

Table of Contents

1	Introduction.....	1
1.1	Purpose of Report	1
1.2	Overview of Proposed Project	1
1.3	Preliminary Management Goals	2
1.4	Next Steps	3
2	Background	4
2.1	Project History	4
2.2	Concept of a Community Forest	7
2.3	Public Input.....	8
2.4	Expected Benefits	10
2.5	Issues and Concerns.....	11
2.6	Alternatives.....	13
2.7	Potential Connector Road	13
3	Property Information	15
3.1	Overview.....	15
3.2	Land Use Planning and Regulations	17
3.3	Roads	20
4	Forestry	24
4.1	Overview of Ryan Creek Watershed	24
4.2	Timber Management.....	24
5	Recreation.....	32
5.1	Recreational Activities.....	32
5.2	Considerations for Potential Access Points	32
5.3	Trails	34
5.4	Summary	34
6	Staffing and Volunteers	35
7	Finances	37
7.1	Overview.....	37
7.2	Revenues.....	37
7.3	Costs	38
7.4	Summary of 50-Year Financial Projections.....	39
7.5	Conclusions.....	40
8	List of Preparers and Contributors.....	41
9	References.....	42

Maps

- Overview Map
- Regional Map
- Watershed Map
- Detail Maps (North and South)
 - Aerial Imagery
 - Topography and Roads
 - Waterways
 - Timber Operating Units
 - Timber Stand Ages
 - Timber Stand Volume
- Geographic Sub-Areas
- Potential Connector Road Alignment (Walnut Drive to Harris Street)
- Fire Hazard Severity Zones
- SRA/Fire District Boundaries

Appendices (Available at <http://www.co.humboldt.ca.us/pubworks/mckayforest/>)

- Cash Flow Analysis of Timber Management (BBW & Associates, 2013)
- Historic Profile of the McKay Tract: Logging, Ranching, and Railroads (Rohde, 2014)
- Logging Road Assessment Report (PWA, 2013)
- Preliminary Transportation Analysis of McKay Tract/Cutten Area (LACO Associates, 2013)
- Memorandum of Understanding between County of Humboldt and City of Eureka for Collaborative Planning and Management of the Proposed McKay Tract Community Forest (2013)
- Summary of Public Meeting Comments (April 30, 2013 and September 11, 2013) and Open Humboldt Entries (Compiled March 26, 2014)

1 INTRODUCTION

1.1 Purpose of Report

The purpose of this Project Report is to provide information to support the decision by the Humboldt County Board of Supervisors whether to accept 1,000 acres of forestland within the McKay Tract (the Phase 1 property) located southeast of the City of Eureka to own and manage as a community forest. The area under consideration for a community forest is generally located south of Myrtle town and Redwood Acres, east of Cutten and Ridgewood Heights, and west of the main stem of Ryan Creek. In addition, a strip of land extends from Myrtle Avenue to Park Street.

1.2 Overview of Proposed Project

Green Diamond Resource Company has been working with The Trust for Public Land to develop a conservation strategy for the McKay Tract which includes a proposal to sell a portion of the land holdings to establish a community forest with public access. Humboldt County and the City of Eureka are coordinating for the proposed community forest as a cooperative, multi-jurisdictional initiative due to the size and complexity of the project and because residents of the greater Eureka area are expected to benefit. The community forest would be managed for multiple purposes including public access and recreation, timber harvest, and watershed and resource conservation.

The McKay Tract contains 7,600 acres of forestland within the 9,400-acre Ryan Creek watershed which drains to Humboldt Bay. The watershed is highly productive for timber, primarily coastal redwood and Douglas-fir, and provides high-quality habitat for fish and wildlife including the federally- and state listed coho salmon and northern spotted owl. Two parcels (totaling 124 acres) within the Phase 1 property are zoned for residential development but would be retained as forestland if the community forest is established. This reduction in land inventory would not impact the County's ability to meet its housing goals because there is a surplus inventory of this housing type available to meet the projected housing need in the current Housing Element.

A total of \$6,785,000 is available through three state and federal funding programs to acquire the Phase 1 property. County funds would not be used to acquire the property, but Humboldt County would be responsible for the costs of managing and maintaining the property. The community forest would be managed by Public Works in conjunction with the County Parks and Trails system, which currently totals nearly 950 acres across 17 park units. The Trust for Public Land has pledged to provide \$125,000 to the County to assist with start-up costs.

Continuation of a working forest is essential to financial viability, with revenue generated through timber harvest used to offset the costs of management and maintenance. The proposed community forest would depend on active public involvement in a variety of forms including donations and fund-raising, trail building and maintenance, trail clean-up, volunteer patrols, restoration activities, advisory support, and educational programs. Timber harvest revenues would likely need to be re-invested into the property for 20 to 30 years to provide for development of trails and access points and upgrades of logging roads. Grants and donations would provide additional financial assistance. Projections for revenues and costs have been developed based on the assumption of no new encumbrance to the County General Fund. A loan would be needed to accommodate cash-flow during the start-up period.

Public access points and trails would be developed incrementally in a logical sequence over the course of several years. The timeframe would depend on fundraising and grant opportunities, volunteer interest, and working through the appropriate planning processes. The best short-term opportunities for access points are Redwood Acres Fairgrounds and Redwood Fields. Key issues for access points and trails include: future development of the McKay Ranch subdivision; routing a trail around the private in-holding residential property; and planning for a future connector road between Walnut Drive and Harris Street.

1.3 Preliminary Management Goals

Preliminary management goals are proposed to express the overarching vision for the community forest and set the course for future management. Goals were developed based on public input received during the planning process; the statements of purpose contained in the three land acquisition grant agreements; and Forest Stewardship Council Principles and Criteria. These preliminary goal statements provide a starting point for discussion and would be refined based on direction from the Board of Supervisors and Eureka City Council and additional public input.

Preliminary management goals for the proposed community forest include the following:

Goal 1: Forest Stewardship

Practice environmentally appropriate, socially beneficial, economically viable forest management.

Goal 2: Environmental Values

Conserve and enhance the environmental values of the forest to maintain its biodiversity, productivity, and ecological processes.

Goal 3: Working Forest

Maintain a working forest that supports timber-related jobs and economic productivity on a sustainable basis.

Goal 4: Public Access and Recreation

Provide high-quality recreational opportunities to support active living and enhance quality of life.

Goal 5: Community involvement

Encourage robust public involvement to ensure that the community forest meets the community's desires and interests and is valued as a community asset.

Goal 6: Public Safety

Manage the community forest to promote a safe and secure environment for families and visitors of all ages.

Goal 7: Education

Contribute to an awareness of modern forest management practices and create opportunities for outdoor educational activities.

1.4 Next Steps

If the Board of Supervisors decides to accept the Phase 1 property to become a publicly owned community forest, the final funding decision by the California Wildlife Conservation Board would occur on May 22, 2014. Closure of escrow and title transfer would likely occur in June 2014. The property would not be open to the public until appropriate access points and trail segments are developed. Opening for partial access could potentially occur later in the summer of 2014.

Key next steps would include the following:

Charter

The preliminary management goals would be presented to the public for review and input. Following this review process, the Board would incorporate the selected goals into a resolution that would become the charter, or foundational document, for the community forest. The resolution would also address priorities for use of future surplus revenues from timber harvest.

Community Forest Advisory Committee

An advisory committee would be formed to provide guidance and assistance on planning efforts.

Permanent Name

A permanent name for the community forest would be established. Candidates include: McKay Community Forest; Ryan Creek Community Forest; Humboldt Community Forest; or Eureka Community Forest.

Volunteers and Fundraising

Public Works would coordinate with the Volunteer Trail Stewards to organize volunteer efforts. Options would be evaluated for creating a new non-profit organization (e.g., "Friends of McKay Community Forest") or linking with an existing organization, and for organizing a fund to accept donations.

County-City Collaboration

Roles and responsibilities and opportunities for collaboration between the County and City of Eureka would continue to be evaluated. A formal agreement would be developed for future consideration by the Board of Supervisors and City Council.

Management Plan

A management plan would be developed to provide the overall framework for achieving the management goals and to address facilities such as access points, roads, trails, and other amenities. This Project Report would provide the foundation for the management plan.

Grants

Grant opportunities would be pursued to assist with preparing the management plan, developing access points and trails, and upgrading roads.

Administrative

Public Works would work with the County Administrative Office to evaluate financing options (internal or external loan) and incorporate the community forest into the FY 2014-15 budget. Public Works would address staffing needs. A new ordinance governing allowable use within the community forest would need to be developed in conjunction with the management plan.

2 BACKGROUND

2.1 Project History

Initiation

Green Diamond began working with The Trust for Public Land (TPL) in 2009 to develop a long-term conservation strategy for the McKay Tract. Formal announcement of this partnership was issued on December 15, 2010.

Green Diamond is a privately-owned timber company based in Washington that owns and manages nearly 400,000 acres of timberland in northern California, primarily in Humboldt and Del Norte Counties (Green Diamond, 2012). Green Diamond has identified several factors for its decision to consider selling a portion of its land within the McKay Tract for a community forest, including: management challenges at the urban interface; continuing to actively manage the balance of the McKay Tract; infrastructure constraints for developing forestland within the McKay Tract; near-term opportunities for acquisition funding; and recognition of the public benefits of a community forest.

TPL is a national, non-profit, land conservation organization with the goal of protecting land in and around cities for public use and enjoyment. TPL's expertise includes facilitating large-scale conservation projects and negotiating land sales and easements for conservation and habitat preservation. TPL has assisted with appraisals and land evaluations and has led efforts to obtain funding for land acquisition from state and federal funding programs.

Concurrent with the discussions that began in 2009 between Green Diamond and TPL, an informal Humboldt Bay Regional Community Forest Work Group was formed with representatives from local community organizations and government agencies to pursue the goal of creating new community forest units around the Humboldt Bay area modeled on the City of Arcata's community forest. The Board of Supervisors heard a report from representatives of this work group on September 7, 2010, and authorized a support letter for an application for grant funds to assess the feasibility of developing and managing a Humboldt Bay Region Community Forest. This group became inactive after the McKay Tract opportunity was announced and a new team was created to assist in evaluating the feasibility of the proposed McKay Tract project.

An additional component of the conservation strategy for the McKay Tract includes placement of a conservation easement over the remainder of Green Diamond's land holdings to the east and south of the proposed community forest. The land subject to conservation easement would continue to be owned by Green Diamond and managed for timber production, but the development rights would be extinguished, thus preventing future conversion to non-timber use. TPL is working to secure funding for the conservation easement through the federal Forest Legacy Program with a target completion date of 2015. The easement would be held and administered by the California Department of Forestry and Fire Protection.

Boundary Selection

The proposed property boundaries and acreages for the proposed community forest in the McKay Tract were developed by Green Diamond and TPL based on a variety of factors and have been adjusted through several iterations. The overall approach was intended to create a community forest for public access, establish a logical buffer between residential communities and Green Diamond's remaining lands, and maintain a limited amount of land available for future development. Initial proposed boundaries were developed based on projections of potentially available funding and land appraisal values and taking into account Green Diamond's designation

of operating units. The configuration of the Phase 1 property was developed with the intent of creating viable management units for timber production. Property boundaries were developed primarily by following existing hydrologic features, major ridgelines, and roads and therefore do not coincide with the existing configurations of legal parcels or Assessor parcels. At the southern end, preference was given to the operating units situated adjacent to Ryan Creek; as a result, the Phase 1 property is offset from the Ridgewood Heights area.

As the community forest proposal was being developed, Green Diamond executed two property transactions for portions of the McKay Tract near the urban interface. In June 2013, Hospice of Humboldt purchased approximately 10.6 acres for a new end-of-life care facility. The Hospice property is accessed from Timber Falls Court which connects to Harris Street. In 2013, the Humboldt Community Services District purchased 22.5 acres of forestland surrounding their facility on Walnut Drive to address future needs.

Green Diamond is retaining property in two areas along the urban interface that are zoned for future development. An approximately 35-acre parcel located near Freese Avenue and Harris Street contains 71 potential residential units, including 48 units in the multi-family category. An approximately 88-acre parcel located near the intersection of Campton Road and Walnut Drive represents a development potential for 282 residential units, including approximately 100 units in the multifamily category with the remainder single-family residential.

Funding for Land Acquisition

Funds for the Phase 1 property acquisition are available from the River Parkways Grant Program (California Natural Resources Agency); National Coastal Wetlands Conservation Grant Program (U.S. Fish & Wildlife Service and California Coastal Conservancy); and Forest Conservation Program (California Wildlife Conservation Board). The River Parkways grant was originally awarded to Redwood Forest Foundation, Inc. in 2012 because the Board of Supervisors had not had time to review the concept before the required submission date. Humboldt County was subsequently designated as the applicant for the River Parkways grant. The Wetlands Conservation grant was approved by the Coastal Conservancy in October 2013. The Forest Conservation grant will be considered by the Wildlife Conservation Board at their meeting on May 22, 2014. The total amount of available grant funds is \$6,785,000. The fair market value of the Phase 1 property based on a January 2014 appraisal is \$6,870,000. TPL and Green Diamond are providing the difference (\$85,000) between the available grant funds and the appraised value.

Additional land acquisition of up to 866 acres (Phase 2) contiguous with the southern end of the Phase 1 property is possible depending upon future availability of grant funding. A realistic short-term estimate is the addition of 100 to 300 acres within two to three years.

Planning and Evaluation

The Board of Supervisors heard a presentation on the proposed community forest on December 6, 2011. At that meeting, the Board took the following actions:

1. Adopted a position of support for the concept of a community forest within the McKay Tract, excluding those areas necessary for maintaining an adequate residential land inventory to meet projected future housing needs.
2. Authorized staff to continue evaluating the feasibility of Humboldt County becoming the owner and manager of a community forest within the McKay Tract.

