

The San Francisco Bay National Wildlife Refuge Complex Transportation Evaluation: An Examination of the Transportation Challenges and Opportunities Facing the Seven Refuges in the Complex

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Paul S. Sarbanes
Transit In Parks

Technical Assistance Center

UNDERSTANDING

RESOURCES

SOLUTIONS

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ABSTRACT

Over a ten-month period in 2012 and 2013, Public Lands Transportation Scholar Matthew Bruno assisted the San Francisco Bay NWR Complex in evaluating the transportation challenges at each of the seven refuges in the complex.

The primary focus of the scholar was to work with refuge staff, AC Transit, and the city of Newark to improve connectivity for pedestrians, cyclists, and transit users around the headquarters area of Don Edwards San Francisco Bay NWR, one of the seven refuges in the complex.

A secondary focus was to develop a complex wide transportation evaluation that looked at each of the seven refuges and identified strategies for using transportation infrastructure and policy to improve visitor experience, reduce greenhouse gas emissions and improve operational efficiency.

INTRODUCTION

The San Francisco Bay National Wildlife Refuge Complex is a collection of seven National Wildlife Refuges (NWR) administered by the U.S. Fish and Wildlife Service (FWS): Don Edwards San Francisco Bay NWR, San Pablo Bay NWR, Antioch Dunes NWR, Marin Islands NWR, Elicott Slough NWR, Salinas River NWR, and Farallon Islands NWR [see Appendix 1 for a map of the refuges in the complex]. Although each of the refuges are located in or near the Bay Area and are dedicated to a common purpose of wildlife preservation, they have very different transportation needs.

The transportation scholar evaluated the transportation needs at each of the refuges in the complex. For refuges near public transportation routes or urban areas, the transportation evaluation focused primarily on connecting pedestrians, cyclists, and transit users with the refuge. For refuges that are either closed to the public or only primarily accessible by automobile, the document evaluated the potential for any general improvements to the transportation conditions.

The evaluation was created as part of the Public Lands Transportation Scholars program. The Federal Transportation Administration (FTA), through the Paul S. Sarbanes Transit in Parks (TRIP) program, funded Matthew Bruno, a transportation planner based in the Bay Area, to work for a ten-month period with the San Francisco Bay NWR Complex. The report created was based on the Regional Alternative Transportation Evaluation (RATE) framework created by the FWS. The RATEs provide a regional assessment specific to each of the eight regions in the country. The document created by the scholar centered only on the San Francisco Bay NWR Complex. Therefore, this report differed from the regional assessments in that it took a more detailed look at the issues particular to each refuge in the complex rather than giving a general overview of the region as a whole. The purpose of this document was to identify where opportunities for transportation improvements exist, offer potential solutions, and provide an outline for the implementation of those improvements.

In the creation of the transportation evaluation, one issue stood out above the others: increasing safety around the entrance to the refuge headquarters at Don Edwards San Francisco Bay NWR. The scholar gave this aspect of the project priority and worked with refuge staff and outside organizations to document the problems and work toward potential solutions. The results of both the general transportation evaluation and the specific project of resolving safety issues around the refuge headquarters entrance are described in this final report.

METHODOLOGY

The transportation evaluation was compiled through a combination of site visits and discussions with refuge managers, staff, and volunteers. The only refuge in the complex not visited by the scholar was Marin Islands NWR, as it is only accessible by kayak. Site visits for Don Edwards San Francisco Bay NWR, Antioch Dunes NWR, Farallon Islands NWR, and San Pablo Bay NWR were conducted with refuge staff present to describe visitor use patterns and clarify transportation issues. Visits to Elicott Slough NWR and Salinas River NWR were conducted with the scholar's TRIPTAC mentor and the issues raised during the visits were discussed later with the refuge manager.

In addition to site visits and meetings with refuge staff, the transportation scholar relied on refuge policy documents, Comprehensive Conservation Plans for the individual refuges, and data collection conducted by the scholar. The data collection included visitor counts at the headquarters entrance of Don Edwards San Francisco Bay NWR over a three day period and at the entrance to the Environmental Education Center (EEC) over a two day period. All of these sources informed both the transportation evaluation and the Headquarters area safety project.

Once an initial draft of the transportation evaluation was completed, the document underwent a review process with both the scholar's TRIPTAC mentor and with the Chief of Visitor Services for the refuge complex. Based on their feedback, the scholar conducted further site visits, expanded certain sections to include additional portions of specific refuges as well as projects currently in development, and reformatted the document for clarity and ease of use.

In working to improve pedestrian safety and public transportation around the headquarters area of Don Edwards San Francisco Bay NWR, the scholar began by contacting the transportation planner at Alameda-Contra Costa Transit (AC Transit) responsible for the area around the refuge. While AC Transit did not commit to expanding transit service in the area, they did agree to clarify the transit signs around the refuge and make sure the stops for the current service were easily identifiable. They also requested additional data about pedestrian and cyclist activity in the area. As the refuge did not have the specific data requested by AC transit, the scholar collected the data over a three day period, a process that will be described in more detail in the section on Don Edwards San Francisco Bay NWR. As a result of the data collection, the scholar determined that far more people were biking and walking into the refuge than initially thought. The scholar then began looking for ways to improve safety on the high traffic road that leads into the headquarters area. This included searching for grant money that could start the process of creating a trail alongside the road and planning for a road safety audit that is now scheduled to begin in August 2013.

CONSTITUENCIES

Because the San Francisco Bay NWR Complex has refuge locations throughout the Bay Area, along the California coast, and on islands in the Pacific Ocean, the constituencies for each refuge location are different. The following section will briefly address the constituencies for each of the refuges and the roles they play in the transportation system.

Don Edwards San Francisco Bay NWR

As the largest refuge in the complex, this refuge has the most complex group of constituents. The refuge has land bordering the cities of Fremont, Newark, Milpitas, San Jose, Sunnyvale, Palo Alto, Redwood City, and Mountain View (see Appendix 2 for a map of the different areas of Don Edwards San Francisco Bay NWR). These city governments manage and maintain the roads that border the refuge, in some instances have their own trail systems that connect with refuge trails, and work with refuge law enforcement in enforcing traffic rules and regulations. In addressing the safety issues around the headquarters area of the refuge, the scholar worked directly with the City of Newark in order to obtain their cooperation in organizing a road safety audit. In other instances, the scholar worked to identify and clarify city borders and the city agencies that managed bordering lands so that the appropriate agency could be contacted if an issue arose.

In addition to bordering a number of cities, the refuge is also adjacent to multiple transit systems. These include Alameda Contra Costa Transit (AC Transit), the Santa Clara Valley Transportation Authority (VTA), Bay Area Regional Transit (BART), CalTrain, the Altamont Commuter Express (ACE Train), Amtrak, and the Dumbarton Express Buses. The scholar worked directly with AC Transit, the transit agency that has stops near the headquarters area. The scholar entered into discussions centering on adding an additional stop near the refuge and worked with AC Transit to install new bus stop signs around the refuge that clarified existing stops. In the case of the other transit providers, the scholar documented their existing service, describing how it connected with various areas of the refuge and could be used by either the public or refuge staff.

Another active partner in helping improve transit connections to the refuge was the non-profit website transitandtrails.org. The scholar worked with this organization to clarify refuge information on their website, provide photos of the refuge's trails, and list refuge amenities for visitor's arriving by transit.

San Pablo Bay NWR

As a refuge that has added a number of properties over the past several years from land owners including both the U.S. Navy and local farmers, the constituency groups for San Pablo Bay NWR are numerous and complex. Rather than being directly involved in an evolving political landscape as various properties are turned over to the refuge, the scholar worked with the refuge manager and an engineer with a partner organization, Ducks Unlimited, in addressing transportation issues. The Ducks Unlimited engineer had worked with the refuge to develop a new road for safe access, and the scholar worked with him in locating areas for pedestrian and cyclist amenities.

Antioch Dunes NWR

The scholar worked with Antioch Dunes NWR staff to identify transit connections around the refuge that would allow volunteers, staff, and docent led groups to either take transit or carpool from major transit hubs. The scholar documented the possible transit connections to the constituent transit agencies of the Eastern Contra Costa County Transit Authority (Tri Delta Transit), Amtrak, and Bay Area Rapid Transit (BART).

Marin Islands NWR

As the Marin Islands are closed to the public, the primary constituents for transportation concerns are the staff and volunteer groups that visit the islands. The scholar met with representatives of these groups to discuss their concerns in using the refuge trails and travelling to and from the refuge by kayak.

