1,000.00
	Subtotal	**55**		**$**	**6,040.00**
Materials:					
Rock		250	$12	$	3,000.00
Filter Fabric		2	$300	$	600.00
Landscaping				$	250.00
Materials				$	1,500.00
	Subtotal			**$**	**5,350.00**
Travel (vehicle use/day)		14	$65	**$**	**910.00**
Tool Use Fees:		50	$40	**$**	**2,000.00**
	Grand Subtotal			**$**	**30,460.00**
Bond Fees, performance and Completion 1.5%				$	460.00
Overhead 15%				$	4,570.00
Contingency 20%				$	6,090.00
	Grand Total*			**$**	**41,580.00**

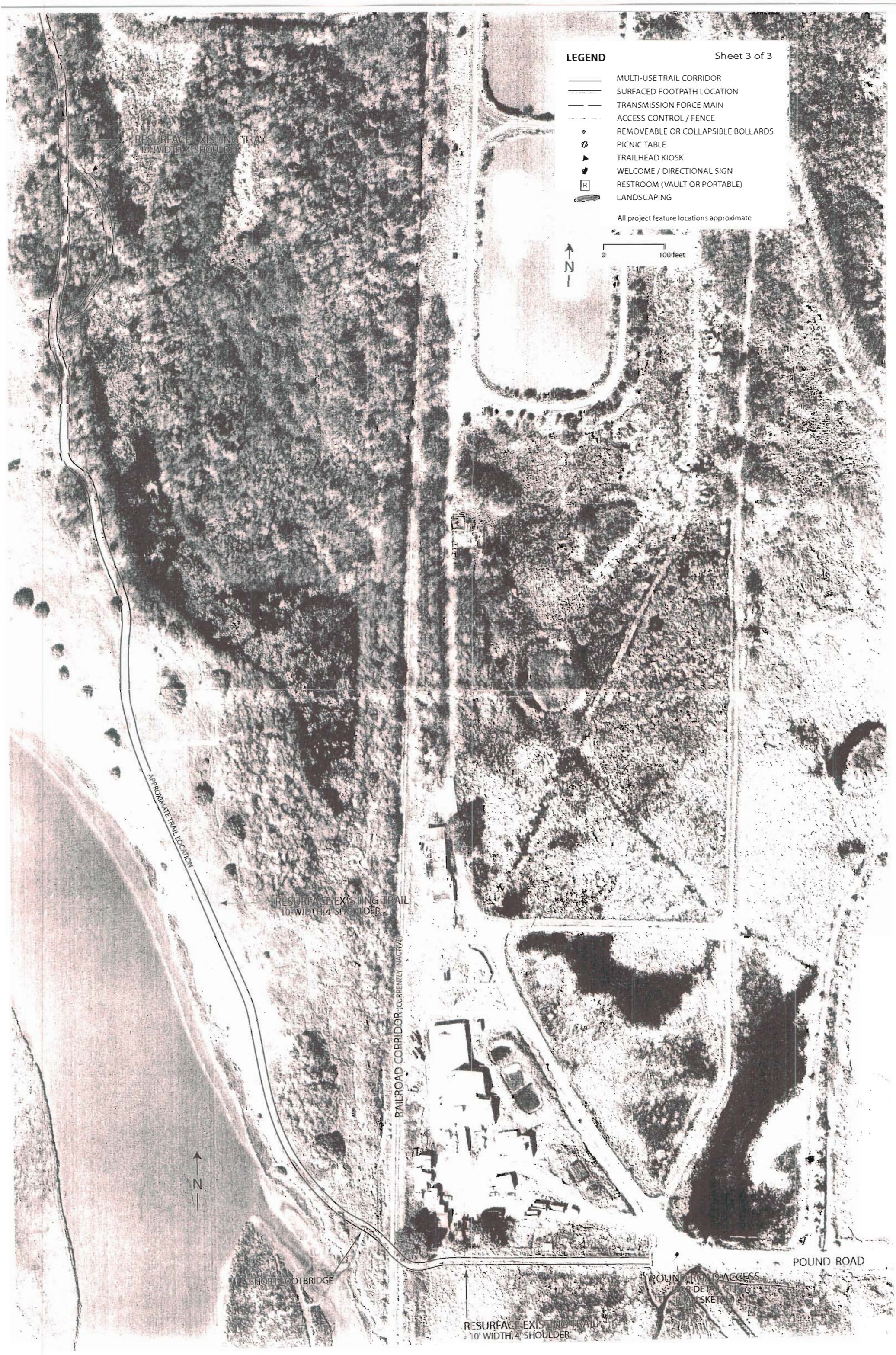
*Does not include costs for final plans and specifications, permitting, engineering, costs of putting the job out to bid