3. Authorized Public Works to apply for a grant through the Headwaters Fund and other sources to develop a management plan for the proposed community forest.
4. Affirmed that the Humboldt County Forest Review Committee may provide technical assistance to the Board of Supervisors, Planning Commission, or County staff regarding formation and management of a community forest.
5. Authorized formation of an informal working group composed of representatives from Public Works, Community Development Services (now Planning and Building), County Counsel, the County Administrative Office, the Humboldt County Forestry Review Committee, and the University of California Cooperative Extension Forest Advisor's Office as well as a representative from the Board of Supervisors.
6. Directed staff to coordinate closely with the City of Eureka, Humboldt Community Services District, and adjacent landowners on planning efforts related to the proposed McKay Tract community forest.

Public Works initiated a planning and evaluation process to develop a management strategy that would meet the desires and interests of the community; be appropriate for the land and its resources and context; be economically self-sustaining over the long-term; and match the County's organizational capabilities.

Public meetings were held on April 30, 2013, at Winship School and on September 11, 2013, at Redwood Acres. A project web site was developed to provide information and make documents available as they were developed. An e-mail list was formed to distribute updates, and the Open Humboldt function on the County web site was used to pose a series of questions soliciting public input. Public Works provided update presentations to the Board of Supervisors on October 15, 2013, and December 17, 2013.

Public Works initiated four technical studies to support the planning efforts. Building on its previous work for TPL, BBW & Associates was retained to develop potential scenarios for future timber harvest and calculate projected costs and revenues. Their results were presented and discussed at two meetings of the Humboldt County Forestry Review Committee (October 30, 2013 and December 12, 2013). Pacific Watershed Associates evaluated the condition of logging roads on the property and the needs for upgrades or decommissioning. LACO Associates performed an analysis of road circulation and traffic levels in the Cutten and southern Eureka area to support consideration of transportation issues in the planning process and ensure that options for improvements to public roads are maintained. Local historian Jerry Rohde prepared a historic profile of the McKay Tract to document its logging, ranching, and railroad history.

Collaboration with City of Eureka

In November 2013, Humboldt County and the City of Eureka executed a Memorandum of Understanding (MOU) for collaborative planning and management of the proposed community forest. The MOU specifies that collaboration provides the opportunity to leverage the strengths and resources of each agency, maximize efficiency and effectiveness, and ensure broad representation and participation in management decisions. County and City staff began evaluating issues including land ownership, financial support and revenue sharing, and management and maintenance responsibilities.

2.2 Concept of a Community Forest

General

A community forest is most commonly owned by a local entity, often a local government or non-profit organization, and managed in a manner that balances social, economic, and environmental values. Management decisions are made at the local level, giving residents both the opportunity and the responsibility to manage their natural resources effectively and sustainably (Aspen Institute, 2005). A fundamental premise of community forestry is that public use, wood production, and forest conservation are not mutually exclusive. Community forests are typically located along the outskirts of a community and easily accessible.

Community forests are different from parks in that the management goals include utilization of forest resources to produce economically valuable products, and therefore a level of commercial activity and forest disturbance is expected. Community forests provide the opportunity to emphasize restoration and enhancement goals in management decisions. In addition, forest biodiversity and the presence of rare species can be viewed as a valued asset.

Community forests have been established across the country with a variety of ownership situations and organizational models. Existing examples provide useful models and reference points to learn from, while recognizing that each one is fundamentally unique. The Arcata Community Forest was initiated in 1955 as the first community forest in California. The Weaverville Community Forest in Trinity County is federal land managed as a partnership between the Trinity County Resource Conservation District, Bureau of Land Management, and U.S. Forest Service. The Usal Redwood Forest in Mendocino County is owned and managed by Redwood Forest Foundation, Inc., a non-profit organization. In addition, some water districts, open-space districts, and land trusts within the state own and manage land with similarities to community forests. None of the 58 counties in California currently have community forests.

Arcata Community Forest

The City of Arcata currently has three community forest units with a total size of over 2,300 acres, including the Arcata Community Forest, the Jacoby Creek Forest, and the Sunny Brae Forest. Arcata identifies ecological, social, and economic aspects as the three pillars of their management approach. Arcata's community forest was the first municipally owned forest in California and serves as one of the city's trademarks.

The Arcata Community Forest and Jacoby Creek Forest units were acquired in the 1930s and 1940s for the purpose of municipal water supply. In 1955, the Arcata Community Forest unit was dedicated to be managed "for the benefit of all citizens of the city, with attention to watershed, recreation, timber management and other values" (City of Arcata, 1994). In 1979, Arcata residents passed the Forest Management and Parkland Initiative which structured the multiple resource management objectives and allowed for the issuance of \$1.6 million in bonds backed by revenues from timber harvest in the community forest to be used for the acquisition and development of city parks. A high level of harvest was implemented from 1981 to 1990 to pay off the bond which was retired early in 1991.

In 1994, the City adopted the Arcata Community Forest & Jacoby Creek Forest Management Plan for the two existing units at the time which comprised 1,125 acres. In 1998, Arcata's forest was certified as conforming to Forest Stewardship Council standards. The City operates under a Non-industrial Timber Management Plan which was approved by the California Department of Forestry and Fire Protection in 1999. The Sunny Brae Forest unit was added in 2010. Over the last several years Arcata has pursued a series of smaller acquisitions and easements with the goal

of connecting the Arcata and Sunny Brae Forest units through the Arcata Ridge Trail. The Jacoby Creek Forest unit has limited trails. Trail development within the Sunny Brae Forest unit began in 2013.

Arcata's forest is managed by the City's Environmental Services Department under the direction of the city council and in consultation with a volunteer Forest Management Committee. The director (Mark Andre) of the Environmental Services Department is a registered professional forester, as well as chair of the Humboldt County Forestry Review Committee and member of the California Board of Forestry. The City's forest was originally managed with assistance from consulting foresters before Mark Andre was hired. Current management priorities include watershed and habitat conditions, recreation, carbon sequestration, timber harvest, and supporting educational and research. Arcata places an emphasis on citizen involvement for implementing projects and providing information to the public regarding forest management objectives.

Arcata's forest is primarily second-growth redwood forest. Approximately 35% of their forest's land base is set aside as a reserve. In 2013, the total inventory of merchantable timber was over 70 million board-feet. Current policy sets the maximum allowable annual harvest at less than one-half the annual growth increment. Forest management focuses on increasing tree size and stand complexity and shifting toward late-successional (old-growth) forest habitat conditions.

Timber harvest revenues are used to fund forest management and restoration-related work and periodically contribute to land acquisitions for parks and expanding the forest system. At times the Forest Fund has also contributed to a park ranger position which is normally funded through other city sources. Operation of Redwood Park (situated within the community forest) is funded by the city's general fund. The city has a goal of maintaining a reserve in the Forest Fund to provide flexibility in timing timber harvest with favorable market conditions.

2.3 Public Input

Public Meetings

The first public meeting was held on April 30, 2013, at Winship School to introduce the project and the County's evaluation approach. Approximately 250 people attended the first meeting. The second public meeting was held on September 11, 2013, at Redwood Acres to provide a project update and identify next steps. Approximately 50 people attended the second meeting.

The majority of comments received at the public meetings was positive for the establishment of the community forest. The most often cited reasons were support for a multi-use trail system (including horses, bikes, dogs, and wheelchair access), sustainable timber harvest, and protection of biological resources. The primary areas of concern included:

- Increased traffic on Freese Avenue and Ridgewood Drive
- Inappropriate uses (homeless camps, vandalism, litter, uncontrolled dogs)
- Negative impacts on surrounding neighborhoods
- Inadequate funding for maintenance

Open Humboldt

The Open Humboldt forum on the County's web site posed a series of seven questions soliciting input on the proposed community forest. The questions and a summary of the responses is provided below:

- 1. Describe your vision of the ideal recreation experience in the proposed community forest.**
 - Trails (primarily multi-use) was the primary response, including access by horses, bikes, dogs and motorized wheelchairs
 - Provide benches and areas for picnicking
 - Split on pro dogs versus no dogs (many wanted areas for dog parks or off leash)
 - Keep area natural (for birdwatching, botany and wildlife)
 - No ATV's

- 2. What concerns and potential problems need to be addressed?**
 - Increased use by homeless
 - Safety (increased vandalism, litter, uncontrolled dogs, impacts on neighborhoods)
 - Impacts to County budget (forest needs to be self-sustaining, also need to budget for upkeep and maintenance)
 - Forestry practices should be sustainable (selective cut management)

- 3. What are your ideas for access points and parking?**
 - Redwood Acres
 - Redwood Fields
 - Winship School
 - Walnut Drive
 - HCSD
 - South access point for horses

- 4. What would you be willing to do to support the proposed community forest being successful?**
 - Participate in fundraising (24)
 - Volunteer to perform trail work/upkeep (19)
 - Donate funds (15)
 - Volunteer horse patrol (5)
 - Boy Scouts/Girl Scouts service projects (3)
 - Other activities (12)

- 5. Please tell us more about the activities you would be willing to do to support this project.**
 - Help with fundraising, donate money (including user fees)
 - Build trails and trail maintenance (pick up litter)
 - Help with community meetings and work parties

- 6. Do you have specific likes or dislikes about the Arcata Community Forest and the way it is managed?**
 - All but one respondent liked the way the Arcata Community Forest is managed
 - Great trails, good trailhead access
 - Too many homeless camps
 - likes that it is self-sustaining

- 7. What are your ideas for community involvement as the efforts move forward?**
 - Keep public informed! (likes the website, want more community meetings)
 - Involve the public in trail design and building
 - Host community work days and fundraisers

2.4 Expected Benefits

Social

The proposed community forest has the potential to enhance the overall quality of life for nearby communities and the greater Eureka area with the following social benefits:

1. Recreation – The community forest would provide a major new area of public land available for recreation and enjoyment of nature and open space. For many residents these opportunities would be within walking distance from home or a short drive away.
2. Public Health – The community forest would provide opportunities for physical activities such as walking, running, bicycling, and horse-riding.
3. Education – The community forest would provide an accessible outdoor classroom for students of all ages.
4. Pride and Identity – The community forest would reinforce the region’s identification and connection with redwood forests, support an appreciation of the region’s timber heritage, and provide a source of civic pride through the responsibility of managing forestland.
5. Open Space – The community forest would provide a buffer between existing urban residential areas in Cutten and Ridgewood Heights and Green Diamond’s retained timberland, and maintain an aesthetic backdrop for the adjacent neighborhoods.
6. Reduced traffic – The community forest would likely cause a net reduction in future traffic levels on Walnut Avenue in the Cutten area by retaining certain residentially-zoned parcels as forestland.

Economic

The proposed community forest has the potential to provide the following direct and indirect economic benefits:

1. Maintain Prime Timberland – The community forest would preserve a portion of Humboldt County’s prime timberland for long-term economic productivity by ensuring that it will not be converted to other non-forestry uses.
2. Demonstration Working Forest – The community forest would allow the public to directly observe a working forest, which would promote an increased understanding of the forest products industry and current forest management practices.
3. Tourism – The community forest would provide a significant new attraction for tourism, which would support local hotels and restaurants through higher visitation, longer vacation stays, and new special events. In addition, the community forest would help reinforce the region’s marketing identification with the redwoods.
4. Boost to Redwood Acres – The community forest would expand the recreational opportunities at Redwood Acres with direct forest access. These opportunities could lead to increased revenues by encouraging higher visitation, more occupancy in the RV park, and more special events.

5. Future Revenue Source – After the initial start-up period to address the various infrastructure needs, the community forest could likely provide a source of surplus revenue for the County and the City of Eureka.
6. Enhance Adjacent Property Values – Studies have shown that high-quality parks and natural areas usually have a positive impact (5 to 15%) on nearby residential property values (TPL, 2009).
7. Watershed Services – The community forest would provide benefits for air and water quality and soil conservation.
8. Quality of Life – The community forest would be an attraction for families and members of the workforce.

Environmental

1. Maintain Forestland – Formation of the community forest would avoid permanent conversion of forestland for non-forest purposes.
2. Shift in Silviculture – Management of the property would shift from even-age to uneven-age management, with primarily light thinning and selection practices utilized.
3. Restoration and Enhancement – The community forest would provide opportunities to emphasize ecological restoration and enhancement goals in forest management.
4. Restoration Funding – As a public agency the County would be eligible for grants for restoration work.
5. Research and Education – The community forest would provide opportunities for research and education regarding natural resources, watershed processes, and forest management.

2.5 Issues and Concerns

The primary issues and concerns identified during the planning process are listed below, with a brief discussion and references to other sections of the Project Report for further information:

1. Conflict with Improving Traffic Circulation

Concern: The community forest could conflict with the need to improve traffic circulation in Cutten and southern Eureka.

Response: The property boundaries were adjusted to ensure that the community forest would not preclude the possibility of a new public road connecting Walnut Drive and Harris Street (Section 2.7).

2. Forest Management

Concern: Timber harvest could adversely impact forest resources and be harmful to threatened and endangered species.

Response: The recommended forest management approach (Section 4) using primarily thinning and selection harvest methods would comply with the California Forest Practice

Rules and is consistent with the City of Arcata's community forest program which has demonstrated the compatibility of timber harvest with recreation and environmental values.

3. Public Access Points

Concern: Access points could create conflicts with adjacent neighborhoods and private property.

Response: Public access points (Section 5) would need to be developed slowly in consultation with neighboring property owners. Redwood Acres and Redwood Fields provide the two best short-term opportunities, however each of these locations has specific issues that need to be resolved before they can be opened to the public.

4. Public Safety and Appropriate Use

Concern: The community forest could be used for encampments, dumping, and other inappropriate uses.

Response: Currently the McKay Tract receives a fairly high level of trespass for recreational use, however the level of illegal camping is relatively limited compared to other parks and open space areas. The McKay Tract is located two or three miles from the Highway 101 corridor through Eureka where commercial and social services are centered. Based on this geographic factor, the potential for significant increases in camping problems is expected to be low. In addition, the existing presence of recreational users has likely been a deterrent against undesirable activities.

Promoting appropriate use of the community forest and creating a safe and secure environment will require involvement by staff and the public. The most effective and visible deterrent to inappropriate activities is the presence of legitimate users. Public Works proposes to use County Parks and Trails staff for baseline patrols along with volunteers to serve as the "eyes and ears," with the long-term goal of having funding to provide a park ranger position dedicated and trained to enforce rules and regulations. Staffing and volunteer efforts are discussed in Section 6.