Ellicott Slough NWR

Ellicott Slough NWR is closed to the public and as a recent acquisition is relatively undeveloped. The scholar worked directly with the refuge manager for Ellicott Slough to discuss issues related to staff parking around the areas where employees are currently doing work. The scholar also discussed with the refuge manager the potential for opening the refuge to public visitation in the future.

Salinas River NWR

The transportation issues related to Salinas River NWR involve the refuge itself for the management of its parking lot and trail issues and the local agricultural business that owns and maintains the only access road to the refuge. The scholar worked directly with the refuge manager to identify the transportation problems related to Salinas River NWR.

Farallon Islands NWR

The Farallon Islands are closed to the public but because of their remote location 28 miles off of the San Francisco coast, they have a complicated transportation environment. Usually charter boats bring employees and volunteers out to the islands, but private helicopter companies must be used in certain situations. The systems for moving people and goods on, off, and around the islands undergo heavy stress due to the harsh weather conditions and are in constant use as the island is occupied by various groups throughout the year. The scholar consulted with refuge staff working on the islands in order to identify the specific transportation problems associated with the Farallon Islands.

RECOMMENDATIONS

The scholar made a series of specific recommendations for transportation improvements around each of the refuges in the complex. These recommendations were collected and detailed in a transportation evaluation produced by the scholar and provided to the refuge. The following section describes the key aspects of the recommendations for each of the refuges in the complex (see Appendix 3 for a table summarizing the recommendations across all of the refuges).

Don Edwards San Francisco Bay NWR

Don Edwards San Francisco Bay NWR receives most of its visitors at two separate locations – around the area in Fremont that serves as the headquarters for the refuge complex and at the Environmental Education Center (EEC) located near the community of Alviso in the city of San Jose. Because these two primary visitation areas are located in separate cities and have very different transportation challenges, both the transportation evaluation and this final report consider them separately.

Headquarters Area

Because of its size, high levels of visitation, and proximity to urban development, the headquarters area of Don Edwards San Francisco Bay NWR received a relatively large amount of attention in the transportation evaluation and a number of key recommendations were made for the area. These are described in the paragraphs that follow.

When the scholar arrived and initially examined the public transportation near the refuge, he found that the AC Transit bus stops were not properly marked. Two signs had route numbers that were no longer legible. One sign had been placed directly behind a speed limit sign and could not be seen from the sidewalk. Another sign was located where the bus no longer stopped. The scholar recommended that the refuge work with AC Transit to correct the problem and was given permission to begin discussions with AC Transit about replacing the signs. When informed, AC Transit acknowledged the errors and agreed to install new signs in the correct locations with the correct route numbers. AC Transit completed the installation of the new signs in December 2012.

Another major recommendation for the headquarters area involved improving safety for pedestrians, cyclists, and transit users arriving at the refuge from the surrounding community. After arriving on the site, the scholar completed three days of data collection. With the help of refuge volunteers, the scholar spent two weekend days and one weekday at the refuge entrance, counting every person who arrived and noting whether they arrived by walking, biking, or driving (see Appendix 4 for a summary of

the data from all three days). This data collection showed that a large number of people were walking into the refuge from the surrounding neighborhoods. The streets immediately surrounding the refuge, however, have no pedestrian infrastructure and heavy car traffic.

In order to address this problem, the transportation scholar took the initial step of applying for a Paul S. Sarbanes Transit in Parks FY2013 Transportation Planning Grant to study the feasibility of constructing a trail along the busy road leading into the refuge [see Appendix 5 for the complete grant application]. Although that project did not receive funding, the idea for a trail led to working with the city to conduct a road safety audit. That project is currently in the planning stages and will be conducted in August 2013, as described in the Next Steps/Implementation section.

Although transit to the headquarters refuge is not ideal, it does exist. While the transit near the refuge was not considered accessible enough to promote on the refuge's own website, a Bay Area website called Transitandtrails.com specializes in providing accurate transit information to people who want to take transit to enjoy nature even if the transit conditions are not always ideal. The scholar worked with the website administrators to create an accurate profile of the refuge on the webpage. This included adding photos of the area, listing the specific amenities the refuge provided that might be helpful for someone travelling by public transportation, and providing a description of the hiking trails available.

The scholar also made some employee-related transportation improvements. When the scholar arrived, the refuge had several interns living on site that wanted access to a bicycle for local trips but did not want to purchase one for their short stay on the refuge. The scholar discovered that several old bicycles were scattered around the housing area but were not in proper working condition. Because they only needed some basic repair and maintenance, the scholar recommended these bicycles be repaired and made available to interns. The scholar's supervisor on the refuge agreed and approved a small budget for the repair of the bicycles. The scholar completed the repairs himself and by October of 2012 the refuge had four working bicycles available for use by interns and refuge staff.

In addition to repairing refuge bicycles for intern use, the scholar also set up a basic bicycle repair and maintenance kit at the Visitor Center. As cyclists must travel through the headquarters area of the refuge in order to cross the bay using the Dumbarton Bridge, the refuge has consistent bicycle traffic. Many of these cyclists already stop at the refuge in order to refill their water bottles and use the restrooms. Providing basic bicycle repair equipment inside the contact station could help build relationships with those who travel through the refuge regularly and make them aware of the refuge as more than simply a stopping point. The scholar purchased a hex wrench set, basic chain

tool, tire levers, patches, and a standing bike pump. These tools will allow cyclists to fix flat tires and make simple emergency repairs. The tools are available via a basic check-out system in which the person leaves behind a credit card or ID card in exchange for the tools and has the card returned upon return of the equipment.

In addition to providing repair equipment for cyclists, the scholar worked to improve safety for cyclists, pedestrians, and drivers at a specific conflict point on the refuge. During a staff meeting, a maintenance worker complained that vehicles were exiting the employee parking lot at too high of a speed. The problem was described as having been going on for years with repeated complaints not resulting in any changes in behavior. The employee expressed concern that a vehicle leaving the lot would injure a cyclist or pedestrian exiting a nearby trail. The maintenance staff proposed shutting down one of the exits to the parking lot entirely in order to solve the problem. The scholar suggested clarifying the right of way in the employee parking lot by painting a stop line at the exit. The stop line would not only reduce the speed of cars exiting the lot, but reorient the cars exiting in a way that would clarify the right of way on the road. Without the perpendicular line drawn across the lot exit, vehicles were exiting the lot on a curved path that allowed them to build up speed as they exited. Defining the exit as a ninety degree turn provided an additional means of slowing down vehicles exiting the lot (see Appendix 6 for photos of the parking lot before and after the addition of the stop line).

Environmental Education Center

As Don Edwards San Francisco Bay NWR wraps around the southern end of the San Francisco Bay, it contains multiple access points. After the headquarters area, the entrance with the highest level of visitation is the EEC, located near the community of Alviso in the city of San Jose. While the headquarters area is adjacent to multiple large suburban developments, Alviso is a community of a few thousand people separated from the rest of the city of San Jose by a large interstate. Alviso transit service consists of a single bus line that runs irregular service on weekdays only. The nearest stop requires a walk of over a mile to reach the refuge entrance. As school groups often have a difficult time paying the transportation costs of taking school buses out to the refuge, the refuge hoped that transit service could be improved and become a reasonable option for visiting school groups. Improved transit service, however, is unlikely due to the low level of ridership for the current service. The scholar recommended the creation of a school bus fund that would allow low income schools to apply for funding to cover their transportation costs. The scholar applied for and received \$1,500 from a Connecting People with Nature grant as well as another \$1,500 from the regional office (see Appendix 7 for complete grant application). This funding paid the transportation costs of field trips to the refuge for six low income schools.

In addition to the challenge of bringing school groups out to the refuge, conversations with refuge staff at the EEC revealed a problem with wayfinding for cyclists leaving the refuge trails. The refuge trail system in the area allows cyclists to enter at the Alviso Marina and exit at the EEC. The staff consistently receives questions from cyclists about how to return to Alviso and the city of San Jose from the refuge as well as questions about places of interest within the community of Alviso. When the scholar arrived, refuge staff were using an old photocopied AAA map in order to direct cyclists. The scholar recommended creating a new map that clearly showed the Alviso street system, providing a complete listing of local businesses, and provided a basic outline of the refuge trail system. The scholar used refuge GIS files and several site visits in order to complete the map. The map was created in black and white in order to be easily photocopied and to reduce the costs associated with color printing (see Appendix 8 for the updated Alviso area map).

During the scholar's tenure, part of the refuge in the Alviso area was restored to wetlands. This changed the trail system for the area and a new panel map needed to be created for trail users at the entrance to the refuge. The scholar used GIS and photoshop to match the colors from the previous map and made the necessary changes. The new panel was installed February 2013.

