

**GRANT APPLICATION FOR
THE FLOOD PROTECTION CORRIDOR
PROGRAM
BROWN FILL REMOVAL PROJECT
TIJUANA RIVER VALLEY
CITY OF SAN DIEGO
CALIFORNIA**

Prepared for:

State of California
Department of Water Resources
Earl Nelson, Program Manager
Flood Protection Corridor Program (FPCP)
Division of Flood Management
1416 9th Street, Room 1641
Sacramento, CA 95814



THE CITY OF SAN DIEGO

February 14, 2003

Prepared by:

City of San Diego Environmental Services Department

Resource Management Division
9601 Ridgehaven Court, Suite 210
San Diego, CA 92123-1636
Ph. (858) 492-5013, Fax (858) 492-5021

General Information

Project Name: BROWN FILL REMOVAL PROJECT

Project Location: Tijuana River Valley,

City of San Diego, County: San Diego

Name and address of sponsoring agency or non-profit organization:

City of San Diego Engineering and Capital Projects Department, Transportation and Drainage Design Division, 1010 Second Avenue, Suite 1200, San Diego, California 92101

Name of Project Manager (contact):

Patti Boekamp, Transportation and Drainage Design Division

Phone Number: (619) 533-3138, **E-mail Address:** PBoekamp@sandiego.gov

Grant Request Amount: \$ 2,721,500.00

Patti Boekamp,

Chief Deputy Director

Project Manager

Title

February 14, 2003

Date

PROJECT DESCRIPTION AND OBJECTIVE(S):

Briefly describe your Project and explain how it will advance FPCP goals. Please also include a detailed map of the immediate Project site and another that shows its location within your geographical area. Photographs showing problem areas proposed to be enhanced by the Project should also be included.

The Project site is located within the Tijuana River Valley, a FEMA special flood hazard area/floodway (see Fema Map) and regional wildlife corridor, in southern San Diego County (see Site Maps-Vicinity Map, Fig 1.) The Project site encompasses both private (Mrs. Brown) and County property where the Tijuana River received 16,000 cubic yards of unpermitted fill material in the attempt to construct a berm around and extend the Brown property following the 1980 winter floods (see Site Location Map and Photographs). The fill adversely impacted riparian habitat, obstructed river flows, caused major flooding hazards to adjacent properties, and may be responsible for some of the downstream sedimentation problems. Additionally, obstruction of approximately 48% of the river channel diverted the flood waters to a more northerly course, requiring the construction of a new bridge.

The City of San Diego, in partnership with the County of San Diego proposes to sample the fill material for hazardous components, remove the fill and reconstruct the floodway to minimize flood hazards and enhance the natural flow through the Valley by implementing flood protection measures and restoring the local riparian habitat. A flood protection plan and riparian restoration plan will be developed and implemented to remove non-native species, such as giant cane (*Arundo donax*), recontour the river banks and revegetate the area with native plant species. The project proposes to restore approximately twelve acres of riparian scrub/woodland and four acres of coastal sage scrub habitat. The elimination of non-native invasive plant species and the re-establishment of native plant communities will provide habitat for sensitive wildlife, such as the endangered least Bell's vireo, which occurs in the area.

FLOOD PROTECTION BENEFITS (340 points)

A. Existing and potential urban development in the floodplain (50)

1. Describe the existing and potential urban development at the site and the nature of the flood risk:

The Project site is located within an area designated as a Special Flood Hazard Area (SFHA) and as a "Floodway" by the Federal Emergency Management Agency (FEMA) as (see Fema Map). "Floodway" is that area defined by FEMA as: "The channel of a stream and any areas of the 100-year floodplain adjacent to it that must be kept free from encroachment to convey the 100-year flood without increasing the base flood elevation (BFE) more than a specified amount." The site (see Site Maps-Vicinity Map, Fig.1) is also located within the Tijuana River Valley (Valley), much of which is owned by public agencies, principally the County of San Diego. Owners or leasers for agricultural and ranching uses currently occupy other parts of the Valley. These types of land uses are generally compatible with floodway areas. The site is presently used for horse enclosures. Mrs. Brown owns the site; Mrs. Brown has a Life Estate on the property. With the death of the survivor of the Life Estate, title reverts to the County of San Diego (see Property Ownership Documents and Parcel Information). The site will then become part of the Tijuana River Valley Regional Park.