5. Financial

Concern: The community forest could become a financial burden to the County.

Response: The community forest would be a working forest with periodic revenues from timber harvest. Revenues from timber harvest are projected to increase over time as trees grow and stand volumes increase. Timber revenues would need to be re-invested for an extended period of time to address infrastructure needs (logging roads and trails). The timeframe for developing access points and trails would substantially depend on grants and donations. Because title to the property would be conveyed debt-free, the County would be in control of spending. If grants and donations are not forthcoming or costs are higher than projected, then progress on site improvements would need to wait until harvest revenues become available. Financial aspects are discussed in more detail in Section 7.

2.6 Alternatives

If the County elects not to accept ownership of the community forest, there is some possibility that another entity could become owner and manager of the community forest, if the funding for land acquisition remained available and the funding agencies were willing to transfer the grant agreements. Alternatively, Green Diamond could continue to own and manage the property with a focus on timber management. Portions of the property zoned for residential use could be sold by Green Diamond for subdivision and development based on housing market demand.

Conversion from a working forest to a preserve without timber harvest does not appear to be feasible due to the cost of land management and the need for revenue to offset management costs. No public agency or other entity has offered to manage the property without a secure funding source for ongoing costs. In addition, the grant agreements for the Phase 1 property acquisition specify that the land will remain as a working forest.

2.7 Potential Connector Road

Traffic circulation between Cutten and southern Eureka has been identified as a priority for improvement by Humboldt County and the City of Eureka. The community forest proposal has been developed to ensure that a new future connector road between Cutten and southern Eureka is not precluded.

Major roadways located adjacent to the McKay Tract include Walnut Drive, Campton Road, Harris Street, and Myrtle Avenue. Walnut Drive functions as a major collector, providing north-south connectivity between the residential areas in Cutten and the City of Eureka. Currently traffic in and out of the northern portion of Cutten is funneled through Walnut Drive and enters the incorporated city limits at Hemlock Street, where traffic can proceed to W Street or Dolbeer Street. The Eureka Community Plan (1995) envisioned a connector road between Walnut Drive and Harrison Street passing west of the McKay Tract. The draft Circulation Element in the General Plan Update envisions a connector road between Walnut Drive and Harris Street. Harris Street is a principal arterial road providing east-west connection between the incorporated city and the unincorporated Myrtle town area.

LACO Associates was retained to conduct a transportation analysis of the roadway system adjacent to the McKay Tract. LACO Associates compiled baseline information on traffic volumes and levels of service and performed traffic modeling to project future traffic conditions (2040), assuming two growth scenarios for annual increases in traffic volumes (0.5% and 1.5%). In addition, LACO Associates reviewed existing traffic studies and capital improvement plans to identify opportunities for road improvements on the existing road system.

The third element of the transportation analysis included a preliminary evaluation of four alternatives for potential new road alignments on the northeast side of Cutten. Alternatives were selected to consider the most likely options for providing a second road connection around the Walnut Drive-Hemlock Street intersection. Each alternative would connect with the Walnut Drive near Redwood Fields via road segments that would be created as part of the McKay Ranch subdivision. Alternatives 1 and 2 connect directly to Harris Street utilizing existing logging roads situated with the McKay Tract. Alternative 3 connects to Walford Avenue which leads directly to Harris Street, and Alternative 4 connects to Manzanita Avenue which leads to Harrison Street.

LACO Associates developed planning-level budgetary costs for the four alignment alternatives and performed preliminary traffic modeling to predict the effects on future traffic conditions.

Further project development including engineering design and environmental review would be required to confirm whether a new connector road is feasible and to select the preferred alignment. The estimated costs ranged from \$1.2 million (Alternative 4) to \$3.6 million (Alternative 3). The estimated costs for Alternatives 1 and 2 were \$2.6 million and \$3.3 million, respectively.

Based on the results of this evaluation, the boundary for the Phase 1 property was adjusted to ensure that the existing logging roads could be considered for a future public road alignment, if determined to be feasible and in the public interest. Including these logging roads within the community forest boundary may have precluded the opportunity for a future public road due to conditions and restrictions included in the grant agreements for the proposed land acquisition.

3 PROPERTY INFORMATION

3.1 Overview

Geography

The proposed community forest is located southeast of Eureka near Myrtle town, Cutten, and Ridgewood Heights within the watershed of Ryan Creek, a tributary of Humboldt Bay. Green Diamond's 7,600-acre McKay Tract encompasses approximately 81% of the Ryan Creek watershed (total size 9,400 acres). The Phase 1 property occupies 1,000 acres on the west side of the McKay Tract, bordered to the west and north by urban development. The eastern property boundary for the proposed community forest is defined by Ryan Creek and Ryan Slough.

The Phase 1 property includes approximately 943 acres of redwood-dominated forestland and approximately 57 acres of non-forested areas. Topography varies with flat ridgetops, moderate to steep hillslopes, and broad floodplains. Waterways within the property include portions of Ryan Creek, Ryan Slough, Bob Hill Gulch, and Henderson Gulch. The property includes a network of 17 miles of logging roads. The main road leading into the McKay Tract intersects with Harris Street west of Redwood Acres. The majority of this main road would remain within Green Diamond's ownership and would not be part of the community forest. Electrical transmission lines and other utility lines traverse the property.

Sub-Areas

Seven sub-areas can be distinguished within the boundaries of the Phase 1 property based on road access and connectivity:

- Area 1: The narrow strip of land, formerly a railroad grade, extending between Myrtle Avenue and Park Street.
- Area 2: The hillslope and lowland area around Redwood Acres.
- Area 3: The hillslope area east of Redwood Fields and the McKay Ranch subdivision, bordered by an unnamed tributary to the south.
- Area 4: The ridgetop and hillslope area east of Glen Paul School and east and south of Winship Middle School, bordered by Bob Hill Gulch to the south.
- Area 5: The ridgetop and hillslope area between Henderson Gulch and Bob Hill Gulch, northeast of Northridge Road.
- Area 6: The large area in the southern half of the Phase 1 property between Henderson Gulch and Ryan Creek.
- Area 7: The small ridgetop and hillslope area situated between two forks of Henderson Gulch, north of Christine Drive.

Adjacent Property

The following points should be noted regarding adjacent property:

- Redwood Acres Fairgrounds: The Phase 1 property surrounds Redwood Acres on the west, south, and east sides.
- Private in-holding: A privately-owned residence, accessed from Harris Street, is situated within the overall McKay Tract. This property is located southwest of Redwood Acres and east of Redwood Fields and the McKay Ranch subdivision.
- McKay Ranch Subdivision: This 80-acre parcel is located at the east end of Fern and Redwood Streets in Cullen. The property was split off from the McKay Tract in 1996 and is currently owned by Kramer Properties, Inc. The property is currently forestland. Trespass for recreational use is common. The property is proposed for phased development of a 320-unit, mixed-use subdivision including workforce housing apartment units, affordable single family parcels, townhouse units, condominium units, single family parcels, and neighborhood commercial space (Humboldt County, 2008). Proposed amenities include associated roadways and approximately 30 acres as open space with multi-use pedestrian/bicycle trails. The Board of Supervisors accepted a General Plan Amendment petition filed in 2008.
- Redwood Fields: Redwood Fields is a youth sports complex located at the east end of Fern Street in Cullen, surrounded by the McKay Ranch subdivision. The facility is managed by the Redwood Field Committee. The property was split off from the McKay Tract in 1996.
- Winship Middle School and Glen Paul School: Winship School is part of the Eureka City School District. Glen Paul School is administered by the Humboldt County Office of Education. The school properties include a small portion of the bordering forestland to the east and south. The properties were split off from the McKay Tract in 1963.
- Humboldt Community Services District (HCSD): HCSD has a facility located on Walnut Drive. HCSD provides wastewater collection and conveyance services for the unincorporated areas within district boundaries adjacent to Eureka.

Ownership History

Green Diamond (as its predecessor Simpson Timber Company) took ownership of the McKay Tract from Louisiana-Pacific Corporation in 1998. Louisiana-Pacific was formed in 1972 through a re-organization of Georgia-Pacific Corporation which had acquired the property from Pacific Conservation Company in 1967. Previous owners included McKay & Company (under principal owner Allan McKay) and Ryan, Duff & Company (co-owned by James Ryan) which began acquiring property in the 1850s.

Historic Profile

Local historian Jerry Rohde prepared a report titled *Historic Profile of the McKay – Logging, Ranching, and Railroads* (Rohde, 2014). The history of logging on the property extends back to the 1850s and spans the use of oxen, steam donkeys, tractor skidding, and modern methods. In the early period logs were transported to Eureka Slough and rafted through Humboldt Bay to mills along the Eureka waterfront, including the Occidental mill. Logs were conveyed by railroad to a log-dump on Eureka Slough from the 1880s to the 1930s. The parents of former Humboldt County Supervisor Roger Rodoni leased a house and ranch within the McKay Tract from 1940 to 1976. The ranch was subsequently converted back to forestland by planting spruce trees in the 1990s.

Timber Harvest and Land Management

Most of the old-growth forest in the McKay Tract was harvested by the 1930s. Over two-thirds of the tract was commercially thinned between 1969 and 1984, and nearly half the tract was harvested using clearcut or shelterwood methods between 1975 and 1989. Since 1989, timber harvest methods have been modified to have fewer impacts and land management activities have emphasized infrastructure upgrades and watershed rehabilitation (Green Diamond, 2008).

Green Diamond currently manages the McKay Tract under its California Timberlands Forest Management Plan and pursuant to California's Timberland Productivity Act, the Z' Berg-Nejedly Forest Practice Act, the Board of Forestry's Forest Practice Rules, two Habitat Conservation Plans (aquatic and northern spotted owl), programmatic agreements with the North Coast Regional Water Quality Control Board and California Department of Fish & Wildlife, and other agreements and internal policies and guidelines (Green Diamond, 2012). Biological surveys, watershed monitoring, and restoration and enhancement projects are implemented by Green Diamond's conservation planning division. Road upgrades are implemented concurrent with harvesting and also separately based on programs and timelines established in the Aquatic Habitat Conservation Plan. In 2012, Green Diamond's California holdings were certified as conforming to Forest Stewardship Council standards.

Green Diamond has operated a fish monitoring station within the McKay Tract since 2004 to obtain annual population estimates of outmigrating salmonids. Annual surveys are performed for terrestrial species with special status including amphibians, reptiles, birds, mammals, and plants. A specific working plan to upgrade road conditions in the McKay Tract was prepared in 1998 and updated in 2008.

Public Access and Trespass

The McKay Tract is posted for no trespassing except for authorized use. A local equestrian group has a license agreement to use portions of the McKay Tract. The main haul road that leads from Harris Street along the east side of Ryan Creek is commonly used by walkers, runners, and bicyclists even with the no-trespass posting. Dumping of household garbage, furniture, and other waste materials is relatively common near public roads such as Harris Street and Walnut Drive. Unauthorized camping occurs periodically along the western portion of the tract as well as on the McKay Ranch subdivision around Redwood Fields. Unauthorized motorcycle use occurs periodically, although the level of use appears to have declined as some roads became impassable due to ruts and erosion from the motorcycle use, and due to the decommissioning and blocking of legacy roads that are no longer used.

Environmental Site Assessment

SHN Consulting Engineers & Geologists, Inc. prepared a Phase I Environmental Site Assessment to evaluate the property for the potential presence of environmental contamination (SHN, 2013). SHN found no evidence of hazardous substances or petroleum products that would constitute soil or water contamination.

3.2 Land Use Planning and Regulations

Parcels

The configuration of the Phase 1 portion includes portions of 22 Assessor parcels. In total, approximately 800 acres are zoned for timber production (TPZ), 37 acres are coastal commercial timberland, 40 acres are agricultural exclusive, and 124 acres are residential (low density). The

residential parcels were part of the “roll out” of TPZ land for residential uses within the Eureka Community Planning Area as part of the update of the Eureka Community Plan in 1994.

General Plan Conformance

On November 7, 2013, the Planning and Building Department provided a General Plan Conformance Review to the Planning Commission pursuant to Government Code Section 65402, which applies to any proposed public acquisition of private property. The Planning Commission adopted the report which concluded that the proposed community forest conforms to the Humboldt County Framework General Plan, Eureka Community Plan, Freshwater Community Plan, and Humboldt Bay Area Plan. The General Plan Conformance Review report included the following findings and recommendations:

1. The proposed use is consistent with continued management of the timber resource along with the provision of new and expanded recreational opportunities for the community. By maintaining the unit as a “working forest” it will conserve the McKay Tract’s resource values, maintain timber harvest to offset operating costs, and will create opportunities for expanded public access and recreation. The proposed uses conform to the primary or compatible uses described in the affected land use designations.
Recommendation: Consider future re-designation of the property as Public Lands.
2. Two parcels (APN 300-011-008 and 300-011-003) are listed on the County inventory as contributing 282 and 77 housing units, respectively, to meet the unincorporated County’s moderate and above moderate income households housing needs for this Housing Element planning period. These 359 moderate and above moderate income housing units would not be constructed if the community forest is established. This reduction in land inventory will not impact the County’s ability to meet its housing goals because there is a surplus inventory of this housing type available to meet the projected housing need (total of 2,845 units in the August 2012 Housing Element for a projected moderate and above moderate housing need of 892 units). *Recommendation:* Modify the 2014 Housing Element update to reflect the inventory reduction attributed to these parcels.
3. The 1994 Eureka Community Plan recommends construction of a public roadway extension to convey traffic from Walnut Drive along Cypress Street and then northward on the west side of the McKay Tract to the end of Harrison Avenue. *Recommendation:* Planning for the proposed community forest should include maintaining the option to utilize the community forest property to accommodate a future connector road, if such a road alignment is determined to be feasible and in the public interest.
4. The General Plan does not identify the lands currently being considered for acquisition as part of the County’s Trail Plan. Integration with existing development and infrastructure and ensuring compatibility with adjacent properties and land uses will be key considerations. *Recommendation:* The standards for trail development in Section 4311 of the General Plan should be applied in planning for future access points and trail and support facilities.