San Pablo Bay NWR

The entrance to San Pablo Bay NWR is located along a road with heavy traffic travelling at high speeds. The road does not have a turning lane for entering the refuge offices. Because of the safety concerns that this presents, the refuge has developed a plan for creating a new access road that allows visitors to enter from the nearest signalized intersection (see Appendix 9 for a diagram of the proposed road). The scholar worked with the road design engineer to determine the placement of pedestrian and cyclist amenities along the new access route. Construction is expected to begin as soon as all of the necessary approval processes have been completed.

The refuge also has several trail systems that are in poor repair. One of these trails has an entrance from the same high traffic road as the refuge offices and has the same access issues as the offices. The scholar photographed and documented the safety issues and included them in the transportation evaluation created for the refuge.

Antioch Dunes NWR

While Antioch Dunes NWR is located outside the major urban centers of the Bay Area, it is located near several major public transportation routes. The scholar documented the public transportation options for reaching Antioch Dunes NWR and made recommendations for using the nearby public transportation hubs as pick-up points for group trips to Antioch Dunes NWR.

Marin Islands NWR

Marin Islands NWR is closed to the public but does receive visitation from employees and volunteers. The island contains a small trail system but there is no formally developed transportation infrastructure on the island. Those travelling to the island arrive by kayak. The transportation scholar spoke with an employee and volunteer that travel regularly to the island. They expressed satisfaction with the current conditions but stated that, in travelling to the island, two single person kayaks were always preferable to one two person kayak. They stated that a single person kayak was much easier to maneuver. The scholar recommended that only single person kayaks be purchased when kayaks are replaced.

Elicott Slough NWR

Elicott Slough NWR is currently closed to the public. The refuge consists of several separate land areas surrounded by private property. The area does not currently contain any trails or transportation infrastructure. Parts of the refuge may undergo consideration for opening to the public and the scholar may assist with this process as part of the work extension into the 2013-2014 transportation scholar year.

Salinas River NWR

The only entrance to Salinas River NWR is located at the end of a private road that is in poor condition. Both sides of the road consist of active agricultural land and the road is regularly used by heavy farm equipment. The agricultural enterprise has posted signs that forbid trespassing and do not reference the agreement with the refuge to allow visitors to use the road in order to reach the parking lot and trail system of the refuge. The dirt parking lot of the refuge can hold approximately fifteen cars. The surface of the lot has been severely warped and is in the same poor condition as the road. The scholar recommended that the refuge meet with the agricultural company to clarify the no trespassing signs along the road and to discuss the potential for working together to improve the condition of the road leading the refuge and the refuge parking lot.

Farallon Islands NWR

The Farallon Islands are located 28 miles off the coast of San Francisco. Their remote location combined with the severe weather conditions on the island result in high costs for transportation to and from the island and high maintenance costs for the transportation infrastructure on the island.

The high transportation costs are a result of using charter boats to take volunteers to and from the island. The size of the boat rented varies based on the equipment and number of personnel travelling there. Sometimes a larger boat than necessary is rented because of the limited number of charter boats available at any given time.

Consideration has been given to the refuge purchasing their own boat. This would require a federal employee with all the necessary certifications to pilot the boat. Because the Farallon Islands do not have any place to dock a large boat, the employee could not actually stay to work on the islands but would have to make two separate trips for picking up and dropping off staff. The cost of purchasing and maintaining a boat combined with the cost of an extra staff member may be more expensive than relying on charter boat rentals. The scholar recommended that the refuge perform a cost benefit analysis to determine the best course of action for the refuge.

The other transportation issue associated with the Farallon Islands is the high cost of maintenance for transportation equipment on the island. All structures on the island receive constant exposure to high winds and salt water, resulting in much higher maintenance costs for equipment than other refuges in the complex. In particular, the crane which loads equipment onto the island requires frequent maintenance. The scholar recommended that a cost benefit analysis be performed that compares the costs associated with maintaining the current crane to the cost of purchasing a new crane that is more weather resistant than the one currently in use. Many of the other components that help people and equipment move around the islands – including the zip line that connects two sections of the main island and carts that are used to roll equipment to the housing quarters – are in need of new components and general maintenance. The scholar recommended that all of the transportation equipment on the island be documented along with a detailed description of its maintenance needs in order to create a priority list for maintenance expenditures on Farallon Islands NWR.

NEXT STEPS / IMPLEMENTATION

The tenure for the current scholar has been extended to the following year, allowing the scholar to work towards implementing some of the recommendations included in the transportation evaluation. The scholar will focus the majority of his time on projects related to the two sections of the Don Edwards San Francisco Bay NWR. The highest priority remains improving the safety of cyclists, pedestrians, and transit users coming into the Don Edwards San Francisco Bay NWR headquarters area from Thornton Avenue.

The next step in addressing this issue will be conducting a road safety audit. In early August, a transportation professional is scheduled to visit the site and work with the scholar to identify concrete measures that can be taken to improve the safety of the area. The preparation for the road safety audit will begin in June, with the scholar both collecting data and analyzing data provided by the city. The data will include the accident history for the particular road section, its traffic volumes and level of service, and the number of pedestrians and cyclists that use the road. The safety audit itself will be a collaborative process, and will involve working directly with staff from the City of Newark, the Newark Police Department, and refuge law enforcement. The audit will take place over a two day period with all the stakeholders sharing their experience and contributing ideas for how to make the road leading to the refuge entrance safer. The goal is to come out of the process with specific steps that can be taken to improve the area and with a commitment from the city to work with the refuge to implement the recommendations.

Beyond the road safety audit, the scholar will work on implementing other specific projects from the transportation evaluation as funding becomes available. Less expensive projects, such as providing bicycle parking for the intern housing area and improving the striping in the Don Edwards San Francisco Bay NWR EEC parking lot, are ready for implementation. The scholar will work with refuge staff to complete these projects. The scholar will also look for funding sources for other larger scale projects, such as the bus fund for the EEC. The transportation evaluation created by the scholar will also serve as a guide for moving forward with specific projects at each of the refuges in the complex.

CONNECTION TO WIDER TRANSPORTATION COMMUNITY

During the scholar's tenure at the refuge, the larger transportation problem of developing adequate pedestrian, cyclist, and transit infrastructure in rural and suburban areas arose. This issue is not unique to the refuge complex as areas outside the dense core often have infrastructure that strongly favors travel by car. When working towards obtaining better transit service for Don Edwards San Francisco Bay NWR, the fundamental problem was not one of refuge visitation or infrastructure concerns around the refuge, but rather that the refuge exists in a suburban area with high levels of automobile ownership and low levels of transit ridership. The local transit agency was simply not willing to expand service in an area with extremely low ridership when its budget problems were requiring cutbacks to service on overcrowded lines in the urban core of Oakland where most of its service is concentrated.

While the built environment of the suburbs and rural areas can be changed to provide better support for users of alternative transportation systems, the process will take some time and is beyond the mission of the public lands. The scholar's work did demonstrate, however, that public lands can take concrete measures to improve their immediate environments to be more supportive of alternative transportation systems. These steps include the following:

- Working with local transit agencies to ensure that the existing public transportation routes are clearly designated and easy for public land visitors to find and use
- Ensuring that public land managers have accurate information about alternative transportation systems in the area around the public lands and that those in contact with the public are able to share this information with visitors
- Working with surrounding public agencies as active stakeholders and providing constructive input to proposed changes to alternative transportation systems around the public lands

While these steps do not guarantee that public lands will see an expansion in alternative transportation systems in their area, they can ensure that the area receives the greatest possible benefit from existing systems.

THE PUBLIC LANDS TRANSPORTATION LANDSCAPE

Transportation planning in a Federal public lands environment is quite different than the work that a student coming out of a transportation planning program would be likely to initially find. The scholar's previous work involved providing support to other transportation planners within a large transportation planning agency. Individual staff may have had differing perspectives on particular debates within transportation planning, but these occurred within a common framework of concepts and language. In a public lands setting, the staff that the transportation planner interacts with are likely to have different specialized training than the scholar. The scholar may likely be the only individual in their work environment with training specifically in transportation planning. As a requirement of the scholars program is that the applicants be recent graduates, the scholar is in the position of being new to the field in relation to other transportation professionals but potentially regarded as an expert in the field by co-workers without transportation planning experience. Having the awareness that the expectations for what the scholar can accomplish may be higher than what the scholar can practically achieve during the tenth month tenure, and being able to openly discuss what can be accomplished within the framework of the program, can be helpful in resolving any problems.