In apparent response to the flood events of the 1980's, the site, which is located immediately west of Hollister Street near the north side of the existing timber bridge (see Engineering Report-Hydrologic & Hydraulic Report), was raised approximately ten feet (vertical) as a result of deposition of approximately 16,000 cubic feet of fill material. No local or federal

permits were obtained for this activity. The fill creates a levee that obstructs approximately 380 feet (48%) of the bridge opening. Studies of the Valley by BSI Consultants/Berryman & Henigar (see Engineering Report-Hydrologic & Hydraulic Report) conclude that this fill material contributes to a 0.8 to 0.9 foot increase in the water surface elevation for flood events ranging from 25-year (35,000 cubic feet per second) magnitude to 100-year (75,000 cubic feet per second) magnitude. During major floods the fill increases the flood velocities and affects the overbank area adjacent to the residential subdivision area north of the site and outside the 100-year floodplain. In 1993, the Tijuana River, blocked by the Brown's Fill, cut another path to the north and destroyed a portion of Hollister Street. The blockage on the Brown parcel is considered the major contributor to this damaging event.

2. How often has flooding occurred historically?

The following table summarizes major flood events in the TJR V:

MAXIMUM ESTIMATED DISCHARGES ON THE TIJUANA RIVER (Listed in Order by Date)		
Date	Discharge (cubic feet per second)	Severity Ranking Subjective ranking with 1 indicating most severe, 10 least severe
FEB 1884	50,000	2
DEC 1889	20,000	9-10
FEB 1891	20,000	9-10
JAN 1895	38,000	3
JAN 1916	75,000	1
FEB 1927	25,000	8
JAN 1980	31,000	6
FEB 1980	33,500	4
MAR 1983	27,700	7
JAN 1993	33,000	5

3. Discuss the importance of improving the flood protection at this location. Include the number of people and structures that are affected by the flood hazard, and the flood impacts to highways and roads, railroads, airports and other infrastructure, and agriculture:

According to a report by Berryman & Henigar (see Alternatives Study), during the 1993 flood more than twenty homes were damaged in a residential area located along the north side of the Valley and upstream from Hollister Street Bridge. This was an area that had been mapped by FEMA as outside the 100-year floodplain, but it was damaged during a flood event of 25-year magnitude. Additionally, the Tijuana River cut a new path to the north, substantially bypassing the blockage caused by the Brown's Fill at the Hollister Street Bridge and washing out hundreds of feet of roadway, agricultural, and ranch lands.

The Valley is located on the border with Mexico. During the 1993 flood event, at least 15 people died in the Valley attempting to enter the country. A number of Valley residents were

subjected to hazardous conditions trying to escape the floodwaters. The floodwaters also posed a severe danger for valuable horses stabled in the Valley.

The removal of the Brown's Fill will restore the floodway to its natural path and result in reducing the water surface elevations and velocities within the floodway. Because of the ongoing potential for significant floods in the Valley due to El Nino, a weather condition linked to substantially increased precipitation and floods in Southern California, the presence of the Brown's Fill on this site creates a significant flood hazard.

B. Flood damage reduction benefits of the Project (100)

- 1. Does the proposed Project provide for transitory storage of floodwaters? What is the total community need for transitory storage related to this water course and what percentage of the total need does this Project satisfy? What is the volume of water and how long is it detained?**

The removal of the Brown's Fill will not provide for transitory storage of the floodwaters.

- 2. Describe any structural and non-structural flood damage reduction elements of the Project. (Examples of structural elements are levees, weirs, detention/retention basins, rock slope-protection, etc. Examples of non-structural elements are acquisition of property for open space, acquisition of land for flood flow easements, transitory storage, relocation of structures and other flood prone development, elevating flood prone structures, flood proofing structures, etc.)**

The removal of the Brown's Fill will provide non-structural flood reduction. The removal of this blockage at the Hollister Street Bridge will open the flow path of the Tijuana River at this location to its pre-fill size and will improve the floodwater flow. A preliminary analysis of site indicates that fill was placed along the east, south and west boundaries of the site. The work plan will specify that equipment will gain access to the site from the north. The unpermitted fill will be removed with earth moving equipment to the ground elevations that existed onsite prior to the deposition of fill. The banks will then be re-contoured and vegetated to prevent erosion and provide habitat for wildlife in the Valley (see Conceptual Design Plans).