The current draft of the Housing Element update that will be reviewed by the Board of Supervisors in May 2014 notes that the reduced development potential for single family units in the land inventory resulting from the proposed community forest would not affect the County’s ability to meet its fair share of the regional housing needs for the time period from 2014 to 2019.

Subdivision Map Act

The proposed configuration of the community forest would require dividing existing legal parcels. Pursuant to Section 66428 of the California Government Code, direct transfer of ownership from Green Diamond to Humboldt County is exempt from the requirement for a Parcel Map in the state's Subdivision Map Act. This exception applies to a "governmental agency, public entity, public utility, a subsidiary of a public utility for conveyance to that public utility for rights-of-way."

Joint Timber Management Plan

The proposed land acquisition would result in the division of six Assessor parcels into new Assessor parcels containing less than 160 acres of land with the TPZ designation. California Government Code Section 51119.5 and Humboldt County Code Section 314-12(c)(1) specify that parcels zoned as TPZ may not be divided into parcels containing less than 160 acres unless a joint timber management plan (JTMP) is prepared by a registered professional forester for the newly created parcels. The purpose of a JTMP is to ensure that the resultant parcels meet minimum stocking requirements, have adequate access to public roads and recorded access to private access roads (if necessary), and are covered by a guide for appropriate management practices. The JTMP fulfills the required finding that the resultant parcels are consistent with continued growing and harvesting of timber. BBW & Associates prepared a JTMP for the affected parcels in coordination with Green Diamond, and the JTMP was approved by the Humboldt County Forestry Review Committee on December 12, 2013. The JTMP would be recorded during the close of escrow.

Effects on HCSO (Martin Slough Interceptor Project)

Starting over 10 years ago, Humboldt Community Services District (HCSO) and the City of Eureka collaborated on the Martin Slough Interceptor Project to improve reliability, efficiency, and cost-effectiveness of the wastewater collection system. The project includes a new gravity sewer main conveyance line (interceptor) in the Martin Slough basin; a new centralized pump station; and other improvements. Wastewater is delivered to the Elk River wastewater treatment plant operated by the City of Eureka. HCSO's share of the Martin Slough Interceptor Project was approximately \$11 million dollars.

Project components were sized for future peak flows based on the predicted future population in the project's service area consistent with projections in adopted local planning documents, including the Eureka Community Plan and the Humboldt Bay Area Plan (Eureka, 2005). HCSO estimates that a total of approximately 8 to 10% of the projected new housing units used in their design and cost recovery calculations are located within the McKay Tract. These units include those located within the proposed community forest and those located on land being retained by Green Diamond for future development. These lands were being used for timberlands when the housing unit projections were developed.

HCSO has expressed concern regarding cost recovery for the interceptor project in light of the proposed community forest which would eliminate a portion of the projected housing units. HCSO increased its monthly sewer service rates and connection fees in fiscal year 2012-13 to cover the debt service on a \$6.4 million loan for the project, with the expectation that future connection fees would offset the need for future rate increases and help with additional infrastructure improvements. The 2012 HCSO Sewer Rate & Connection Fee Study indicates that the current sewer rate structure would allow HCSO to offset or reduce the need for future rate increases if future development occurs in a timely manner.

The proposed community forest would eliminate the potential for future revenue from the parcels currently zoned for residential development. Public Works proposes to collaborate with HCSD on opportunities to capture this projected revenue through other means. Potential opportunities include assisting with grant applications and considering offsets with higher density development at appropriate locations within the service area. In addition, future restroom facilities constructed in conjunction with the proposed community forest could potentially be connected to HCSD service.

Fire Protection Jurisdiction

The Phase 1 property is situated within the State Responsibility Area (SRA) where the California Department of Forestry and Fire Protection (CAL FIRE) has primary financial responsibility for wildfire protection services. Portions of the property are also situated within the district boundary of the Humboldt No. 1 Fire Protection District. All-risk fire protection services are provided within the district by resources from the Humboldt Bay Fire Joint Powers Authority. All-risk fire protection means that they will respond to structure fires, wildfires, medical emergencies, hazardous materials incidents, general disaster management, and other incidents. CAL FIRE retains responsibility for the suppression of grass and forest fires in SRA lands that are located within the boundaries of a local agency. However, due to the proximity of Humboldt Bay Fire resources to the community forest, they will most likely be first on scene in the event of a wildfire. Incident command will then be turned over to CAL FIRE when they arrive on scene and local resources will remain on site to assist as needed.

Property taxes

Public agencies do not pay property taxes for publicly owned lands. The annual property taxes paid by Green Diamond for the Phase 1 property are approximately \$10,000. This amount is based on the zoning for the various Assessor parcels which include TPZ, agriculture exclusive, and residential.

3.3 Roads

3.3.1 Overview

The property includes approximately 17 miles of existing logging roads in varying conditions. The roads were developed over the course of several decades in the context of the overall road network for the McKay Tract. Roads are necessary for maintenance access, patrols, and timber harvest operations and also provide the starting point for developing a trail network.

Green Diamond utilizes a road-naming convention which applies a unique letter-number combination to each road segment based on road type. Green Diamond's main haul road through the McKay Tract is designated the R-Line. Other primary roads are designated with numbers (e.g., R-1, R-2) and connector spurs are given further sub-designations (e.g., R-6-1, R-6-2). The roads accessed from Northridge Road are designated NR-1 and NR-2.

The R-Line is the main haul road leading out of the McKay Tract onto Harris Avenue, west of Redwood Acres. The R-line is used for year-round administrative access to the McKay Tract and seasonally for log hauling and other truck traffic. Most of the R-Line is aligned on the east side of Ryan Creek. A small portion of the R-line would be included in the community forest, but the majority of the road would be retained by Green Diamond. The R-Line represents the main corridor connecting the northern and southern areas of the proposed community forest. As a result of topographic features and the layout of the property, the southern portions of the community forest would not be independently accessible and would require access from the R-

Line. Green Diamond has developed a reciprocal road easement for specified roads including the R-Line to ensure adequate future road access by both entities. The County would have access to the R-Line for administrative and forest management purposes, but the road would not be accessible to the public except for the small portion situated within the Phase 1 property boundary.

3.3.2 Access and Connectivity

For forest management and timber harvest, the primary goal of a road network is to provide access to operating units and connection to public roads. As discussed below, some portions of the Phase 1 property would not be accessible for timber harvest.

Area 1 (Myrtle Avenue to Park Street)

Area 1 is accessed by vehicle via a driveway off Myrtle Avenue where an access road leads to a PG&E facility and City of Eureka pump station. This area contains the old railroad grade and wetlands with no forest component.

Area 2 (South and East of Redwood Acres)

Area 2 is accessed by the R-Line and the R-1 and R-2 roads. The R-Line is gravel-surfaced and generally in good condition. An approximately 200- to 300-foot section of the R-Line within the proposed community forest is situated on a floodplain near a marsh and subject to flooding during moderate rainfall events in the wet season. The R-1 is a relatively short, rocky road leading to and terminating at a private residential in-holding. The R-2 branches from the R-Line and wraps north along the east side of Redwood Acres toward the Ryan Slough bridge on Myrtle Avenue. Historically there was vehicle access from the R-2 onto Myrtle Avenue. The R-2 is currently overgrown and unmaintained. The northeastern half of the road runs on the old railroad line and contains a deep through-cut which has poor drainage.

Area 3 (East of McKay Ranch Subdivision and Redwood Fields)

This hillslope area is not currently accessible by any roads. To the west, the land on the ridgetop and down to the 30% slope contour is part of the McKay Ranch subdivision.

Area 4 (East of Winship and Glen Paul Schools)

The R-4 and R-6 comprise a continuous road which extends along the west side of Ryan Creek opposite the R-Line, turns up adjacent to Bob Hill Gulch, and eventually climbs upslope to the broad ridgetop east of Winship School. The roads have not been used recently and are relatively overgrown. Segments of both roads in the valley bottom are aligned near or within the floodplain of mainstem Ryan Creek and may be prone to flooding and poor drainage. In some locations, large sediment berms built up on the outboard edge of the road are the only thing preventing the road from becoming inundated by flooding. These berms also prevent adequate road drainage and create ponded road reaches. The portions of the R-4 and R-6 along Ryan Creek would require upgrades before they are re-opened for vehicle use.

Due to the density of stream crossings and the proximity to a fish-bearing stream, the segment of the R-6 aligned along Bob Hill Gulch should be considered for decommissioning. If this road segment is decommissioned, it will be necessary to construct an alternate route to maintain access between the ridge-top and the valley bottom. Based on field observations of the topography of the area, it would be relatively easy to re-route the road slightly upslope at a number of locations.

Green Diamond holds an easement that would allow construction of a road along the west side of Winship School for access to the McKay Tract, however this road does not currently exist and the

location is not preferred due to the proximity to the adjacent residential area. Green Diamond is working with Eureka City School District to develop an alternative road access alignment into the Phase 1 property at a more appropriate location (north of the school buildings). Harvest activities and road usage would be restricted to the summer to avoid conflicts with school operations. The road and associated protective fencing would need to be built. A proposal for a new easement for this alignment is currently being developed.

Historically the roads in this area were accessed from the Ryan Creek valley bottom by placing a railcar bridge across Ryan Creek and connecting the R-4 to the R-Line. The log bridge crossing that connected the R-Line to the R-4 and R-6 was decommissioned in 1999. This crossing will require a new bridge if access to the R-Line is needed.

A portion of the northern portion of Area 4 may be too steep for ground-based timber harvest and inaccessible for cable yarding due to the configuration of the property lines.

Area 5 (Northeast of Northridge Road)

This area is accessible from Northridge Road. The NR-1 and NR-2 are ridge-top roads in generally good condition with minimal re-opening work required. The R-6-1 runs along the bank of Bob Hill Gulch and should be considered for decommissioning.

Area 6 (Southern Half of Phase 1 Property)

This area encompasses nearly the entire southern half of the Phase 1 property and contains a network of ridge-top roads, roads along stream corridors, and interconnecting hillslope roads. The primary vehicle access route to Area 6 is via the R-Line on the east side of Ryan Creek and the R-13 at the south end (the “southern access point”). Access from Ridgewood Heights via Beechwood Drive does not appear feasible unless easements are acquired.

The R-7 is the main ridge-top road for the southern half of the Phase 1 property. In addition, for a portion of its extent, the R-7 serves as the western property boundary for the Phase 1 property. The R-7 connects to the southern access point via the R-13-1 and R-7-7. A portion of the R-7-7 passes outside the Phase 1 property boundary.

The R-7.5 is aligned along the west side of Ryan Creek (opposite the R-Line) in the valley bottom. The southern half of the R-7.5 was decommissioned in 2013 by Pacific Coast Fish, Wildlife, and Wetlands Restoration Association and Pacific Watershed Associates, with funding from the California Department of Fish and Wildlife Fisheries Restoration Grant Program, to reduce the sediment delivery risk to Ryan Creek. The northern half of the R-7.5 remains to be treated. The R-7.5 was historically connected to the R-Line with a log bridge crossing over Ryan Creek, however this bridge was removed in 1999. The hillslope portion of the R-7 that connects to the R-7.5 was decommissioned by Green Diamond due to its steepness and condition.

The R-7-1 runs along the south side of Henderson Gulch and connects to the R-7 and R-7.5. A short segment of the R-7-1 closest to the intersection with the R-7.5 was treated in 2013 in conjunction with the work on R-7.5. The R-7-1 is generally in poor condition and will require significant upgrades or potentially decommissioning.

Area 7 (near Christine Drive)

This relatively small area is only accessible by the R-7-2 and R-7-2-2 and is therefore fairly isolated. The R-7-2-2 runs along upper Henderson Gulch and traverses steep, stream-side slopes. Portions of the R-7-2-2 have been partially decommissioned. It is undetermined whether it will

be economical to upgrade the road to current standards. Establishing road access would also require a bridge installation over Henderson Gulch.

3.3.3 Road Conditions

Public Works retained Pacific Watershed Associates to evaluate the condition of the road network within the Phase 1 property and identify sites and areas that have the potential to deliver sediment to waterways and impact water quality (PWA, 2014). These results were used to estimate the costs for upgrading the roads to current standards.

The condition of the existing road network on the Phase 1 property is variable. Some roads are legacy roads built prior to modern standards for road location, design, and construction. The majority of the roads are surfaced with native materials with some portions surfaced with compacted gravel. Some roads are in good locations and require minimal effort for re-opening, while others are in poor condition and require upgrades. Typical upgrade needs include new stream crossings, road surface drainage improvements, removal of unstable fill material, and rock surfacing. Some roads are situated in inappropriate locations and should be considered for decommissioning. In some cases re-alignment of the roads may be feasible. Decommissioned roads can likely be converted to trails for non-motorized use.

A systematic evaluation would be needed to determine which roads should be maintained and which roads should be decommissioned based on benefits and costs. The potential benefits of access for forest management, maintenance, and patrols may justify the cost of road upgrades; conversely some potential road upgrades may not be cost-effective.

Road upgrades can vary in terms of scope and cost based on design considerations, regulatory requirements, and available funding. One approach is to minimize the level of disturbance and the amount of fill material removed, while a more aggressive approach involves more grading and larger amounts of fill removal (at higher cost). Restoration goals such as streambank enhancements can be incorporated into projects, especially when grant funds are available. Upgrades associated strictly with harvest activities may be performed to a minimum acceptable standard.

Grants would be pursued to upgrade roads on an expedited timeframe and to incorporate restoration goals to the extent feasible. At a minimum, roads within an operating unit would be upgraded concurrent with the first entry into the unit, with the entire road system upgraded within the first 20 years of operations. Cost estimates for road upgrades are included in Section 7.