Another substantial difference with transportation planning in Federal public lands centers around issues of ownership and control. Much transportation planning work involves either working for a public transportation agency or being contracted through a private agency to do transportation planning work. Many of the changes that could be made to improve alternative transportation systems on and around the public lands are not under the jurisdiction of the public lands. The public lands scholar's goal in these instances becomes less one of creating effective transportation plans and more a matter of assisting existing refuge staff in becoming a more effective stakeholder in the transportation decisions being made in their area.

CASE STUDY FOR FUTURE PUBLIC LANDS TRANSPORTATION SCHOLARS

From the perspective of my experience as a scholar within the program, I have enjoyed my time working with the refuge complex. Even though my funding came from sources outside the refuge complex, I was always treated as a regular member of the staff. I attended staff meetings, was invited to major refuge events, and lived in the employee housing area. Refuge staff members were always ready to assist me in finding particular documents and made time to discuss areas of the refuge that I was unfamiliar with. During my first months at the refuge, I took time to explore the area and went on a boat trip out to the Farallon Islands NWR, 28 miles off the San Francisco coast. While I enjoyed having this time to learn the area, I was not sure if it would relate directly to my transportation work. Later on, I realized the value of the time I spent becoming familiar with all of the different visitation areas and land holdings of the refuge complex. The site visits help me contextualize the problems discussed with refuge managers. The trips taken with refuge staff helped me develop relationships with different parts of the refuge complex and helped me form a network of contacts to provide answers to questions and help me solve problems.

I also enjoyed working with the other scholars and attending TRB with them. Even though our work sites were located across the country and the specifics of our projects differed considerably, the goals and framework for all of our projects were the same. The monthly phone calls provided a network of transportation professionals that understood the specifics of public land concerns. Attending TRB and seeing the work the other scholars had done gave me ideas for my own project and allowed me to discuss my work with people who were facing similar challenges. By providing an opportunity to meet with transportation professionals from all of the various public lands, I was able to fit my own work into a larger context.

PROFESSIONAL DEVELOPMENT

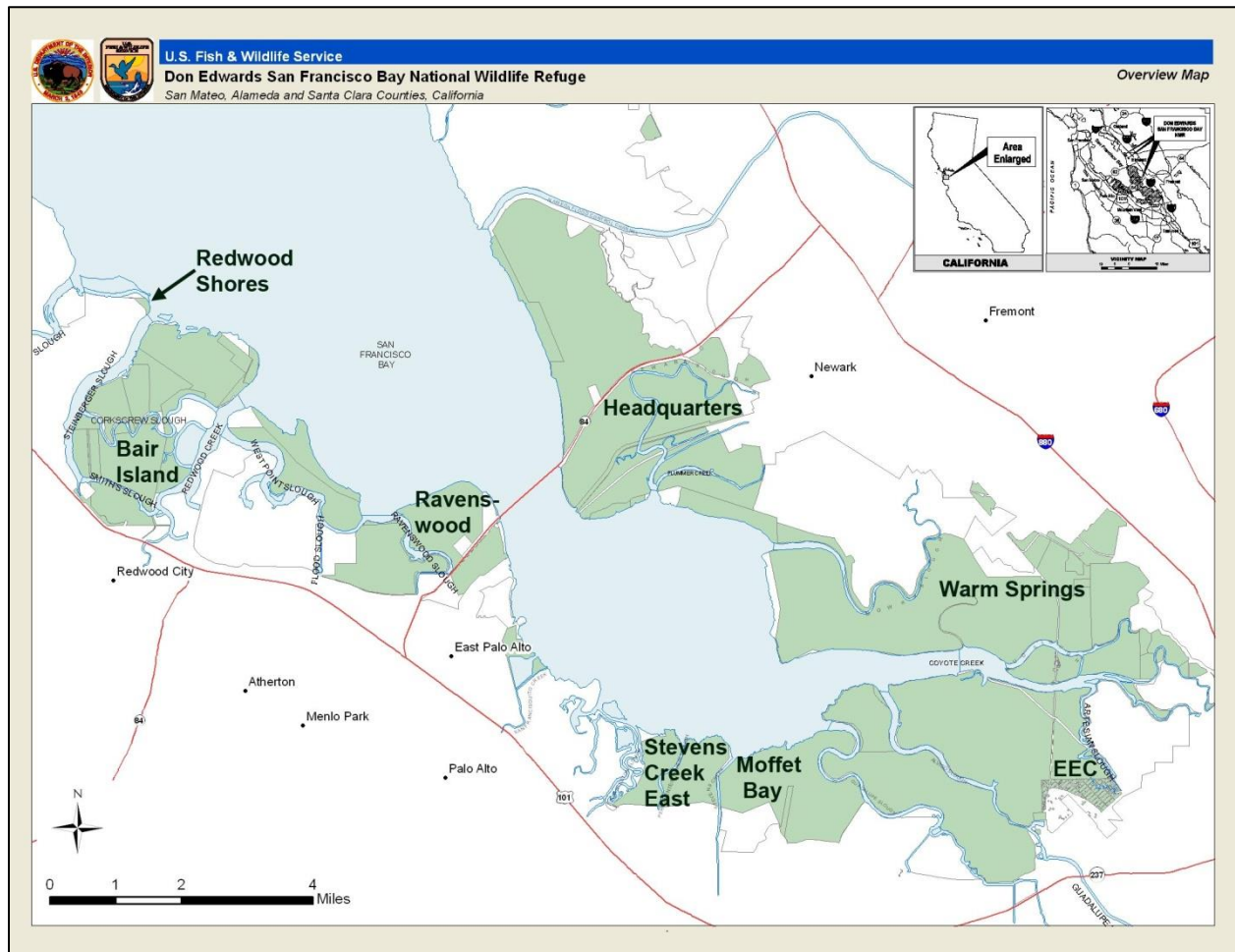
In my previous transportation planning jobs, I had worked as support staff on projects. I was given small, discrete work tasks as necessary to complete a larger project being overseen by someone several levels higher than me in the organization. While I had a mentor and supervisor for the projects I worked on with the scholar's program, I had a much larger responsibility for managing the project as a whole than I have had with previous work. I had to manage the schedule for the project and decide which areas to prioritize. In previous work, if I did not know how to complete a particular GIS task or was not familiar with a particular transportation planning topic, the work would be given to another employee. With my work at the refuge complex, there was not another transportation planner on site. I had to develop my existing skills in order to complete the project. My GIS skills improved dramatically, particularly my ability to make edits within existing maps. I also improved my ability to work with Photoshop to edit maps made in GIS. Beyond the technical skills, I consider learning how to prepare and submit grant applications one of the most important things I learned during the program. Every project requires funding to complete and I know that understanding the process for applying for grant funding will prove valuable in future positions.

Although I enjoyed having the responsibility of managing my own project, being the only transportation planner in my office was also a challenge in some respects. In my previous work, I shared an office with other transportation planners and that helped me make lasting professional connections and stay current on what was happening in the field. Because I am the only transportation planner at the refuge and because the location of my work and housing require me to travel some distance to professional events, I have to make an active effort to travel up to the city for events and maintain my professional connections. When I do attend planning events, people are always interested in the work I am doing and I am hopeful that my experience at the refuge will lead to a permanent planning position in the region when my time as a transportation scholar is over.