- 3. By what methods and by how much dollar values will the Project decrease expected average annual flood damages?**

The removal of the Brown's Fill is one of several permanent flood control solutions in the Valley. Following the severe flooding in 1993, a Tijuana River Valley Task Force was created to coordinate immediate infrastructure repairs in the Valley and investigate and facilitate permanent, long term flood control solutions. In 1994 the City of San Diego and its consultant, BSI Consultant, Inc., proposed to the Task Force several alternative solutions, including removal of the Brown's Fill, a project that became one of the flood control projects proposed for the Valley (see Alternative Study and City of San Diego Resolution). While it is not possible to pinpoint the exact value associated with reduced flood hazards attributable to this Project, damages to property and infrastructure as a result of the 1993 flooding were estimated in the million of dollars. The flood resulted in the death of at least 15 people and the injury or death of livestock. The Project will eliminate threats to the bridge, estimated at \$18 million, and to homes, agricultural land, and safety. It will contain flood waters within its historic floodway.

4. How does the Project affect the hydrologic and hydraulic conditions at the Project site and adjacent properties?

a) Will the Project reduce the magnitude of a flood flow, which could cause property damage and/or loss of life?

According to the study by Berryman & Henigar consultants (see Engineering Report-Hydrologic & Hydraulic Report, and the Alternatives Study), the flow regime throughout the Valley is sub critical. This means that downstream and adjacent features generally control water surface elevations and that the flood affects of the Brown's Fill occur upstream. Downstream impacts are believed to be limited primarily to erosion from the site. The Brown Fill results in increased water surface elevations adjacent to and upstream from the fill. The calculated increase in water surface elevation that results from the Brown's Fill for flood events ranging from 25-year (35,000 cubic feet per second) to 100-year (75,000 cubic feet per second) magnitude is approximately 0.8 to 0.9 feet based upon topographic conditions that followed the 1993 flood. The effects caused by the Brown's Fill prior to the erosion of the new channel north of the site was likely much higher because the northern channel acts as a release for flood flows.

b) What are the effects of the Project on water surface elevations during a flood event which could cause property damage and/or loss of life?

Because the Brown's Fill obstructs flow, higher velocities in the overbank area adjacent to the residential area will occur during major floods. The proposed Project will eliminate this risk, by returning the river to its natural bed. No risks are associated with the Project itself.

The watershed for the river is primarily within Mexico, and many homes there do not have sewerage connections. Furthermore, municipal sewer facilities often spill into the Valley. To keep sewage-contaminated low flow from entering the northern channel and away from the residential area north of the site; the City of San Diego constructed an erodible plug to keep the flow within the pre '93 flow path (Pilot Channel, south of the site). The proposed Project will further reduce this risk of exposure. (See Engineering Report-Hydrologic & Hydraulic Report and the Alternatives Study)

c) How are flow velocities impacted by the Project during a flood flow which could cause property damage and/or loss of life?

The removal of Brown's Fill will decrease the water surface elevations and flood velocities. The Project will keep the flow within its pre '93 path and away from the residential subdivision located north of the site (see Engineering Report-Hydrologic & Hydraulic Report and the Alternatives Study).

C. Restoration of natural processes (60)

1. Describe how any natural channel processes will be restored (for example: for channel meander, sediment transport, inundation of historic floodplain, etc.) and describe how these natural processes will affect flood management and adjacent properties.

The removal of Brown's Fill will restore the flood flow path to pre the 1993 conditions. The restored topography and vegetation of the floodway will contribute to the ongoing efforts to reverse the effects of human-caused disturbance in the Valley and to improve the health of the watershed and habitat for wildlife. The restored flow path will increase the flow capacity under the Hollister Street Bridge and will likely reduce the risk of damaging the timber bridge during a major flood event (see Engineering Report-Hydrologic & Hydraulic Report and the Alternatives Study).

2. Describe any upstream or downstream hydraulic or other effects (such as bank erosion or scour, sediment transport, growth inducement, etc.).

The removal of Brown's Fill will result in decreasing the flood water surface elevations, decrease the velocities, and keep the sewage contaminated flow away for the residential subdivision to the north of the site. Additionally, it is anticipated that sedimentation and other possible discharges from the site will be reduced in the downstream area as the unconsolidated fill is removed, the banks are re-contoured, and riparian vegetation is reestablished (see Engineering Report-Hydrologic & Hydraulic Report and the Alternatives Study).