4 FORESTRY

4.1 Overview of Ryan Creek Watershed

The Ryan Creek watershed is a relatively small coastal watershed draining to Humboldt Bay through Freshwater and Eureka Sloughs. The watershed is primarily forested with some dispersed residential development. Ryan Creek is a low-gradient stream transitioning into Ryan Slough south of Myrtle Avenue. Major tributaries to Ryan Creek including Bob Hill Gulch, Henderson Gulch, Guptil Gulch, and Bear Gulch. Climate conditions are heavily influenced by coastal weather patterns due to the close proximity to the Pacific Ocean. Annual rainfall averages 38 inches with the majority falling between November and March. Summer temperatures are mild and the presence of a marine fog layer is common. Soils in the watershed are predominantly silty in nature, derived from the Wildcat and Yager formations of mudstones and siltstones.

Climate conditions and soil characteristics contribute to making the Ryan Creek watershed one of the most highly productive forest areas in the North Coast redwood region. Forestland is dominated by coastal redwood and Douglas-fir, with small components of grand fir, western hemlock, Sitka spruce, and red alder. Redwood trees can reach a diameter of 15 inches within 20 years and up to six feet in diameter in 80 years (Green Diamond, 2008). Within the McKay Tract, the forests are generally comprised of second- or third-growth stands with scattered individual old-growth trees and snags.

Ryan Creek hosts significant populations of coho salmon, Chinook salmon, and steelhead, and also coastal cutthroat trout. Other fish species found in the watershed include tidewater goby and longfin smelt. Numerous other bird and animal species are found in the watershed including peregrine falcons, northern spotted owls, ospreys, northern red-legged frogs, foothill yellow-legged frogs, western pond turtles, and Sonoma tree voles. Black-tailed deer and black bear are also common.

Overall, watershed conditions are in a process of long-term recovery from historical high-impact logging practices from the turn of the 20th century. Over the last 20 years, stream channel conditions have improved significantly as deposits of sediment and woody debris have worked their way out of the system in conjunction with modern forest management practices and the implementation of restoration and rehabilitation projects. These changes have been beneficial to fish by increasing access to spawning habitat and improving habitat quality.

4.2 Timber Management

4.2.1 Approach

Silviculture

Silviculture is the practice of managing, harvesting, regenerating, and sustaining the growth of forests. The community forest would be managed primarily with thinning and selection harvest methods to create uneven-aged or multi-aged stands, shifting away from the use of clear-cutting. Long-term forest management goals would be developed to improve stand conditions, protect wildlife and fisheries habitat, and retain aesthetic and recreational opportunities. Uneven-aged management provides for the removal of mature single trees or small tree groups while maintaining the canopy cover. Gaps and canopy openings provide growing space for natural seedlings, planted seedlings, or sprouts from redwoods stumps to grow. With this shift from even- to uneven-age management, the forest would develop increased diversity in age and

diameter classes and structural complexity. Currently the majority of the stands are younger age classes (generally less than 35 years old). The forests have predominantly been regenerated following previous clear-cut harvests and are ready for thinning and transition to a multi-aged management approach.

Thinning generally refers to the removal of merchantable trees within a stand to reduce stem densities and increase growth rates for the remaining trees. Thinning encourages tree growth by reducing shading, increasing light exposure, and reducing competition for resources. In the absence of thinning, tree growth can slow due to competition especially in even-age stands. There are many thinning options for consideration. Traditional commercial thinning is applied uniformly within a stand, while variable density thinning involves varying thinning intensity across small scales to create a more complex forest structure. Thinning harvests are focused on taking intermediate (slower growing) trees while leaving the larger (highest quality) and smaller non-commercial trees. For younger stands, pre-commercial thinning involves cutting non-merchantable trees to improve stand conditions.

Selection silviculture can be implemented as single-tree selection or group selection. Single-tree selection is similar to thinning except that harvest includes trees from all diameter classes, including a portion of the largest trees in the stand, leading to larger gaps and better conditions for regeneration or the establishment of new trees. Group selection involves removal of small groups of trees within a stand (typically less than 0.5 acres, with a maximum of 2.5 acres) and can be an important tool to recruit regeneration in redwood forests.

Thinning and/or selection prescriptions on the Phase 1 property would need to balance tree growth targets, regeneration recruitment, structural complexity, concerns of bear damage, and economic viability. Typically these criteria can be achieved by removing 20 to 40% of stand volume at each entry. A re-entry cycle may be spaced 5 to 25 years apart depending on many factors.

Road Access

As discussed in Section 3.4, an adequate road system is in place to access the majority of the stand areas, with some exceptions. Logging roads would need to be upgraded to meet current standards prior to, or concurrent with, entry for timber harvest. Some roads would need to be re-aligned and/or re-constructed and temporary or permanent bridge crossings would be needed. Green Diamond has developed a reciprocal access easement to allow both parties use of the road network within the McKay Tract as necessary to conduct timber harvest operations. The majority of timber would be hauled out the R-Line to Harris Street, but some units would be accessed through Cypress Street or Northridge Avenue.

Logging Systems

Options for logging systems include ground-based operations and cable-yarding. Cable-yarding would be practiced on steep hillsides with slopes over 50%. Cable-yarding has higher logging costs than ground-based logging due to higher equipment costs, higher skill level, and lower production rates. For the hillslope areas projected for cable yarding, there is an upper plateau above these units with existing haul roads where cable yarders would be able to access the steeper slopes below. Based on an evaluation of topography and the road system, approximately two-thirds of the operable stand area is projected to have ground-based operations and one-third is projected for cable-yarding.

Management Objectives

Specific silvicultural objectives would be developed in the management plan. Examples of potential silvicultural objectives include the following:

- Develop a multi-story canopy of variable densities.
- Aim for a minimum stocking target in all actively managed areas.
- Aim for specific distribution of trees of certain size classes or species.
- Retain and/or create sufficient volumes of standing dead trees, down logs, and large woody debris on the forest floor.
- Retain dominant conifers that represent the oldest age class on the site.
- Maintain growth and vigor across age and diameter classes.
- Aim for certain wood quality standards (e.g. ring counts, knot sizes, heartwood to sapwood ratios in redwood).
- Increase average tree diameters across the property.
- Build volume over time

The management plan would address whether objectives are qualitative or quantitative and how they would be monitored.

4.2.2 Harvest Scenarios and Cash-Flow Analysis

Public Works retained BBW & Associates to perform an economic analysis of the Phase 1 property for planning and budgeting purposes (BBW, 2013). BBW developed projections for growth, harvest volume, and revenue over a 50-year period based on likely harvest scenarios. For the purpose of this analysis, BBW assumed that the proposed McKay Tract community forest would be managed similar to the City of Arcata's community forest, based on the following guidelines:

- Compliance with California Forest Practice Rules and other applicable laws and regulations
- Single-tree selection and thinning only
- Management capable of meeting Forest Stewardship Council Pacific Coast standards
- Canopy cover would be 70-80% in the forest areas at all times when averaged across the entire forest area
- Improve stocking (volume) and species mix over the life of the stand
- Management would be compatible with public use, recreation, and aesthetics
- Use of cable-yarding on steep hillslopes (>50% slope) to avoid road construction in sensitive areas.

This analysis was performed strictly for planning purposes looking at the property as a whole. The results do not imply any commitment to the timing or sequencing of harvest activities or details regarding harvest layouts.

BBW utilized timber inventory data provided by Green Diamond from Green Diamond's existing forest inventory database (summarized on Tables 1 and 2). Data for the Phase 1 property were developed based on survey plots installed between 2005 and 2011 as part of Green Diamond's overall data collect efforts for internal management purposes, and not for the specific purpose of valuing the timber for the proposed property sale. Based on qualitatively reviewing the inventory summaries and evaluating stand conditions during field reviews, BBW concluded that the inventory data appeared to be reasonable; however they did not perform an independent quantitative review of the inventory data due to the limited time and budget available.

Table 1: Inventory by Operating Units

Operating Unit	Associated Sub-Area	Net Operable Forest Area (acres)	Average Stand Ages (years)	Total Conifer Volume (Board-feet)
Ryan Slough	1	0	n/a	0
Ryan Slough Middle	2	2	27	67,000
Ryan Slough South	2	29	27	829,000
AgLand West	2	26	112 / 27	1,542,000
Ryan Creek North	3	7	no estimate	105,000
North McKay 1-2	3	11	no estimate	413,000
North McKay 3	3	43	27	973,000
Mid McKay 1	4	135	27 / 37	4,298,000
South McKay 3	5	106	27 / 35 / 93	3,304,000
South East McKay 1	6	116	28 / 34	2,840,000
South East McKay 2	6	83	34 / 108	3,089,000
Beechwood 1D	6	102	28 / 34	2,321,000
Beechwood 1E	6	103	<25	1,233,000
Christine 1	7	25	28	664,000
Total:		786		21,679,000

Source: Data provided by Green Diamond, compiled by BBW & Associates (BBW, 2013)

Most of the stands within the Phase 1 property have experienced two or more harvest rotations. Two stands (occupying a total of approximately 190 acres) contain mature second-growth trees with ages near 100 years old. The total operable forest area was determined to be 786 acres, with a total conifer volume of 21.7 million board-feet which includes 17.1 million board-feet of redwood. These amounts exclude non-forested areas, certain areas presumed to be inaccessible, presumed stream protection measures, and a no-cut buffer around the one known northern spotted owl activity center. Harvest activities around spotted owl activity centers are subject to regulations developed by the U.S. Fish and Wildlife Service to ensure that habitat conditions are maintained. Based on the size and quality of the habitat in the vicinity of the activity center, BBW concluded that selection harvest could likely be performed while maintaining the required habitat conditions. BBW assumed that a 500-foot core area around the activity center would be off-limits for harvesting.

A summary of tree volume by size class is provided in Table 2. BBW advised that stands with more than 35,000 board-feet per acre are sufficiently stocked and available to begin commercial thinning that are expected to yield a profit. Stands with 25,000 to 35,000 board-feet per acre could be thinned with a modest profit but with lower net revenue. Implementation of thinning harvests for the 30- to 35-year old stands could yield a profitable harvest and also release growth to improve stocking and structure.

Table 2: Inventory by Volume Class

Volume Class (Board-feet per acre)	Net Acres
<15,000	157
15,000 – 25,000	297
25,000 – 35,000	147
35,000 – 50,000	144
>50,000	42

Source: Data provided by Green Diamond, compiled by BBW & Associates (BBW, 2013)

BBW developed a 50-year cash-flow projection by estimating future trends in log prices and logging costs, modeling growth and yield, and developing two harvest scenarios. The analysis was done for five-year periods. The technical report also discusses the primary sources of risk and uncertainty (log prices, logging costs, road upgrade costs, regulatory restrictions, tree damage, quality of inventory data, modeling limitations, public acceptability of timber harvest, and climate change).

Log price projections were developed to provide reasonable long-term figures for financial planning purposes. Two log price trends (low and high) were projected for redwood logs larger than eight-inches diameter to provide a range of estimates. For redwood logs larger than eight-inch diameter, the low price trend started at \$575 per thousand board-feet (\$/MBF) and the high price trend started at \$650 / MBF. Redwood logs less than eight-inch diameter started at \$380/MBF and Douglas-Fir and white woods started at \$450/MBF. Log prices were assumed to appreciate annually at 1% for 30 years and then hold constant.

Operational costs included logging, trucking, slash clean-up, administration, baseline biological monitoring, normal road opening, yield tax, and the one-time cost of preparing a Non-industrial Timber Management Plan. Logging costs accounted for the expected split between ground- and cable-based logging systems. These costs did not include road upgrade costs which were estimated separately.

Harvest scenario 1 assumed a relatively even rate of harvest volume and net revenue over time, while scenario 2 emphasized harvest in the initial period to maximize near-term revenue. Both scenarios assumed 15-year re-entry periods combined with 25% removal of basal area. Overall, the results for the two scenarios are similar in the first two periods because growth and harvest are constrained by the starting ages of the stands. Stand growth and yield were modeled using the FORest and Stand Evaluation Environment (FORSEE) program.

Growth and yield projections for Harvest Scenario 1 are shown on Figure 1. The total inventory is projected to increase from 21.7 million board-feet to 68.9 million board over 50 years, with a total harvest of 24.4 million board-feet growth and a total growth (after harvest) of 47.2 million board-feet. Projections of net revenue are shown on Figures 2 and 3. Details are provided in the technical report (BBW, 2013).

BBW presented the results of their analysis to the Humboldt County Forestry Review Committee on October 30, 2013, and December 12, 2013. The following questions were posed to the committee for discussion:

1. Is this report consistent with professional forestry standards?
2. Are there unreasonable assumptions? Conceptual flaws? Analytical errors? Are there issues that could affect the results more than 10 to 20%?
3. Are there significant risks not identified?
4. Does the report provide an adequate basis for the County to consider accepting the property?
5. How should the County budget for road upgrade/sediment source reductions – in a separate budget or in this cash flow analysis?
6. Are there other forestry-related questions the County should be asking?

BBW made some minor adjustments to their final report based on this discussion, but no overall flaws or errors were identified that would substantially affect the results.