APPENDIX 1: SAN FRANCISCO BAY NATIONAL WILDLIFE REFUGE COMPLEX MAP



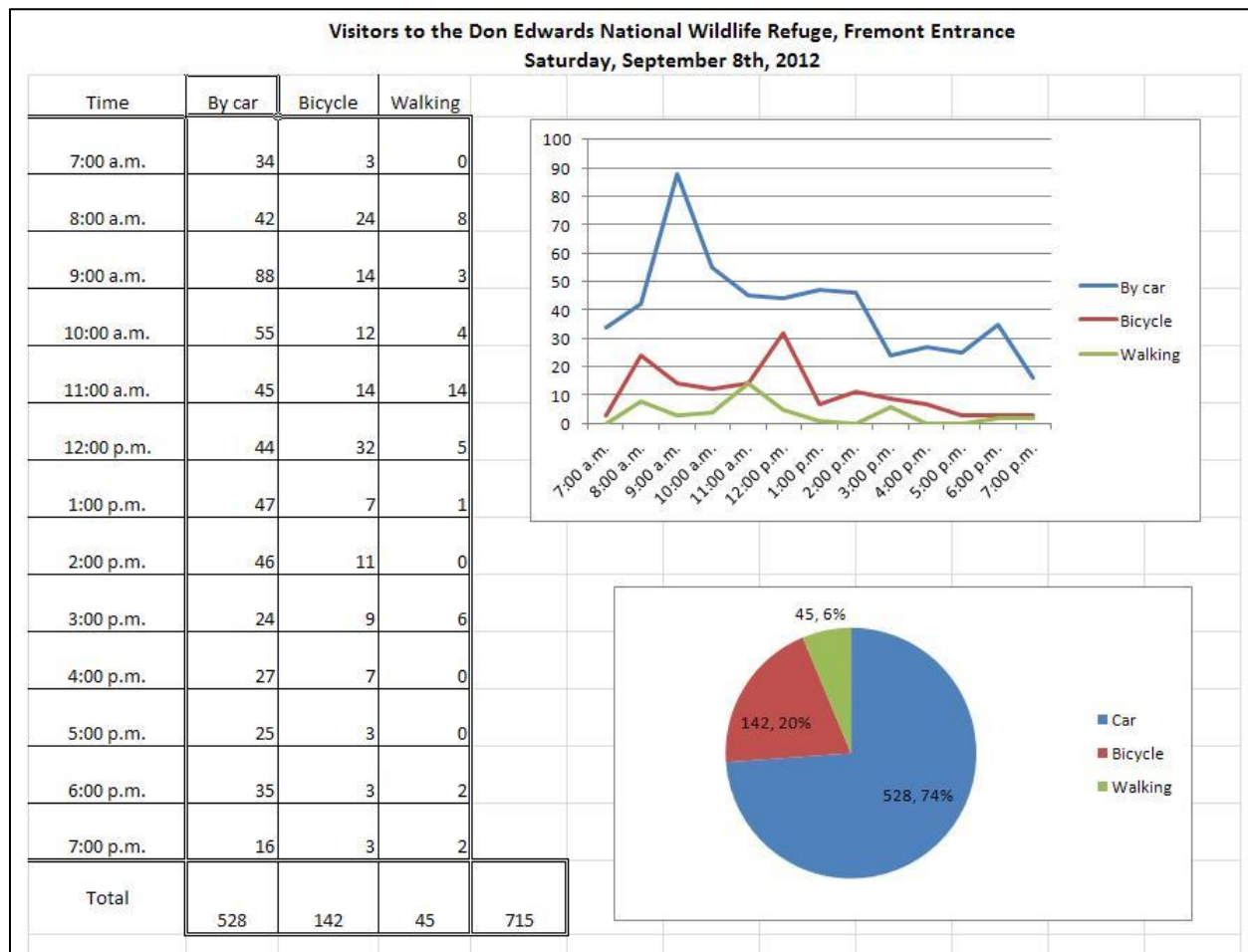
Appendix 2: San Francisco Bay National Wildlife Refuge Complex Map

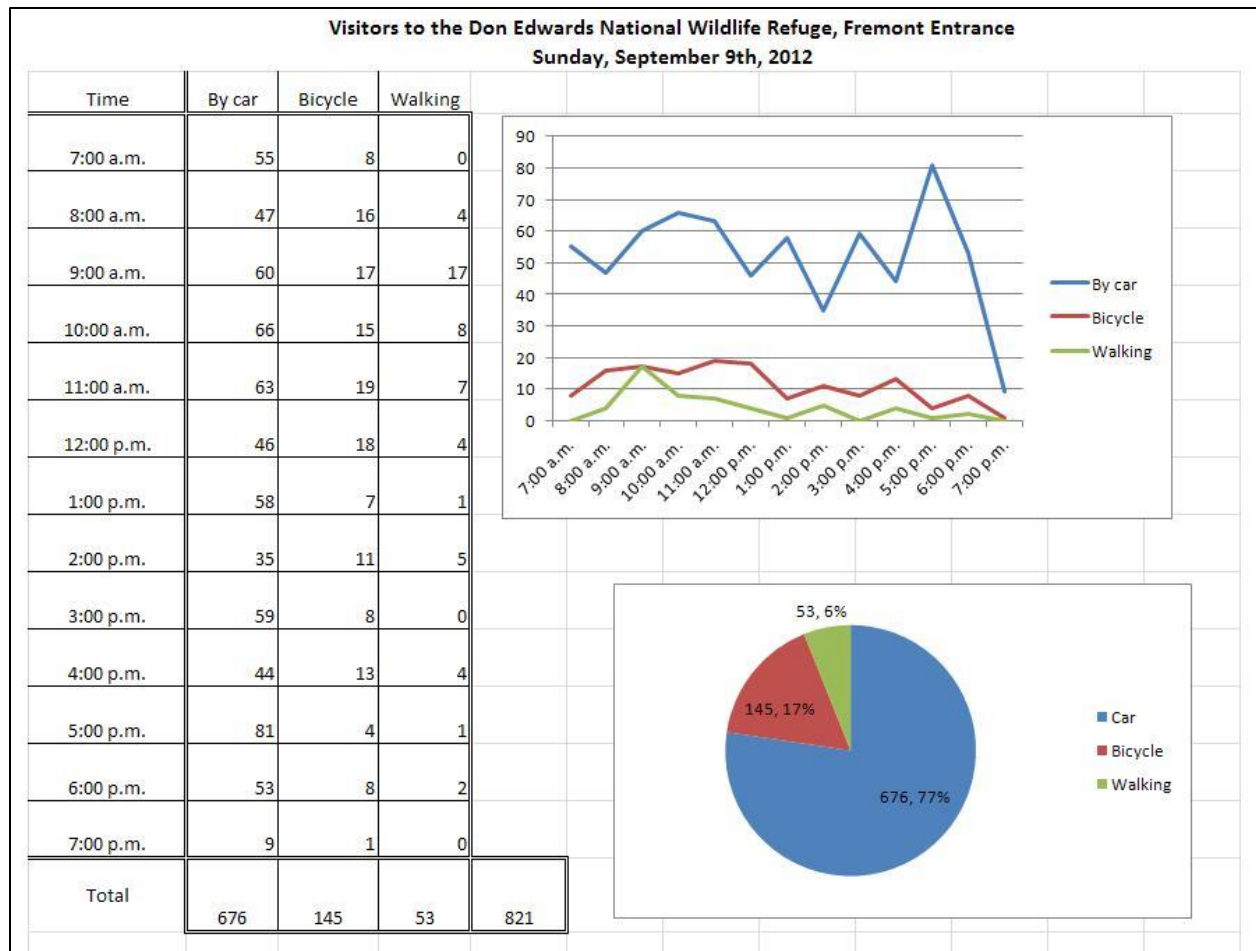


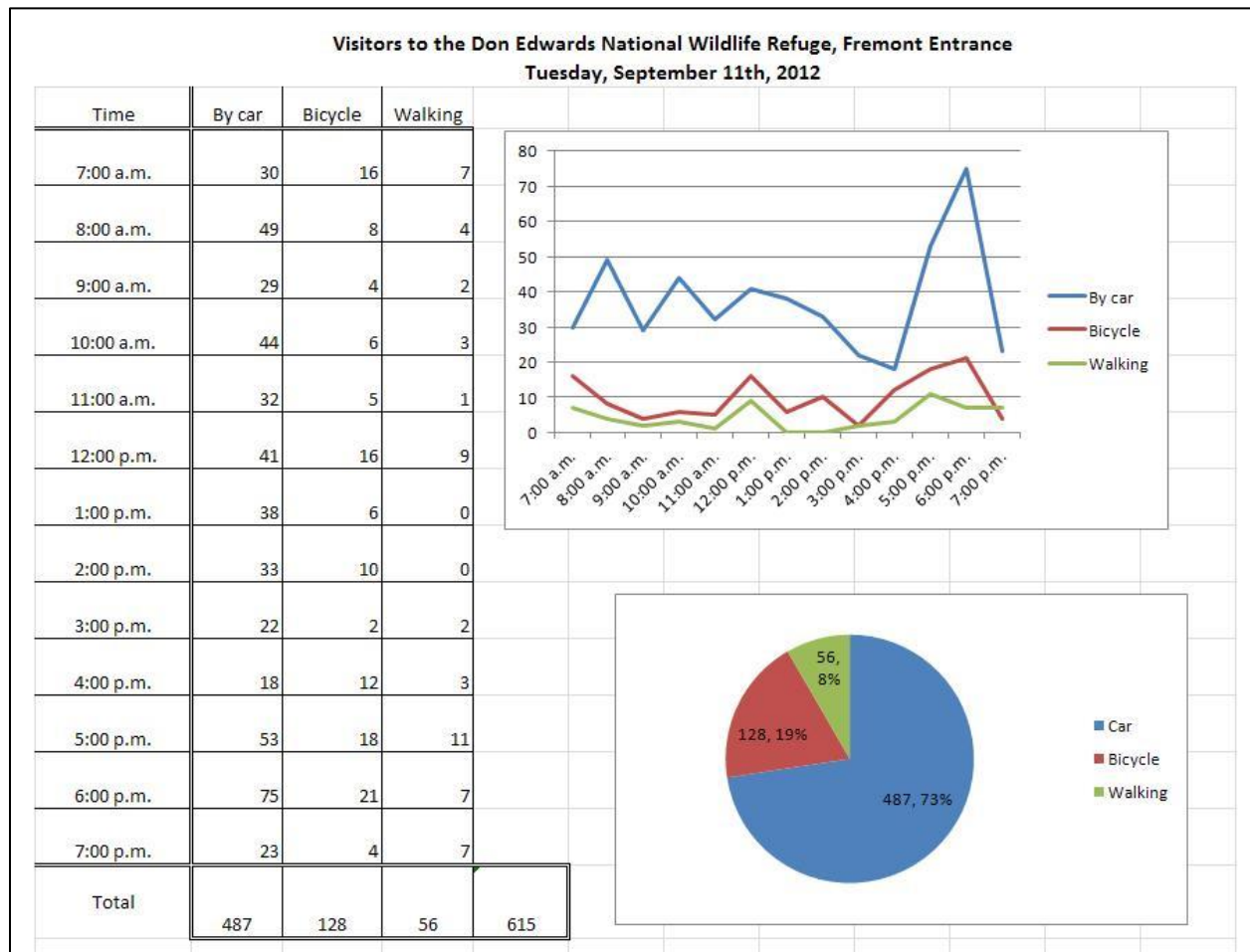
Appendix 3: Summary of Challenges by Refuge