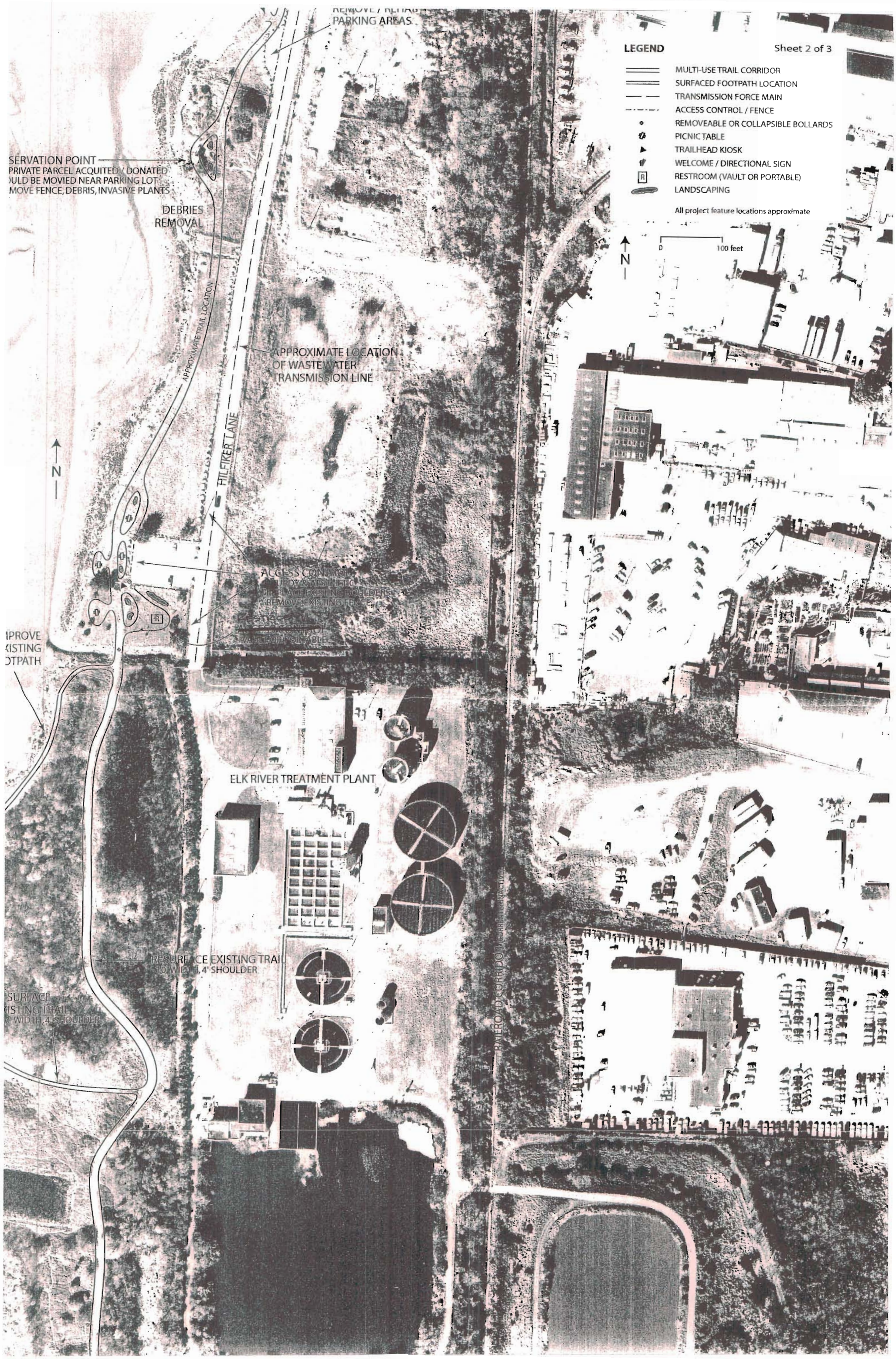
Preliminary Cost Estimate

Elk River Access Project
Day-Use Facilities and Trail Support Amenities

ITEM	Qty/Unit	Unit Cost	Item Cost
Facilities			
Truesdale Vista Point (see text description)			$ 278,900.00
Hilfiker Paddling Access Parking Area			$ 28,000.00
Pound Road			$ 32,000.00
Earthen observation points	2	7000	$ 14,000.00
Subtotal			**$ 352,900.00**
Amenities (other than Truesdale VP)			
Bollards	6	$500	$ 3,000.00
Picnic Tables	5	$1,200	$ 6,000.00
Benches	6	$800	$ 6,400.00
Trash/dog waste receptacles	3	$600	$ 1,800.00
Fencing and access control			**$ 50,000.00**
Interpretive kiosks	2	$12,000	$ 24,000.00
Other interpretive signs	10	$5,000	$ 50,000.00
Welcome/site signs	3	$4,000	$ 12,000.00
Subtotal			**$ 153,200.00**
Other Project Elements			
Storage yard/Crowley clean up			$ 6,000.00
Amidi site clean up			$ 12,000.00
Landscaping & Public Art			$ 40,000.00
RSP repair (foot of Truesdale)			$ 20,000.00
Utility undergrounding (Truesdale VP)			$ 35,000.00
Boulder removal (along Hilfiker)			$ 5,000.00
Subtotal			**$ 118,000.00**
Grand Subtotal			**$ 624,100.00**
Bond Fees, performance and Completion 1.5%			$ 9,400.00
Overhead 15% (amenities and other project elements)			$ 93,600.00
Contingency 20% (amenities and other project elements)			$ 124,800.00
Grand Total*			$ 851,900.00

* Does not include costs for final plans and specifications, permitting, engineering, costs of putting the job out to


LEGEND
Sheet 3 of 3
MULTI-USE TRAIL CORRIDOR
SURFACED FOOTPATH LOCATION
TRANSMISSION FORCE MAIN
ACCESS CONTROL / FENCE
REMOVEABLE OR COLLAPSIBLE BOLLARDS
PICNIC TABLE
TRAILHEAD KIOSK
WELCOME / DIRECTIONAL SIGN
R
RESTROOM (VAULT OR PORTABLE)
LANDSCAPING
All project feature locations approximate
N
0
100 feet
RESURFACE EXISTING TRAIL
10' WIDTH, 4' SHOULDER