Figure 1
Growth and Yield Projections
 Proposed McKay Tract Community Forest

Source: BBW (2013)

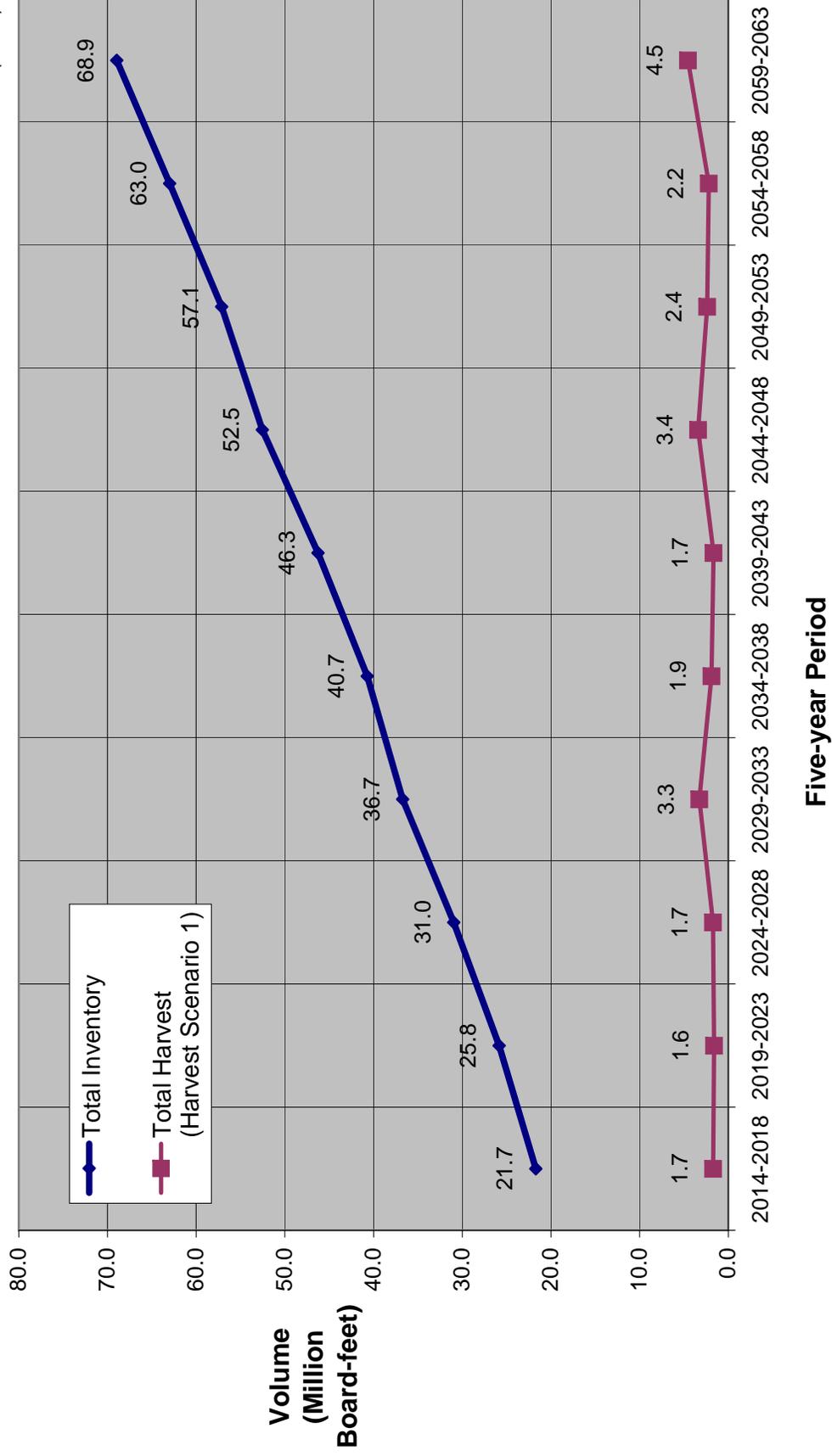


Figure 2: Periodic Net Timber Revenue (Low Log Price Trend)

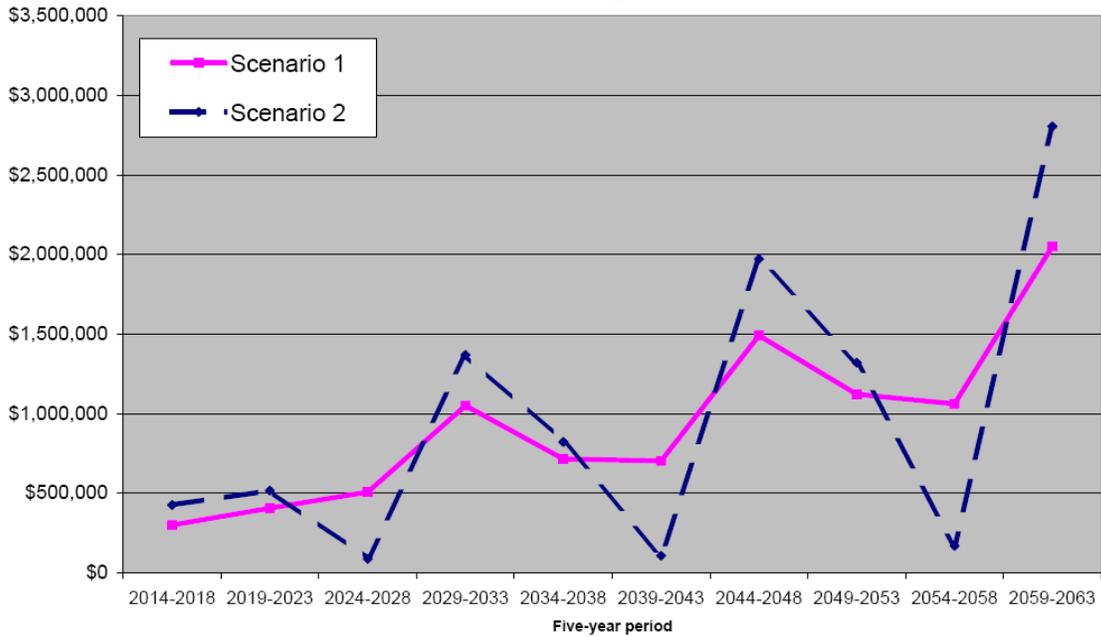
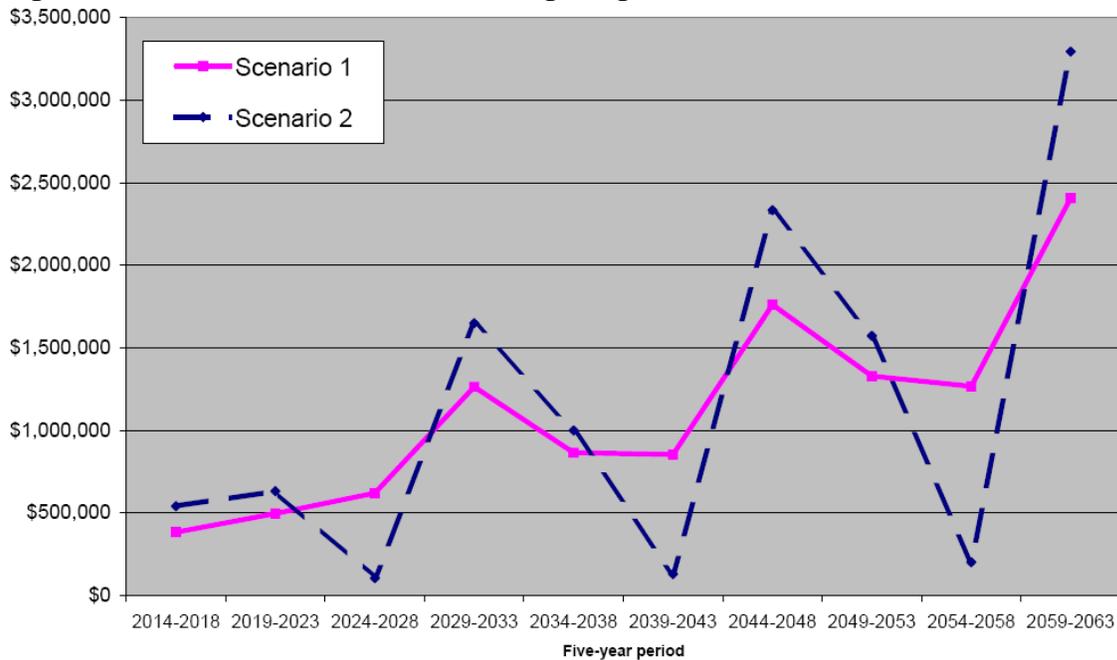


Figure 3: Periodic Net Timber Revenue (High Log Price Trend)



4.2.3 Planning and Implementation

Harvest Planning

Proposals for harvest operations would be developed based on a variety of considerations including stand age and condition; habitat attributes; market conditions; restoration opportunities; and constraints such as slopes, access routes, and proximity to waterways, protected species, infrastructure (powerlines), and residential areas. Green Diamond has provided timber inventory data, biological monitoring and survey data, and other property information for the County's use. Public Works would consult with local foresters who have direct experience managing the

McKay Tract to continue learning about forest conditions and the history of the property. Time would be needed to evaluate the property closely to determine the optimal way to manage it as a parcel separate from the overall McKay Tract.

Permitting and Compliance

Any harvest operations would comply with the California Forest Practice Rules and all applicable laws and regulations. The Forest Practice Rules are implemented by the California Department of Forestry and Fire Protection (CAL FIRE) in consultation with federal and state resource agencies. The McKay Tract is located in the Coast Forest Practices District and is subject to the Anadromous Salmonid Protection rules adopted in 2010. In addition, a new Road Rules package is slated for implementation in 2015. The County would be subject to the same rules as any other private forest landowner in California.

The two main permit types under the Forest Practice Rules are Timber Harvest Plans (THPs) and Non-industrial Timber Management Plans (NTMPs). Passage of Assembly Bill 904 authorized provisions for a Working Forest Management Plan, which will become an additional option within one to two years. THPs are developed for a single commercial harvest and have time limits. Once approved, THPs have a term of three years with the possibility of a two-year extension. An NTMP is a long-term (100-year) plan for landowners with less than 2,500 acres. NTMPs require a property-wide timber inventory, harvest and yield projections, and provisions for road management. Additionally, NTMPs only allow for single tree and group selection harvest and require that harvests do not exceed forest growth. Once an NTMP is approved, harvest operations can be conducted after submitting a three-day Notice of Timber Operations allowing for landowners to respond to favorable market conditions more easily than with a THP.

One scenario is preparation of one or more THPs in the short-term for specific harvests until an NTMP is prepared for long-term operations over the entire property.

In addition to a THP or NTMP, the County would need to obtain the appropriate permit or approval from the North Coast Regional Water Quality Control Board, likely in the form of coverage under the NTMP General Waste Discharge Requirements. Certain activities would also require streambed alteration agreements with California Department of Fish and Wildlife under the Fish and Game Code and permits from the U.S. Army Corps of Engineers in accordance with the Clean Water Act.

Sale Administration

The County would solicit bids for timber purchase. A list of current log buyers located on the North Coast is provided in Table 3:

Table 3: Current North Coast Log Buyers

Company	Location	Wood Type
Agwood	Ukiah	Redwood, Douglas-fir
Arcata Forest Products	Arcata	Redwood
California Redwood Company*	Korbel	Redwood, Douglas-fir
Humboldt Redwood Company	Scotia	Redwood, Douglas-fir
Mad River Lumber	Arcata	Redwood
Mendocino Forest Products, Co.	Ukiah	Redwood, Douglas-fir
Schmidbauer	Eureka	Redwood, Douglas-fir
Sierra Pacific Industries	Arcata	Douglas-fir, Ponderosa Pine

*California Redwood Company does not purchase logs harvested from public land due to federal and state law prohibiting export of such logs.

The County would retain a licensed timber operator for logging and trucking through its standard procurement process.

The sale of commercial timber is subject to a yield tax based on a schedule of values provided by the California State Board of Equalization. Yield tax of 2.9% is calculated based on a formula that accounts for species, total volume, volume per log, logging method, and state-average stumpage values. Humboldt County falls under Timber Value Area 1 on the Board of Equalization's Harvest Values Schedule which is published semiannually.

Other Activities

Woody debris (slash) generated during logging operations may require treatment to reduce fire hazard or prepare the ground for reforestation. The Forest Practice Rules require removal or treatment of slash created within a fire protection zone (200 feet of any permitted structure; 100 feet of all public roads; 50 feet of any private roads that are open to public use). Options include burning on-site in piles, chipping, and/or hauling to a biomass electrical generation facility.

Vegetation control operations may be required to reduce fuel levels, control invasive species, and/or promote tree establishment. Vegetation control would typically be accomplished by hand crews applying mechanical methods.

Monitoring and Adaptive Management

Monitoring would be performed to collect data and information for determining whether forest management activities are meeting the County's management objectives and adhering to the applicable standards and requirements. A monitoring plan would be developed to identify parameters, methods, collection frequency, level of precision/accuracy, and desired use of the data. Potential monitoring parameters include: stocking; growth and mortality; forest structure and other habitat attributes; presence/absence and distribution of special-status species; water quality (e.g., temperature, turbidity/sediment); and patterns of recreational use. The process of setting annual or periodic targets for harvest, restoration, and maintenance would be based on analyzing the monitoring results. There would be a continuous process of learning, adjusting, and improving as knowledge is gained about the forest and its response to management activities.

5 RECREATION

5.1 Recreational Activities

The grant agreements for the acquisition of the Phase 1 property specify that recreational uses must be compatible with forest conservation and protection. Allowable recreational activities would include:

- Walking, running, and hiking
- Education and research
- Bicycling on designated trails
- Equestrian use on designated trails
- Walking with dogs
- Fishing in accordance with California fishing regulations

According to the 2014-2015 California Sport Fishing Regulations, catch-and-release fishing with artificial lures and barbless hooks would be allowed from the fourth Saturday in May through October 31. (Note that fishing regulations are subject to change.) Catch-and-release fishing opportunities in Ryan Creek are likely limited to resident trout based on the type of stream and allowable fishing season. The one exception to the catch-and-release requirement is for hatchery trout, which are unlikely to be present in Ryan Creek.

Motorized vehicles including motorcycles and ATVs would not be allowed for recreational use. In addition, the following activities would not be allowed:

- Camping
- Hunting
- Use of firearms and bow-and-arrow
- Paint-ball
- Construction of tree houses
- Cutting or removal of trees and plants
- Creating unauthorized trails

The management plan would need to address more specific guidelines to avoid user conflicts and impacts to forest resources. Issues to address include rules for dog-walking (e.g., provisions for leashes and waste clean-up) and whether activities such as Frisbee golf and ropes courses are compatible with the overall management goals. County ordinances would need to be updated in conjunction with the development of the management plan.

5.2 Considerations for Potential Access Points

The Phase 1 property and surround areas were evaluated to identify potential locations for public access points. Access points would be developed with trailheads to serve as the formal entryways to the forest trails. Key issues for appropriate access points include available parking areas, connectivity to trail routes, and compatibility with adjacent properties and land use.