Don Edwards San Francisco Bay NWR - Headquarters Area
Primary Challenges and Opportunities
<ul style="list-style-type: none"> • Improving public transportation to the refuge • Improving pedestrian access to the refuge
Don Edwards San Francisco Bay NWR - Alviso Area
Primary Challenges and Opportunities
<ul style="list-style-type: none"> • Addressing travel barriers to group visits • Improving access to the Marina area refuge trails
San Pablo Bay NWR
Primary Challenges and Opportunities
<ul style="list-style-type: none"> • Providing safe access to the refuge offices • Improving the Tolay Creek-Lower Tubbs Island entrance & roads
Antioch Dunes NWR
Primary Challenges and Opportunities
<ul style="list-style-type: none"> • Promoting awareness of public transportation to the refuge
Marin Islands NWR
Primary Challenges and Opportunities
<ul style="list-style-type: none"> • Increasing the level of safety for those working on the island
Elicott Slough NWR
Primary Challenges and Opportunities
<ul style="list-style-type: none"> • Providing safe parking for employees • Creating transportation options if the refuge opens to the public
Salinas River NWR
Primary Challenges and Opportunities
<ul style="list-style-type: none"> • Improving access to the refuge for visitors and employees
Farallon Islands NWR
Primary Challenges and Opportunities
<ul style="list-style-type: none"> • Reducing transportation related maintenance costs on the islands • Providing reliable boat access to the islands

Appendix 4: Don Edward San Francisco Bay NWR Headquarters Area Visitor Count Data Summary







Appendix 5: Transit in Parks Program Planning Grant Application

U.S. Department of Transportation

Federal Transit Administration

Paul S. Sarbanes Transit in Parks Program (Transit in the Parks Program)

Planning Project - Proposal for Fiscal Year 2012 Funds

BASIC PROJECT INFORMATION

Project Name: Fremont Refuge Entrance Pedestrian and Cyclist Access Trail: A three tenths of a mile trail that will close a gap to pedestrian, cyclist, and public transportation access to the Fremont entrance of the Don Edwards San Francisco Bay National Wildlife Refuge.

Proposed Funding Recipient: U.S. Fish and Wildlife Service

Public land unit(s) involved:

Don Edwards San Francisco Bay National Wildlife Refuge

Location of Project

City: Fremont

County: Alameda county

State: CA

Congressional District: 13

Federal Land Management Agencies managing the above unit(s):

☐ Bureau of Land Management

x U.S. Fish and Wildlife Service

☐ U.S.D.A. Forest Service

☐ National Park Service

☐ Other (e.g. Federal Trust)

If Other, describe:

Type of Planning Project:

(For capital projects, please use the alternate form)

X Data Collection, Analysis

X Analysis of Transportation Alternatives

X Environmental Planning (NEPA)

☐ Operational Planning

☐ Other (e.g. Financial Planning)

If Other, describe:

☒ Proposal is to plan for a possible new alternative transportation system where none currently exists.

☐ Proposal is to plan for a possible enhancement of an existing alternative transportation system.

Transit in Parks Program Funding Requested

\$280,000

Total Cost of Planning Project at Completion

\$280,000

Were you awarded Transit in Parks Program funds for this project in the past? ☐ Yes ☒ No

Is the project or amount of funding requested scalable? ☒ Yes ☐ No

Is funding available from sources other than Transit in Parks Program funds? ☐ Yes ☒ No

CONTACT PERSON

Name: Jennifer Heroux

Phone: (510) 792-0222 ext. 139

Position: Chief of Visitor Services

E-mail: jennifer_heroux@fws.gov

Address: 1 Marshlands Rd., Fremont, CA 94555

OTHER PROJECT SPONSORS (in addition to funding recipient)

REQUIREMENTS

☐ If a State, Tribal, or local government entity is proposing the project, the applicant is submitting a letter of support from the Federal land management agency or agencies affected.

X The project is consistent with the metropolitan and statewide planning process.

X The project is consistent with agency plans.

X The planning project will analyze all reasonable alternatives, including a non-construction option.

BASIC PROJECT DATA

Number of Visitors (Annual – Fremont Entrance Only): 240,000

Daily Number of Visitors (Peak season – Fremont Entrance Only): 660

Average Number of Vehicles per Day at Peak Visitation: 300

Current Road Level of Service at Peak Visitation: Thornton Avenue (refuge approach road): LOS C

Marshlands Road (Fremont entrance refuge road): LOS A

What time of the year does your land unit experience Peak Visitation?

X Spring ☐ Summer X Fall ☐ Winter

Current Carrying Capacity of Existing Roads (if known): unknown

Current parking shortages during peak visitation: None

Current Number of Persons who use the alternative transportation system (if one already exists): 200 people/day walk or cycle to the refuge, despite unsafe conditions

Estimated Annual Number of Persons who will use the alternative transportation system at project completion: 68,000 per year

Average number of auto collisions with wildlife in the study area? 0 collisions/year

Executive Summary

Please provide an executive summary of your proposal that introduces the public land unit and/or applicant and summarizes the need for an alternative transportation planning grant. Please identify the intended use of the proposed study, and include any other information essential to the application. (500 words)

Don Edwards San Francisco Bay National Wildlife Refuge was the first urban National Wildlife Refuge in the United States. Established in 1974 and administered by the U.S. Fish and Wildlife Service, the refuge spans 30,000 acres of open bay, salt pond, salt marsh, mudflat, upland and vernal pool habitats located throughout south San Francisco Bay. Millions of shorebirds and waterfowl stop to refuel at the Refuge during the spring and fall migration. The refuge also provides critical habitat to resident species like the endangered California clapper rail and salt marsh harvest mouse.

Approximately 240,000 people visit the Fremont entrance to the refuge each year to enjoy its diverse wildlife and habitats. While the refuge has built and maintains an access road and three parking lots for those who arrive by private automobile, there is no equivalent infrastructure for people who choose to arrive by walking, cycling, or public transportation. A recent count at the Fremont entrance to the refuge showed that this latter group made up a full quarter of visitors. Those who walk or cycle arrive at the refuge by travelling along the shoulder of Thornton Avenue, a busy road with fast moving traffic. This route is not promoted by the refuge as it is not considered safe.

The primary hazard comes from a break in connectivity between the sidewalk system of the surrounding neighborhoods and the main entrance to the refuge. This gap is only three tenths of a mile and runs directly along refuge property. If the refuge built a trail that included a safe crossing from the end of the city owned sidewalk on Thornton Avenue to the entrance of the refuge, visitors could safely arrive by walking, cycling, and transit. Alameda-Contra Costa County Transit Route 251 stops approximately every half hour 0.7 miles from the refuge entrance. The completion of this trail segment would reduce that distance to 0.4 miles and allow for safe passage from the transit stop to the refuge. Further, the recently approval of the Dumbarton Transit Oriented Development, a neighborhood of 2,500 homes scheduled to start construction in January on the eastern border of the refuge, has increased the urgency for developing a safe pedestrian connection to the refuge entrance.