APPROXIMATE TRAIL LOCATION
RESURFACE EXISTING TRAIL
10' WIDTH, 4' SHOULDER
RAILROAD CORRIDOR (CURRENTLY INACTIVE)
N
SHORT FOOTBRIDGE
POUND ROAD
POUND ROAD ACCESS
RESURFACE EXISTING TRAIL
10' WIDTH, 4' SHOULDER


LEGEND
Sheet 2 of 3
MULTI-USE TRAIL CORRIDOR
SURFACED FOOTPATH LOCATION
TRANSMISSION FORCE MAIN
ACCESS CONTROL / FENCE
REMOVEABLE OR COLLAPSIBLE BOLLARDS
PICNIC TABLE
TRAILHEAD KIOSK
WELCOME / DIRECTIONAL SIGN
RESTROOM (VAULT OR PORTABLE)
LANDSCAPING
All project feature locations approximate
0
100 feet
N
PARKING AREAS
SERVATION POINT
PRIVATE PARCEL ACQUITED / DONATED
ULD BE MOVIED NEAR PARKING LOT
MOVE FENCE, DEBRIS, INVASIVE PLANTS
DEBRIES REMOVAL
APPROXIMATE TRAIL LOCATION
APPROXIMATE LOCATION OF WASTEWATER TRANSMISSION LINE
HILLTOP LANE
ACCESS CONTROL
IPROVE
XISTING
OTPATH
ELK RIVER TREATMENT PLANT
RESURFACE EXISTING TRAIL
10' WIDTH, 4' SHOULDER
SURFACE
XISTING TRAIL
0' WIDTH, 4' SHOULDER
RAILROAD CORRIDOR

LEGEND
Sheet 1 of 3
MULTI-USE TRAIL CORRIDOR
SURFACED FOOTPATH LOCATION
TRANSMISSION FORCE MAIN
ACCESS CONTROL / FENCE
REMOVEABLE OR COLLAPSIBLE BOLLARDS
PICNIC TABLE
TRAILHEAD KIOSK
WELCOME / DIRECTIONAL SIGN
RESTROOM (VAULT OR PORTABLE)
LANDSCAPING
All project feature locations approximate
0
100 feet
N
RSP REINFORCEMENT
TRUESDALE AVENUE
TRUESDALE VISTA POINT (FOR DETAIL SEE PLAN SKETCH)
POTENTIAL RSP TRANSITION TO COBBLE/GRAVEL
RAILROAD CORRIDOR (CURRENTLY INACTIVE)
APPROXIMATE LOCATION OF WASTEWATER TRANSMISSION LINE
PUMP STATION
DEBRIS REMOVAL
APPROXIMATE TRAIL LOCATION
BEACH ACCESS
REMOVE DETERIORATED FENCING
RAISED OBSERVATION POINT
- EARTHEN
- INTERPRETIVE SIGNAGE
- POTENTIAL DEBRIS REMOVAL
WETLAND (APPROX)
PADDLE BOATS
- ACCESS BEACH
- NO IMPROVEMENTS
HILFIKER LANE
APPROXIMATE LOCATION OF WASTEWATER TRANSMISSION LINE
PERIODIC BEACH ACCESS ROUTES
REMOVE / REHAB PARKING AREAS