Redwood Acres Fairground

Redwood Acres Fairground is a regional event center managed by the Ninth District Agricultural Association. Facilities include halls and buildings, horse stables, an RV park, and a large parking area (north of Harris Street). Redwood Acres is currently going through a planning process to identify new opportunities for use of the property and facilities. Redwood Acres management is

amenable to the concept of integrating access points to the community forest with the Redwoods Acres property. Further consultation would be needed to establish appropriate routes, develop signage, ensure compatibility with Redwood Acres operations, and plan for trail connectivity.

Redwood Fields and McKay Ranch Subdivision

Redwood Fields is a strong candidate for being an access point to the proposed community forest because it is currently used for public recreation and is equipped with a large parking area. However, Redwood Fields is surrounded by the privately owned McKay Ranch subdivision and is therefore not directly adjacent to the Phase 1 property. Provisions for public access to the community forest would be incorporated during the review and approval process for the McKay Ranch subdivision. In addition, there may be an opportunity to explore an easement for trail purposes as an interim arrangement until the subdivision is approved.

Hospice of Humboldt Eureka Campus

Hospice of Humboldt has expressed interest in exploring potential access point and trail connections associated with the development of their new Eureka campus facility on Timber Falls Court. Provisions for public access to the community forest would also require an easement for trail purposes over a parcel of land being retained by Green Diamond.

Winship Middle School / Glen Paul School

The Winship and Glen Paul school campus is not a good candidate for a designated public access point to the community forest due to the potential for conflicts with school operations and parking demand and concerns about safety for students and staff.

Humboldt CSD Facility

Humboldt CSD continues to evaluate the options for future use of the property acquired around their Walnut Drive facility. Humboldt CSD management expressed a willingness to continue to have discussions with the County about potential integration with the community forest.

Green Diamond's Retained Parcel near Walnut Drive-Campton Road

Provisions for public access to the community forest could be evaluated when this property is planned for development.

Northridge Drive

Northridge Drive is adjacent to the Phase 1 property and represents a potential access point to the community forest. Public Works has not yet met with the residents of this neighborhood to discuss potential concerns. Consultation with nearby residents would be the next step.

Cedar Street

Cedar Street passes through a residential neighborhood and terminates in a cul-de-sac. This road does not present an immediate opportunity for a public access point because it is not directly adjacent to the Phase 1 property.

Ridgewood Heights Drive

The area around Ridgewood Heights Drive does not present any immediate opportunities for public access points because it is not directly adjacent to the Phase 1 property. This area would be re-evaluated if there are expansions to the community forest through a future Phase 2.

Myrtle Avenue

Myrtle Avenue does not present an opportunity for establishing a public access point due to the travel speeds of vehicles on the road and the proximity to curves with limited sight distance.

Park Street

Park Street presents an opportunity for limited access to the northern extension of the Phase 1 property (north of Myrtle Avenue), however there are not appropriate provisions for crossing Myrtle Avenue. Establishing a safe crossing for Myrtle Avenue would require further evaluation.

5.3 Trails

The ultimate goal is a trail network with loops of varying distances and levels of difficulty to accommodate a range of users. Trails should be designed for safety, appropriate drainage, low impact on the landscape, minimal maintenance needs, and a favorable recreational experience.

Trails would be surfaced with soil or compacted gravel. Hiking trails are normally two to four feet wide, while multi-purpose trails designed for equestrians and mountain bikes (in addition to foot travel) typically have widths of four to eight feet. Trail facilities would be developed in accordance with accessibility guidelines. Trails would be equipped with signs (directional, regulatory, interpretive) and other amenities such as benches and garbage cans.

The existing logging roads and informal use trails provide the starting point for planning a trail network within the community forest. Three key issues for trail development on the Phase 1 property are:

- Connecting the trails with appropriate access points. The first opportunity is to develop trails around Redwood Acres. Another priority is to explore potential access from Redwood Fields.
- Avoiding conflicts with adjacent property. The trails around Redwood Acres would need to be carefully planned to avoid conflicts with the private in-holding residence.
- Connecting the different sub-areas within the Phase 1 property. Planning would be needed to look for optimal connections between sub-areas that are now partially or fully isolated from each other. For example, a pedestrian bridge would likely be needed across Henderson Gulch to connect the R-6 and R-7-1 roads.

Property retained by Green Diamond to the east and south of the community forest would not be accessible to the public. The only exception being considered is a 40-foot-wide trail corridor at a specific location south of the Phase 1 property for a potential future connection to the Headwaters Forest.

5.4 Summary

Development of public access points and trails would need to be implemented in phases over time. Key next steps include:

- Work with the appropriate entities to develop designated public access points at Redwood Acres and Redwood Fields.
- Develop a specific layout plan for trails in the vicinity of the designated access points.
- Develop a logical sequence of trail projects.
- Develop a program to coordinate and supervise volunteers with trail-building work.
- Implement contract projects in conjunction with volunteer work where needed.

6 STAFFING AND VOLUNTEERS

Public Works evaluated the functions and capabilities that would be needed to make the proposed community forest successful. In addition to County (and potentially City) staff, the community forest would depend on active public involvement in order to be successful. Public involvement can occur in a variety of forms including trail building and maintenance, trail clean-up, volunteer patrols, restoration activities, advisory support, educational programs, and fund raising. The proposed community forest would provide opportunities for projects and activities by schools, Boy Scouts and Girl Scouts, senior groups, recreation groups, public service clubs, and other organizations.

The following analysis is based on primary duties being performed by County staff. County and City staff would continue to evaluate collaboration opportunities.

Management

Management functions include planning and coordination, budgeting and finances, contracting, grant administration, communications, project development, and forest management. Forest management includes harvest planning and oversight, permitting, biological surveys and monitoring, and implementation of timber harvest operations. Management functions would be based in the Environmental Services division of Public Works. Public Works would look to hire a new senior environmental analyst to address the new work load for the community forest and other existing staffing needs.

For at least the first several years, Public Works would retain a registered professional forester consultant to assist with harvest planning and implementation. Over time, there may be an opportunity to hire in-house staff with these qualifications. There would also be a need to hire a consultant or have qualified in-house staff to perform biological surveys and monitoring. Harvest plans would be presented to the existing Humboldt County Forestry Review Committee and the newly formed Community Forest Advisory Committee for review and comment prior to finalization. Harvest operations would be contracted to a licensed timber operator.

Trail Building and Maintenance

Trail building would be performed by staff, contractors, and volunteers. Some work can be performed by volunteers with hand tools working under supervision, while other work requires the use of heavy equipment or more technical expertise and would be performed by staff or contractors. Once built, trails would require maintenance to keep them in a safe and usable condition. Maintenance includes a range of routine and non-routine tasks including basic upkeep and response to incidents.

Trail building and maintenance functions would be based in the Parks and Trails division of Public Works. Public Works would look to hire a new park caretaker to address the work load for this project because currently there is not sufficient staff capacity. The Parks and Trails division has a personnel allocation of six full-time employees, however one of these positions has been held vacant for the two prior fiscal years to meet budget reductions.

The Parks and Trails division would be responsible for coordinating volunteers and planning for projects. Road upgrades and more substantial site improvements would be contracted to a licensed contractor.

Patrols and Enforcement

As stated in Section 2.5, promoting appropriate use of the community forest and creating a safe and secure environment would require involvement by both staff and the public. Parks and Trails staff would provide a limited amount of baseline patrols and monitoring, however the most effective deterrent to inappropriate activities would be the presence of legitimate users. This approach has worked successfully on the Hammond Trail in McKinleyville with trail users serving as the “eyes and ears” to deter problems and report promptly when they do occur. Volunteer patrols could be coordinated with the Volunteer Trail Stewards program and the Sheriff’s Citizens on Patrol program.

In addition, a longer-term goal would be to have funding to provide a park ranger position dedicated and trained to enforce rules and regulations within the community forest as well as other parks and open space areas. Staffing levels within the Sheriff’s Office have been reduced over the last several years due to the County’s overall budget reductions, and therefore the Sheriff’s Office does not currently have capacity to take on additional patrol duties. The Sheriff’s Office would continue to provide law enforcement response for criminal incidents and emergency situations that occur on the property. Options for a future park ranger position include:

- The park ranger is a commissioned peace officer in the Sheriff’s Office. Park ranger duties could be full- or part-time. The assigned area could include the community forest and the entire County parks and trails system. Duties would focus on policing and law enforcement.
- The park ranger is a non-commissioned staff based in the Parks and Trails division. The job description would include other forest management and maintenance duties.
- The County and City of Eureka could collaborate on funding for a park ranger position (based in either the Sheriff’s Office or Police Department) that would provide coverage for the community forest along with city parks and greenbelt areas within city limits.

Funding for a park ranger position was not included in the cost projections contained in Section 7. The balance of park staff, volunteers, and law enforcement personnel would need to evolve over time based on the observed needs and available resources.

7 FINANCES

7.1 Overview

Planning for the proposed community forest is based on the premise that the forest would be economically self-sustaining over the long-term without reliance on the County's General Fund. Continuation of a working forest is essential to financial viability. From a financial perspective, the community forest can be viewed as an economic asset that would be managed similar to other public enterprises (such as utility services), except that revenues are derived from periodic timber harvest rather than user fees or charges.

A major benefit of the Phase 1 property is that state and federal funds would cover the full purchase price. County funds are not required for land acquisition and the County would receive title without the need for ongoing payments. In addition, the Phase 1 property represents some of the most productive redwood forestland on the North Coast. Based on existing stand volume, the Phase 1 property has the potential for a moderate amount of profitable timber harvest in the short-term, and revenues are projected to increase significantly over time as the volume increases.

The need to develop access points and trails and upgrade logging roads represents a major infrastructure cost. Timber harvest revenues would need to be re-invested for an extended period of time (up to 30 years) in conjunction with grants and donations, and a loan would be required to accommodate cash-flow during this start-up period.

Evaluating the financial aspects of the proposed community forest requires looking at an extended time period and considering a portfolio of different types of revenues and costs. Public Works developed 50-year financial projections based on available information and reasonable assumptions for each of the revenue and cost categories. The revenues and costs were aggregated into ten five-year periods. Financial projections are shown on Table 4 and depicted on Figure 3.

It's important to emphasize that the financial projections encompass a multitude of assumptions and uncertainties and are not intended to serve as forecasts or budgets. Rather, the projections are an effort to present a reasonable, moderately conservative scenario of the various revenues and costs associated with the proposed community forest, as a basis for planning and decision-making. While many details and assumptions could be adjusted, the intent was to capture the overall big picture of the proposed enterprise.

7.2 Revenues

Revenues include pledged start-up funds, timber revenue, donations and fundraising, and grants.

Start-up Funding

TPL has pledged \$125,000 to assist the County with start-up costs. The City of Eureka has pledged an initial contribution of \$5,000 for Fiscal Year 2014-15.

Timber Harvest Revenues

Projections for timber harvest revenues are based on the financial analysis discussed in Section 4. Public Works assumed the average of the low and high log prices projections for Harvest Scenario 1 (BBW, 2013).

Donations and Fundraising

Interest has been expressed by the public for supporting the community forest through donations and fundraising. Public Works assumed that funds from donations and fundraising would be provided for 30 years as follows: \$40,000 per year for the first five years; \$30,000 per year for the next ten years; and \$20,000 per year for the next 15 years.

Grants for Road Upgrades and Trail Development

State and federal grant programs are available to provide assistance with road upgrades and trail development. Opportunities include:

- California Natural Resources Agency – Environmental Enhancement and Mitigation Program
- California Department of Fish and Wildlife – Fishery Restoration Grant Program
- California Department of Forestry and Fire Projection – Urban & Community Forest Grant Program
- California Wildlife Conservation Board
- California Coastal Conservancy
- USDA-Natural Resource Conservation Service – Healthy Forest Reserve Program
- Federal Land and Water Conservation Fund

In addition, the community forest would be eligible for an allocation from the County's Parkland Dedication (Quimby Act) funds. Grants were assumed to cover 75% of total costs for road and trail projects.

Other potential options

The following options were identified for future consideration:

- User fee – This fee could be considered in the future if a central entrance point is established.
- Parking fee – This fee could be considered in the future if specific parking areas are developed.
- Benefit assessment – This option could be considered in the future on a regional basis to address related facilities and services such as Sequoia Park Zoo, regional trails, and/or a regional aquatic center. A benefit assessment requires voter approval.
- Carbon sequestration – Carbon sequestration is an emerging market; further evaluation would be needed to determine whether the stocking levels meet minimum thresholds and whether carbon sequestration is compatible with the overall management goals.

7.3 Costs

Costs include start-up costs, management and maintenance, road upgrades, trail development, and interest expenses.

Start-up Costs

An amount of \$250,000 was assumed for various start-up costs including completing a management plan, developing access points, developing forest program capability, equipment purchases, and other one-time expenses.

Management and Maintenance

This category includes staff costs, expenses, and outside services required for ongoing management and maintenance. Cost projections start at \$125,000 for Fiscal Year 2014-15 and increase at 1% annually.

Road Upgrades

Costs for road upgrades were developed based on the assessed conditions of the existing 17 miles of logging roads. The cost projections are spread over 20 years for a total amount of \$900,000.

Trail Development

Costs for trail development are assumed to total \$500,000 over ten years. This amount encompasses equipment, materials, staff time, and contractor costs. The need for at least one pedestrian bridge is anticipated. This category could also provide for development of access points and trailheads.

Interest Expense

The need for a loan is assumed during the 30-year start-up period when costs exceed revenues. The cumulative balance in the "Forest Fund" determined the amount financed. Cumulative fund balance is calculated as total revenues minus total costs for each five-year period plus the balance from the previous period. Interest expense was calculated on an annual basis assuming an interest rate of 2.0%. This approach is possible, for example, if the County can exercise an internal loan. The County Administrative Office has indicated that an internal loan from the motor pool fund could be considered. Alternatively, the County could select an external loan with the principal provided upfront and loan payments made progressively over the term of the loan. The Clean Water State Revolving Fund is a potential loan option. The total projected interest expense is \$245,000.