3. If the Project includes channel modification or bank protection work, will riprap or dredging be part of the design? If so, provide an analysis of potential benefits and impacts.

The conceptual design for the removal of Brown's Fill (see Conceptual Design Plans) will restore the previously existing topography at the site and the floodplain. The Project does not create new channels. After the un-permitted fill is removed, the banks will be planted with native vegetation. Mrs. Brown presently owns the site; Mrs. Brown has a Life Estate on the property. With the death of the survivor of the Life Estate, title reverts to the County of San Diego. The site will then be incorporated into the Tijuana River Valley Regional Park and will provide recreational opportunities for birders and outdoor enthusiasts. The site will contribute habitat and wetland values to the rich, nationally recognized estuary and river system that supports an abundance of wildlife, including migratory birds and endangered species.

D. Project effects on the local community (60)

1. How will the Project impact future flooding on and off this site?

The removal of the un-permitted fill will clear the opening under the Hollister Street timber bridge and as a result will increase the flow capacity of the main river channel. Once the obstruction is removed, flood water surface elevations will be lowered and velocities will be slowed. The reduction of flow velocities will reduce erosion.

2. How will the Project affect emergency evacuation routes or emergency services and demands for emergency services?

Two roads provide access in and out of the Valley: Hollister Street and Dairy Mart Road. Hollister Street is a two-lane north/south roadway that extends from Monument Road to Main Street. It carries approximately 2,000 average daily trips (ADT) between Tocayo Avenue and Sunset Avenue. From Sunset Avenue to Monument Road, this street carries approximately 1,500 ADT. Dairy Mart Road is a four lane north/south roadway from Servando Avenue to Monument Road and carries approximately 2,500 ADT. According to the 1994 Flood Control and Infrastructure Study by BSI, the Dairy Mart Road and Hollister Street crossings were subject to flooding. The Dairy Mart Road crossing has been improved since the 1994 study, and now provides more reliable access in the Valley as a result of the new Danny Marshal Bridge, designed to allow access during a 100-year flood event. The crossing at the Hollister Street timber bridge remains subject to flooding during major storms. In the event of a major flood, the obstruction of the opening of the Hollister Street Bridge may result in damaging the bridge supports and the bridge structure. A section north of the site was destroyed during the major flood in '93.

The Project will allow the flood water to flow unobstructed under the bridge and will keep this section of the road open for emergency traffic use, providing a second reliable access road into and out of the Valley (see Alternative Study).

3. Explain how the Project will comply with the local community floodplain management ordinance and the floodplain management criteria specified in the Federal Emergency Management Agency's National Flood Insurance Program (FEMA's NFIP).

The Project site is located within the Tijuana River Valley area that has been designated by FEMA as a Floodway. The Brown's Fill creates a significant obstruction to the flow under the Hollister Street Bridge. Removing the Brown's Fill complies with the FEMA's National Flood Insurance Program (NFIP). The floodway is that area defined by FEMA as: "The channel of a stream and any areas of the 100-year floodplain adjacent to it that must be kept free from encroachment to convey the 100-year flood without increasing the base flood elevation (BFE's) more than a specified amount." As a participant in the NFIP, the City of San Diego has enacted ordinances consistent with FEMA requirements (see City of San Diego Ordinance, Chapter 14, and City of San Diego Local Flood Hazard Mitigation Plan). The Brown's Fill removal complies with City ordinances established for the Areas of Special Flood Hazard.

E. Value of improvements protected (70)

1. What is the assessed value of structural improvements that will be protected by the Project?

The Brown's Fill acts as a levee that obstructs approximately 380 feet (48%) of the Hollister Street timber bridge opening. This obstruction diverted the flow of the flood water during the 1993 flooding in the Valley and resulted in severe damage to the roads and other water and sewer services in the Valley. If the Brown's Fill remains, future flood events are expected to damage the timber bridge and other roads in the area. The removal of the Brown's Fill will protect the Hollister Street Bridge from damage. The estimated replacement value of this 800 foot-long bridge is approximately \$18 million (the replacement value is based on the per linear foot cost of \$22,500 for a concrete type bridge similar to the newly constructed bridge north of the site). (See Engineering Report-Hydrologic & Hydraulic Report and the Alternatives Study.)