Although the trail and road crossing involve only a 0.3 mile section of the refuge, several challenges make careful planning essential. Thornton Avenue curves at the refuge entrance and the trail would have to incorporate a crossing from the existing sidewalks on the north side of Thornton Avenue to the main refuge entrance on the south side of the road. Further, the area on either side of Thornton Avenue consists of wetlands owned and managed by the refuge, and the trail would have to be constructed with minimal impact to this sensitive area.

Because the project area occurs in an endangered species habitat, a careful planning study is necessary to create a cost effective design that would balance the improvement of visitor experience with preservation of the refuge's wetlands.

Project Description

Please provide a detailed description of the proposed activities that would be funded with a Transit in Parks grant. This description must include cost estimates for each project component and must outline the scope, timeline, and proposed methodology of the proposed study. You may also attach additional maps, tables or illustrations. (500 words)

Project activities funded by Transit in the Parks financial assistance will primarily be conducted through contracts and agreements. These include:

Project Component	Methodology	Time Estimate	Cost Estimate
Complete a pedestrian safety audit of Thornton Avenue between the refuge and the neighborhoods	Use refuge staff and local agencies to complete a Road Safety Audit that evaluates the plan area	One Month	\$10,000
Undertake a formal Section 7 Consultation resulting in the issuing of a Biological Opinion on the effects of the proposed trail construction on endangered species.	Work with local and regional refuge staff to prepare a biological assessment in advance of the consultation	Eight months	\$50,000
Complete an accurate geotechnical survey of the proposed trail route identifying elevations, surface and subsurface materials, and potential road and stream crossings.	Contract with an engineering firm to survey the site and prepare a report.	Two months	\$60,000
Develop preliminary alternatives including routes, surface materials, and design of potential Thornton Avenue pedestrian crossings.	Contract with a bicycle and pedestrian transportation firm to prepare plan alternatives	Four months	\$80,000
Perform public outreach and hold a meeting to solicit feedback on the proposed alternatives	Contract with a bicycle and pedestrian transportation firm to prepare outreach and meeting materials	One month	\$10,000

Project Component	Methodology	Time Estimate	Cost Estimate
Finalize alternatives and designate a preferred alternative	Work together with the contractor and regional office to determine a preferred alternative	One month	\$20,000
Perform a NEPA analysis (cost estimate assumes an EA only)	Contract with a planning firm to complete a NEPA analysis	Three Months	\$50,000

Transit in Parks Program Planning Project Proposal Justification

Planning Project Evaluation Factors:

1. Demonstration of Need

Please describe the current and/or anticipated transportation concerns or opportunities for improvement that will be addressed by this project. Please identify issues that this project will address, relating to visitor mobility and access, visitor experience, and the protection of environmental and/or cultural resources. (250 words)

A transportation planner contracted through the Paul S. Sarbanes Transit in Parks Program has been working at the refuge from June of this year and has identified this project as a key component to improving alternative transportation to the refuge. A recent count of people entering the refuge showed that about 50 people walk into the refuge from the surrounding neighborhoods every day. Approximately 150 arrive every day arrive by bicycle. These visitors travel along the dirt shoulder of Thornton Avenue, a heavily trafficked two lane road, and then cross this road at a location without a signal, crosswalk, or warning signs. This route is not safe and the refuge does not promote it. The City of Newark, which maintains Thornton Avenue, has a project listed in the Alameda County Transportation Plan to widen the avenue, which could potentially result in the addition of sidewalks, but this project has not been identified as a high priority and is unlikely to be funded. If the refuge constructed a trail three tenths of a mile in length parallel to Thornton Avenue that included designs for a pedestrian road crossing, it would create a safe connection with the sidewalks, bike lanes, and transit system of the surrounding neighborhoods. This would allow the refuge to promote arrival by walking, cycling, and public transportation, increasing visitor mobility and access and improving visitor experience.

2. Visitor Mobility & Experience

Please describe how the planning project will address visitor mobility & experience. A successful project will consider issues relating to traffic congestion, visitor mobility and accessibility, safety, and visitor educational, scenic, and/or healthy recreation opportunities. (250 words)

Currently, people who wish to arrive at the refuge by walking, cycling, or public transportation have no safe way of doing so. Despite the danger of travelling along the shoulder of Thornton Avenue and making an unsupported crossing of this busy road near the entrance, an estimated 70,000 people a year still use this route when walking or cycling to the refuge. Creating a 0.3 trail parallel to Thornton Avenue that includes a design for a safe crossing will allow pedestrians, cyclists, and those arriving by the nearby public transportation safe access to the main entrance of the refuge, dramatically improving their visitor experience. Instead of having to focus on the dangers presented by oncoming traffic, they will be able to focus on the resources and mission of the refuge. The trail and crossing will create opportunities for people who currently want to visit the refuge but do not feel it is safe to do so. This would include people who are elderly, people with disabilities, and people dependent on transit. These groups are not likely to feel safe visiting the refuge without an automobile under the current conditions. Providing safe access would certainly result in an increase in the number and diversity of people walking, cycling, and taking transit to the refuge.

3. Environmental Concerns

Please describe how the planning project will address environmental issues. A successful project will consider issues relating to the management and protection of natural, cultural and historic resources

and the reduction of air, noise and visual pollution. This may also include improvements in energy conservation, habitat restoration, and other areas. (250 words)

The planning grant is necessary to determine how the project can be completed with the least amount of environmental impact. The proposed trail would run alongside the road adjacent to wetlands and would have to be built with the least impact possible to the wetlands and the endangered species that inhabit them. The trail and road crossing would allow people who live in the surrounding communities and currently drive to the refuge to have an alternative way of arriving. By reducing automobile traffic, the trail would reduce air, noise, and visual pollution around the refuge.

4. Operational Efficiency and Financial Sustainability

Please describe how the planning project will address the operational efficiency and financial sustainability of the existing or proposed transportation system. A successful planning project will consider the cost effectiveness of the proposed approach and the availability of future sources of funding. Please also identify any partnerships or sources of outside funding that will contribute to this project. (250 words)

Unlike a private shuttle system from the nearest public transportation stop to the refuge entrance, the short trail and road crossing would require a minimal amount of maintenance and operational funding. The refuge already manages several trail systems, and adding an additional three tenths of a mile of trails to the refuge property for the purpose of connectivity with the local community would not put an undue financial burden on maintenance staff.

Appendix 6: Stop Line Before and After

Before



After



Appendix 7: Don Edwards San Francisco Bay National Wildlife Refuge School Trip Transportation Fund Grant Application

Descriptive Project Title: *Don Edwards San Francisco Bay National Wildlife Refuge School Field Trip Transportation Fund*

Project Lead

Name: Genie Moore/ Jennifer Heroux

Field Station/Office: Don Edwards San Francisco Bay National Wildlife Refuge

Phone Number: 408-262-5513 ext. 100/ 510-792-0222 ext 139

E-mail: genie_moore@fws.gov/ Jennifer_heroux@fws.gov

Fax: 510-792-5828

Brief Description of Project and Need:

Provide a brief, 200 word maximum, description of the project and the need. If this is a one-time project, event or purchase, provide justification of the importance of the project in this section:

Don Edwards National Wildlife Refuge was established in 1974 as the first urban National Wildlife Refuge in the United States. The refuge borders several large cities, including San Jose, Fremont, and Union City. Many of the schools closest to the refuge, however, do not have the funding for school trips. By creating a fund to pay for the cost of a school bus and driver, the refuge can increase the number of local students that are able to visit the refuge and participate in the Wetland Round-up and Living Wetlands Programs. The fund will focus specifically on schools that do not have the necessary financial resources to visit the refuge. The fund will support the refuge's educational mission and better connect the refuge with its surrounding communities.

Target Audience:

Students at K-12 schools, with priority given to schools that have at least 40% of students qualifying for the free/reduced lunch program.

Objectives:

By the end of September 2013, five school groups will have participated in a school trip program at the refuge – two at the Newark Slough Learning Pavilion located at the

northern Fremont visitation site and three at the Environmental Education Center at the southern entrance of the refuge.

Methods:

Describe how you will develop and deliver your project to meet the stated objectives:

We will use our existing staff at the Fremont site and the Environmental Education Center to evaluate the applications and administer the program. We will provide information and outreach materials to teachers and school administrators at qualifying schools to encourage participation. We will create an application sheet that clearly describes how the bus transportation fund works and how applications will be evaluated. We will set up standards for reimbursing the school for the cost of transportation and establish a relationship with a private bus company that specializes in school trips if the school is not able to use its own buses.

Evaluation:

Describe how you will measure the success of your project using the evaluation methodology you developed with the Project Evaluation Worksheet.

This project's success will be evaluated by tracking the number of low-income schools that participate in the Wetlands Round-up and Living Wetlands program through use of the transportation fund. The program will be considered a success when all the funds have been used to bring students from low-income schools within the region to the refuge.