7.4 Summary of 50-Year Financial Projections

Revenue

- Net timber revenue is projected to total \$3.3 million over the first 25 years (2014 through 2038) and \$7.0 million over the following 25 years (2039 through 2063).
- TPL has pledged \$125,000 to assist with start-up costs, and City of Eureka has pledged \$5,000.
- A total of \$800,000 over 30 years is assumed for donations and fundraising (\$40,000 per year for the first five years; \$30,000 per year for the next 10 years; and \$20,000 per year for the next 15 years).
- A total of \$1,050,000 in grant funding over 10 to 20 years is assumed for road upgrades and trail development.

Costs

- Infrastructure improvements include road upgrades (\$900,000 over 20 years) and trail development (\$500,000 over 10 years).
- One-time start-up costs are estimated at \$250,000.
- Management and maintenance costs are projected to start at \$125,000 per year for Fiscal Year 2014-15 and increase annually at 1%.

Financing

- Financial projections assume no allocations from the County General Fund.

- A loan would be needed for approximately 30 years to finance cash-flow until site improvements are completed and timber revenues increase to a sufficient level.
- The amount financed would reach its peak (\$751,000) approximately 10 to 15 years after start-up. Total interest expense over 30 years is \$245,000.
- After 30 years, the net cash position of the Forest Fund would be positive. For the 20 years following this start-up period, the total net return would be \$2.3 million.

7.5 Conclusions

- From a financial perspective, the community forest represents an investment opportunity in a resource land. The County would not be investing capital for the purchase, but a loan (essentially a business loan) would be required during the approximately 30-year start-up period when costs exceed revenues, based on the condition of paying off the loan with future timber harvest revenues.
- The community forest would provide a variety of social and environmental benefits that have economic value but were not quantified.
- Timber harvest revenues are projected to increase substantially over several decades as trees grow and stand volume increases. Revenue projections were prepared by an forestry consultant firm using reasonable assumptions and standard analysis methods and reviewed by the Humboldt County Forestry Review Committee. However, projections of timber harvest revenue are uncertain and subject to a variety of risks (e.g, risk of poor market conditions or rising costs, risk of regulatory restrictions, risk of forest damage).
- The County would aim to schedule harvest activities to coincide with favorable market conditions to boost revenues.
- The County would have flexibility and control over spending. The timeframe for developing trails and access points would substantially depend on grants and donations. If grants and donations are not forthcoming or costs are higher than projected, then progress on site improvements would need to wait until harvest revenues become available.
- Timber harvest revenues would need to be re-invested into the property during the first 30 years until the infrastructure is developed and the timber stands mature to yield higher revenue. After the start-up period, there is the likelihood of surplus revenues that could be used to fund operation of County parks and trails and reduce or eliminate the Parks and Trails Division's dependence on the General Fund.
- The City of Arcata's community forest provides a model and proof-of-concept that a community forest can be economically self-sustaining.

Table 4

50-Year Financial Projections
Proposed McKay Tract Community Forest

Date Prepared: April 4, 2014

Five-year Periods		REVENUE					FINANCING			
No.	Years	Net Timber Revenue (1)	Pledged Start-up Funds (2)	Donations/ Fundraising (3)	Grants for Road Upgrades (4)	Grants for Trail Development (4)	Total Revenue	Cumulative Fund Balance (6)	Amount Financed	Net Cash Position
1	2014-2018	\$341,338	\$130,000	\$200,000	\$262,500	\$225,000	\$1,158,838	-\$402,788	\$402,788	\$0
2	2019-2023	\$450,846		\$150,000	\$225,000	\$150,000	\$975,846	-\$652,093	\$652,093	\$0
3	2024-2028	\$563,570		\$150,000	\$112,500		\$826,070	-\$751,358	\$751,358	\$0
4	2029-2033	\$1,156,748		\$100,000	\$75,000		\$1,331,748	-\$308,873	\$308,873	\$0
5	2034-2038	\$789,618		\$100,000			\$889,618	-\$223,280	\$223,280	\$0
6	2039-2043	\$778,110		\$100,000			\$878,110	-\$182,881	\$182,881	\$0
7	2044-2048	\$1,625,490					\$1,625,490	\$583,186	\$0	\$583,186
8	2049-2053	\$1,224,905					\$1,224,905	\$904,828		\$904,828
9	2054-2058	\$1,163,750					\$1,163,750	\$1,119,241		\$1,119,241
10	2059-2063	\$2,228,904					\$2,228,904	\$2,350,381		\$2,350,381
Total:		\$10,323,279	\$130,000	\$800,000	\$675,000	\$375,000	\$12,303,279			Net Return: \$2,350,381

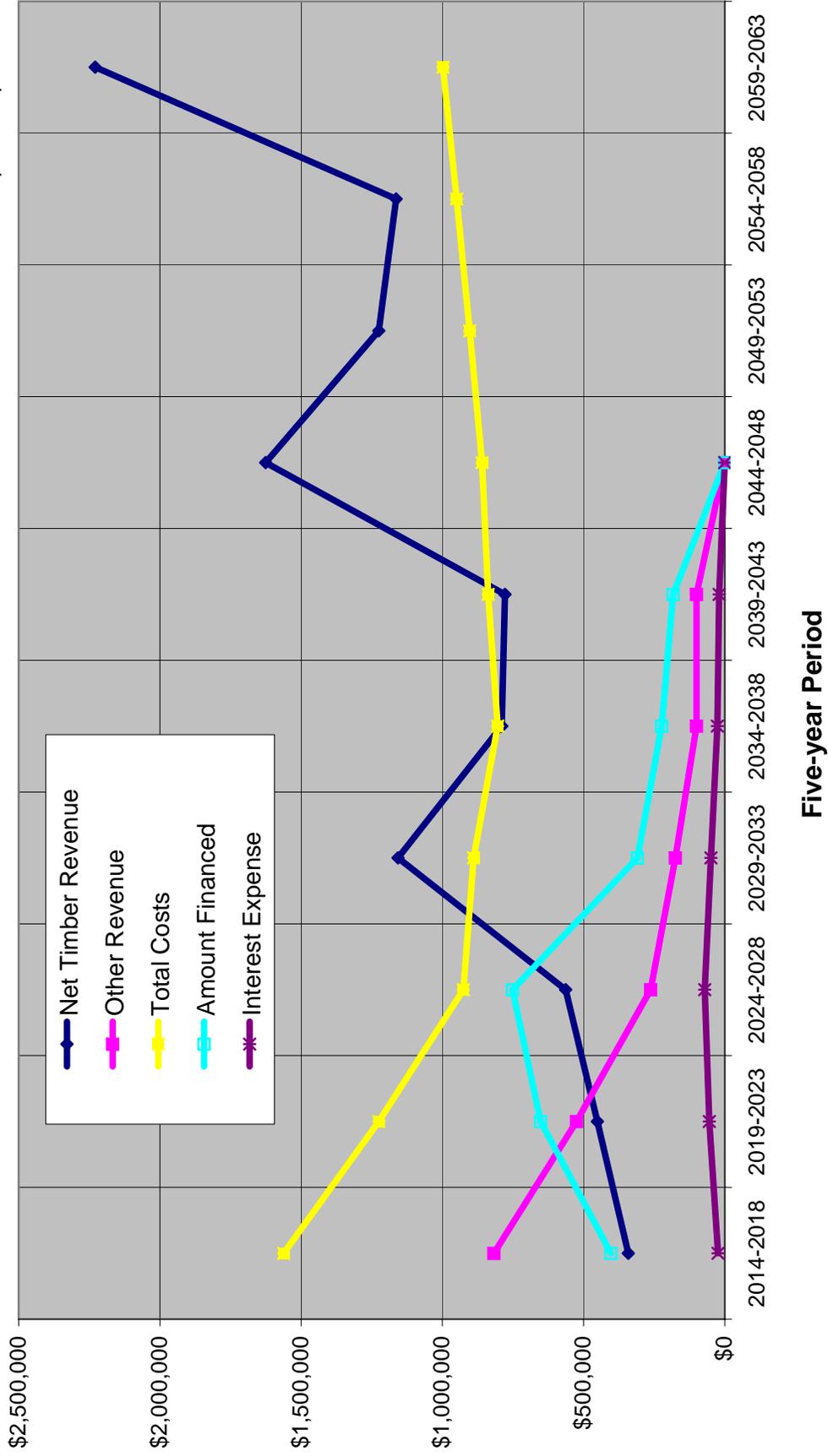
Five-year Periods		COSTS					Total Costs
No.	Years	Start-up Costs (5)	Management and Maintenance (6)	Road Upgrades (7)	Trail Development	Interest Expense (8)	Total Costs
1	2014-2018	\$250,000	\$637,626	\$350,000	\$300,000	\$24,000	\$1,561,626
2	2019-2023		\$670,151	\$300,000	\$200,000	\$55,000	\$1,225,151
3	2024-2028		\$704,335	\$150,000		\$71,000	\$925,335
4	2029-2033		\$740,264	\$100,000		\$49,000	\$889,264
5	2034-2038		\$778,024			\$26,000	\$804,024
6	2039-2043		\$817,712			\$20,000	\$837,712
7	2044-2048		\$859,423			\$0	\$859,423
8	2049-2053		\$903,262				\$903,262
9	2054-2058		\$949,338				\$949,338
10	2059-2063		\$997,763				\$997,763
Total:		\$250,000	\$8,057,898	\$900,000	\$500,000	\$245,000	\$9,952,898

Notes:

- (1) Source: Cash Flow Analysis of Timber Management (BBW, Dec. 31, 2013)
Figures used are for Harvest Scenario 1 (Tables 9 and 10) using the average of the low and high log price projections.
- (2) Pledged start-up funds include \$125,000 from The Trust for Public Land and \$5,000 from the City of Eureka.
- (3) Donations and fundraising are assumed only during periods with negative cumulative fund balance.
- (4) Grants are assumed to cover 75% of total costs for site improvement projects.
- (5) Start-up costs include completing a management plan, developing access points, developing a forest program, and other one-time expenses.
- (6) Management and maintenance costs include patrols and volunteer coordination.
Values shown are the total costs for the five-year period. Projections assume 1% annual increase.
- (7) From logging road assessment and preliminary cost estimates.
- (8) Assumes loan at 2.0% interest rate.
- (9) The cumulative balance in the "Forest Fund" is total revenues minus total costs for the period plus the balance from the previous period.

Figure 4
50-Year Financial Projections
 Proposed McKay Tract Community Forest

Date Prepared: April 4, 2014



8 LIST OF PREPARERS AND CONTRIBUTORS

Humboldt County Public Works Department

Todd Becker Hank Seemann
Cybelle Immitt Martha Spencer

Humboldt County Planning and Building Department

John Miller

Humboldt County Forestry Review Committee

Jim Able Chris Carroll Ben Hawk Yana Valachovic
Mark Andre Charles Ciancio Gary Rynearson Mari Wilson

City of Eureka

Miles Slattery

City of Arcata

Mark Andre

UC Cooperative Extension

Yana Valachovic

The Trust for Public Land

John Bernstein Dave Sutton

Green Diamond Resource Company

Craig Compton Greg Templeton
Mike Pruitt Jeremy Wright

Redwood Community Action Agency

Denise Newman Kevin Wright
Emily Sinkhorn

James Able Forestry

Jim Able

BBW & Associates

Greg Blomstrom Jared Gerstein

LACO Associates

Becky Dower Netra Khatri Ryan Wells
Scott Kelly Mike Nelson

Pacific Watershed Associates

Christ Herpst Eileen Weppner

Jerry Rohde, M.A.

9 REFERENCES

Andre, Mark, 2011. Community-Based Forest Management in Arcata, California. Chapter 8 in Human Dimensions of Ecological Restoration: Integrating Science, Nature, and Culture.

The Aspen Institute, 2005. Growth Rings: Communities and Trees; Lessons from the Ford Foundation Community-Based Forestry Demonstration Program, 2000-2005.

BBW & Associates, December 31, 2013. Final Updated Cash Flow Analysis of Timber Management on the Phase 1 Property of the Proposed McKay Tract Community Forest, Eureka, CA.

BBW & Associates, December 2013. McKay Tract Joint Timber Management Plan. Prepared for County of Humboldt and Green Diamond Resource Company.

City of Arcata, 1994. Arcata Community Forest & Jacoby Creek Forest Management Plan.

City of Eureka, April 2005. Environmental Assessment, Martin Slough Interceptor Project.

Community Forest Collaborative, August 2007. Community Forests – A Community Investment Strategy. Prepared by a partnership of The Trust for Public Land, Northern Forest Center, and the Quebec-Labrador Foundation/Atlantic Center for the Environment.

Forest Stewardship Council, February 10, 2012. FSC Principles and Criteria for Forest Stewardship.

Humboldt County, April 25, 1995. Eureka Community Plan. Humboldt County General Plan, Volume II.

Humboldt County Community Development Services Department (now the Planning and Building Department), 2008. Staff reports for the public hearings held on May 13, 2008, and August 26, 2008, for the McKay Ranch Subdivision General Plan Amendment Petition.

Humboldt County Planning and Building Department, October 29, 2013. McKay Community Forest General Plan Conformance Report. Prepared for the Humboldt County Planning Commission, public hearing on November 7, 2013.

Green Diamond Resource Company, June 30, 2008. Timber Harvest Plan 1-08-102 HUM.

Green Diamond Resource Company, August 17, 2011. Timber Harvest Plan 1-11-077 HUM.

Green Diamond Resource Company, October 2012. California Timberlands Forest Management Plan.

LACO Associates, November 25, 2013. Draft McKay Tract/Cutten Area Preliminary Transportation Analysis, City of Eureka/County of Humboldt, California. Prepared for Green Diamond Resource Company, The Trust for Public Land, and County of Humboldt.

Pacific Watershed Associates, March 2014. Logging Road Assessment Report, Proposed Phase 1 Community Forest Acquisition, McKay Tract, Green Diamond Resource Company Property, Humboldt County, California.

Rohde, Jerry, March 2014. Historic Profile of the McKay Tract; Logging, Ranching, and Railroads. Prepared for the Humboldt County Public Works Department.

SHN Consulting Engineers & Geologists, Inc., April 2013. Phase I Environmental Site Assessment, Proposed Ryan Creek Humboldt Community Forest, Humboldt County, California.

The Trust for Public Land, March 2009. Measuring the Economic Value of a City Park System.

Maps