2. What is the estimated replacement value of any flood control facilities or structures protected by the Project?

No manufactured flood control facilities would be affected by the Project; however, the removal of the Brown's Fill will enhance the wetland system that is associated with the Valley. One of the important functions of wetlands is flood protection, and this valley system not only provides flood protection in the riparian and estuarine channels, it also provides other wetland functions, such as filtering, groundwater recharge, and wildlife habitat.

WILDLIFE BENEFITS (340 points)

Proponent should provide a statement of the relative importance of the Project's wildlife and agricultural land conservation benefits. DWR will use the statement and all other Project materials to assign a fraction of the total benefits to each type (wildlife (F_w) or agricultural land conservation (F_a)) so that the fractions total unity. Actual points scored for each type of resource will be multiplied by the respective fraction for each resource, and the wildlife and agricultural scores resulting for each type of resource will be added together.

Habitat values refer to the ecological value and significance of the habitat features at this location that presently occur, have occurred historically, or will occur after restoration.

Viability refers to the site's ability, after restoration if necessary, to remain ecologically viable with minimal on-site management over the long-term, and to be able to recover from any natural catastrophic disturbances (fire, floods, etc.).

A1. Importance of the site to regional ecology (70)

1. Describe any habitat linkages, ecotones, corridors, or other buffer zones within or adjacent to the site. How are these affected by the Project?

The Project site lies along the Tijuana River and is part of the Tijuana River Valley Regional Park (TRVRP) within the Tijuana River Valley. The Tijuana River watershed is international in scope, encompassing a 1,731 square mile area, including a 2,500-acre coastal plains U.S. estuary, but approximately 73% lies in Baja Mexico. The Tijuana River on the Mexican side of the border is a concrete channel. However, across the border in the U. S., where much of the land is owned and managed by the County of San Diego as a regional park system, the riverbed has remained in its natural state. The Valley is a regional biological corridor for wildlife access between the inland mesas and the Pacific Ocean. The riparian system throughout the Valley, predominately comprised of willow scrub/woodland, is rich in wildlife abundance and diversity, including the southwestern willow flycatcher and the least Bell's vireo. The riparian habitats are diverse and ecologically productive environments that provide moist, cool and shaded microclimates as well as an extensive land-water ecotone. As the river approaches the ocean its waters intermingle with brackish channels and eventually support salt marsh with an intricate channel system, mudflats, and sand flats. Coastal sage scrub and chaparral communities occur throughout the upland portions of the Valley, including portions of the Project site, providing foraging and breeding habitat to many wildlife species and act as wetland buffers to adjacent riparian and estuarine habitats. The proposed Project will enhance the regional wildlife corridor and its various habitats by increasing suitable habitat for local and migratory animals and by minimizing erosion and sedimentation that may adversely affect downstream ecosystems and water quality.

2. Is the site adjacent to any existing conservation areas?

The entire Project site is within the local Multiple Species Conservation Program (MSCP) boundaries. The MSCP protects regional biodiversity by preserving a network of habitat and open space. The City attempted to get a written statement from the California Department of Fish and Game (DFG) in support of the Project but was informed that DFG approval of the City's MSCP was equivalent to DFG support of projects to improve biological resources within those MSCP boundaries. The Project site is also entirely within the Tijuana River Valley Regional Park (TRVRP), managed by the County of San Diego. The TRVRP provides habitat protection, recreational facilities and hiking and equestrian trails. The Park is currently comprised of over 1,300 acres and the County will continue to purchase land from willing sellers. Additionally, the Tijuana River National Estuarine Research Reserve (TRNERR), encompassing 2,500 acres of beach, dune, mudflat, salt marsh, riparian, coastal sage and upland habitats, is adjacent to and directly downstream from the Project site.

3. Describe any plans for aquatic restoration resulting in in-stream benefits.

The Project will include un-permitted fill (dirt/debris) removal, followed by river bank reconstruction. It will convert bare dirt horse enclosures into riparian ecosystem. Erosion from the fill contributes to increased sedimentation in downstream estuary channels, making them shallower, which could eventually result in closure of the estuary mouth and failure of the entire wetland system. Depending on the constituents of the fill, contamination could be leaching from the soil, to be taken up by fish and invertebrates that are important food for nesting birds.