Timeline:

Provide estimated dates of project milestones:

December 2012 – Develop application materials and processes for the distribution of the transportation fund.

January-February 2013 – Conduct outreach at local schools and through the refuge website to inform teachers and administrators of the transportation fund.

March – September 2013 – Use the fund to bring school groups to the refuge.

October 2012 – Evaluate the program, looking at which schools made use of the funds and how many additional students came to the refuge.

November 2013 – Send final narrative report to NCTC

Budget:*Provide an itemized project budget:*

School bus rental and driver fee	5 x \$600 each	= \$3,000.00
		TOTAL = \$3,000.00

Project Selection Criteria Questions:

1. *How does this project work with others to engage/educate communities, schools, families and/or low participating groups?*

The project provides the funds necessary for schools that have not previously participated in refuge field trips or have participated in field trips in previous years but due to reduced school budgets will not be able to participate in a field trip this year. By helping to bring new local groups out to the refuge, the program will better integrate the refuge with the local community.

2. *How does your project support volunteers, interns, students or employees?*

The program will directly support students participating in refuge program activities. It will also help refuge employees achieve the mission of the Refuge by increasing participation in the Wetland Round-up and Living Wetlands Program. These programs provide an opportunity to educate youth about the Refuge's resource management objectives. Volunteers and Interns would be provided further experience working with youth.

3. *How does your project support regional Connecting People with Nature: Ensuring the Future of Conservation initiatives?*

The program brings students directly to the refuge to educate them about conservation principles. The resource management objectives of the Refuge are to educate youth about endangered species, migratory birds, wetland conservation, and pollution prevention.

4. Which of the following USFWS Priorities does your project support? How?

a. National Wildlife Refuge System: Conserving Our Lands

The programs that the transportation fund would support teach the importance of the National Wildlife Refuge System of land conservation.

b. Landscape Conservation: Working with others (State, local, and tribal partners)

By reaching out to the local community, the program would increase awareness of the refuge's mission and expand its local support.

c. Migratory Birds: Conservation and Management

The programs that the transportation fund would support discuss how wetlands support migratory bird conservation and management.

d. Threatened and Endangered Species: Achieving Recovery and Preventing Extinction

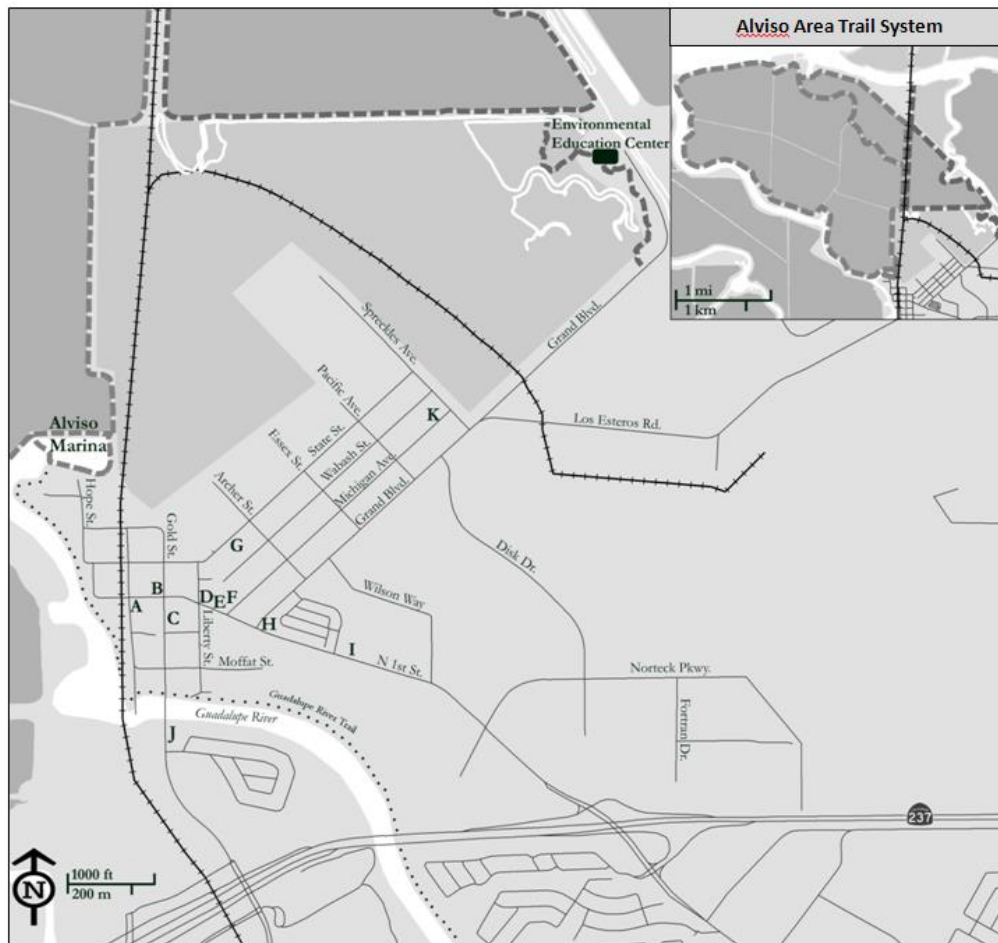
The programs that the transportation fund would support discuss the threatened and endangered species that live on the refuge and the efforts the refuge makes towards achieving recovery and preventing extinction.

e. Aquatic Species: National Fish Habitat Action Plan and Trust Species

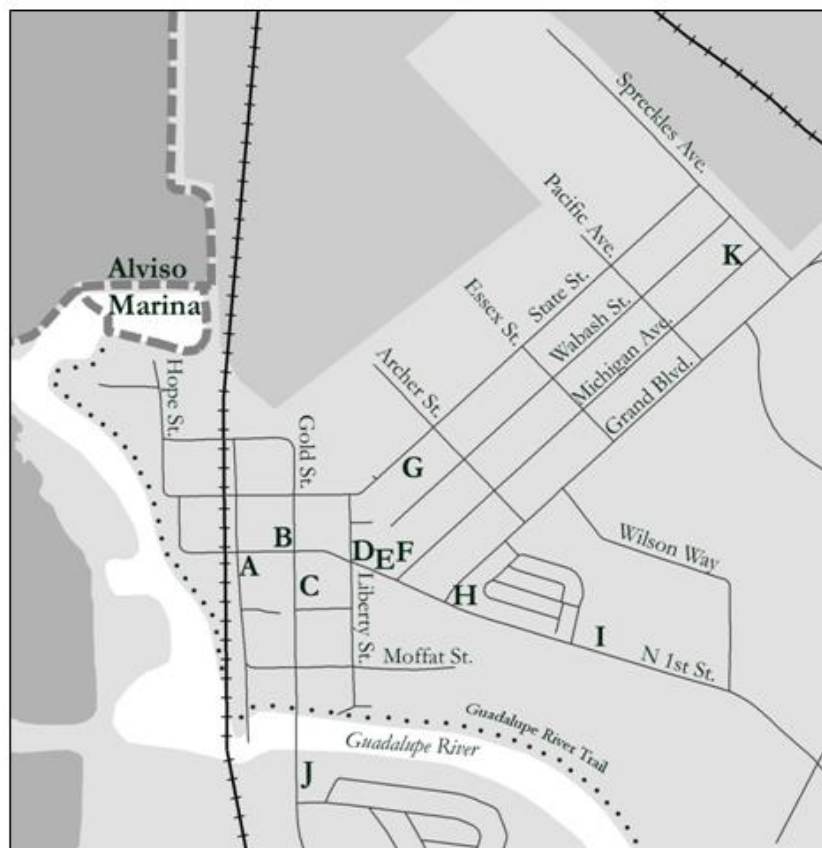
The programs that the transportation fund would support describe the species that the wetlands support, including fish.

Additional Funding Opportunities: *(Provide indicate whether your project could be completed later in 2013, if regional funds become available)*

School visits occur on a reoccurring basis and additional funding could always be used to support the transportation fund and increase the number of students able to visit the refuge.

Appendix 8: Updated Alviso Area Map**Alviso Area Map**

Central Alviso



Restaurants

A. Vahl's Restaurant

B. Maria Elena's of Alviso

D. El Taco de Oro

F. Lunch with Tony

H. Rosita's De Basilio Deli & Market

Markets

E. Mi Jalisco Market

G. Marina Market

K. R&F Convenience Store

Community Resources

C. Alviso Post Office

I. Alviso Branch Library

J. Gold Street Educational Center

Outdoor Exhibit

Appendix 9: San Pablo Bay NWR Access Road and Trail Plan