4. Discuss any natural landscapes within the site that support representative examples of important, landscape-scale ecological functions (flooding, fire, sand transport, sediment trapping, etc.)?

The Project site is located within the lower Tijuana Valley where the Valley is relatively wide and flat but confined by high mesas to the south and steep-sloped terraces to the north. The landscape is representative of a functional floodplain excluding the actual Project site where the illegal fill would potentially constrict the flow of floodwaters. Many such areas have been modified and the rivers confined within narrow channels to accommodate development along the banks, making this one of the few remaining examples of broad river valley in Southern California.

A2. Diversity of species and habitat types (70)

1. Does the site possess any:

i. Areas of unique ecological and/or biological diversity?

Tijuana River Valley is one of the most productive biological systems in Southern California, home to several rare and endangered species, habitat for shore birds, and a vital stopping place on the Pacific Flyway. The Project site was historically comprised mostly of riparian habitat, which is among the most ecologically productive and diverse environments in Southern California. The Valley serves as a resting/feeding ground for 320 species of migratory birds on the Pacific Flyway. More than 20 species are resident along the estuary channels. The area supports important insects, reptiles, amphibians, mammals, and other wildlife, including important bird species protected by federal law and treaties including bald eagles, osprey, kites, northern harrier, sharp-shinned hawk, Cooper's hawk, red-shouldered hawk, broad winged hawk, Swainson's hawk, red-tailed hawk, ferruginous hawk, rough-legged hawk, golden eagle, barn owls, great horned owls, burrowing owls, long-eared owls, and short eared owls.

Sensitive plant species include the candidate species San Diego ambrosia, *Aphanisma blitoides* in the alkaline flats of the estuary, Nuttall's lotus and wooly-heads in the back dune region, and Baja California birdbush, barrel cactus, cliff spurge, Orcutt's bird's beak, coastal agave, goldenspined cereus, Orcutt's dudleya, snake cholla, and south coast saltscale. The channels of the estuary, threatened by sediments from the project site, are an important area for fishes, with 29 species occurring in juvenile stages in the tidal creeks, including northern anchovy, and several species of goby. Residents include topmelt, killifish, staghorn sculpin, and longjaw mudsucker. The tidewater goby is a federally-listed endangered species.

ii. Vegetative complexity either horizontally or vertically?

The riparian system throughout the Valley is predominately comprised of willow scrub/woodland. This riparian habitat is dominated by mulefat (*Baccharis salicifolia*) and a variety of willows including Arroyo willow (*Salix lasiolepis*), Goodding's black willow (*Salix gooddingii*) and narrow-leaved willow (*Salix exigua*). However, several riverine portions of the Valley support freshwater marsh plant species, such as cattails (*Typha latifolia*) and rushes (*Juncaea* spp). As the river approaches the ocean its waters intermingle with brackish channels and eventually into salt marsh habitat with an intricate channel system, mudflats, and sand flats. The upland areas of the Valley support coastal sage scrub (many plants smaller in stature and coverage less dense) and chaparral plant communities (landscape more densely covered).

2. Describe habitat components including year-round availability of water, adequate nesting/denning areas, food sources, etc.

The Project site is within the Tijuana River Valley along the Tijuana River, an ephemeral drainage that supports a variety of habitats. The riparian scrub/woodland and coastal sage scrub communities provide prime nesting, breeding and/or foraging habitat for both resident and migratory wildlife species such as the least Bell's vireo, Cooper's hawk, orange-throated whiptail, California toad, and the California gnatcatcher.

3. Describe any superior representative examples of specific species or habitats.

The least Bell's vireo primarily nests in willows and forages in riparian and adjoining upland habitats. The vireo's current breeding distribution is restricted to a few localities in southern California and northwestern Baja Mexico, including the Tijuana River watershed. They remain in only about 40 out of 150 historically occupied sites. The Project site lies within critical habitat for the least Bell's vireo. Therefore, restoring the riparian habitat within the Project site will contribute toward the protection and conservation of this endangered species and other wildlife inhabiting the riparian habitat.

4. Does the site contain a high number of species and habitat types? List and describe.

The site currently does not support the species diversity it once did. There is potential to restore riparian and coastal sage scrub habitat from the site by removing the horse enclosures and fill and restoring the vegetation.

5. Does the site contain populations of native species that exhibit important subspecies or genetic varieties historically present prior to European immigration?

The site currently is highly disturbed and supports bare dirt horse enclosures. The adjacent waterway has been subjected to invasions of non-native species such as tamarisk and giant cane. Other parts of the estuary and River Valley are repositories of important pre-European flora and fauna, although no sub-species endemic solely to the River Valley have yet been identified, perhaps because of its function as a wildlife corridor. Restoration of the site to riparian habitat and removal of non-native plant species is expected to benefit the overall ecology of this diverse habitat and its many threatened and endangered species.

A3. Ecological importance of species and habitat types (100)

1. Discuss the significance of habitat types at this location and include any local, regional, or statewide benefits received by preserving or improving the area.

Benefits of restoration of this site exceed the local and even state level. At the local level the Project will complement efforts to conserve and recover sensitive species and will restore valuable natural habitat. The Tijuana River Valley is also important nationally and internationally. It comprises one of the most important coastal wetlands in southern California, recognized as a National Estuarine Sanctuary because of its diverse ecological communities that provide habitat for a variety of waterfowl and rare and endangered species. The U.S. legislature has also passed Public Law No. 106-457 to encourage the restoration of this habitat. It is an important stopover place for migratory birds, hatchery for fish, as well as supporting a diversity of plants and invertebrates.

2. Does the site contain any significant wintering, breeding, or nesting areas? Does it fall within any established migratory corridors? What is the level of significance? How are these affected by the Project?

The Tijuana River Valley is located along the Pacific Flyway and provides migration and wintering habitat for a variety of bird species. Restoration of the Project site will provide more riparian habitat for riparian-dependant birds visiting the Valley. Additionally, the

removal of fill will reduce peak flows, reduce erosion and sedimentation and improve water quality and minimize impacts on aquatic organisms downstream, including many invertebrates within the Tijuana Estuary that are migratory bird food sources.

3. Describe any existing habitats that support any sensitive, rare, “keystone” or declining species with known highly restricted distributions in the region or state. Does the site contain any designated critical habitat? How are these affected by the Project?

The Project area consists of willow scrub/woodland, disturbed riparian and disturbed coastal sage scrub. Sensitive wildlife species associated with willow scrub/woodland habitat within the Tijuana River Valley includes the federally endangered least Bell’s vireo and southwestern willow flycatcher. Current breeding distribution of the least Bell’s vireo is restricted to just a few localities in southern California and northwestern Baja California, including the Tijuana River Valley. The Project site lies within critical habitat for the least Bell’s vireo and is adjacent to critical habitat for the southwestern willow flycatcher. The Project will increase the habitat available and the site may support these species after the proposed restoration.

Coastal sage scrub habitat occurs throughout the Tijuana River Valley corridor. The federally threatened California gnatcatcher (*Polioptila californica*) nests and forages primarily in coastal sage scrub habitat. The Project proposes to restore a small amount of disturbed upland areas with coastal sage scrub species to enhance the local habitat for the California gnatcatcher.

The coyote (*Canis latrans*) is an important local keystone species that occurs in this area. Coyote help control the abundance of small “meso” predators such as opossums and domestic animals that negatively affect the survival of sensitive wildlife such as light-footed clapper rails. Coyote can exist in somewhat isolated natural and agricultural areas, but work by Michael Soule shows that as its habitat becomes more restricted as a result of urban pressures, it does eventually become too restricted to support coyote. The coyote move on, resulting in significant decreases in species diversity as a result of predation by meso-predators. The coyote is a highly adaptable species, and many uses of this site would be suitable for it, including the proposed Project.

4. What is the amount of shaded riverine aquatic (SRA) and riparian habitat to be developed, restored, or preserved?

The Project proposes to restore approximately twelve acres of disturbed riparian habitat and approximately four acres of upland habitat. The restored riparian areas will increase the amount of shaded, cool and moist microclimates within the River Valley. The entire Project is either currently or will be included within the City’s MSCP and TRVRP systems that preserve biological resources as part of these objectives.

A4. Public benefits accrued from expected habitat improvements (60)

1. Describe present public use/access, if any. For instance, does or will the public have access for the purpose of wildlife viewing, hunting, fishing, photography, picnics, etc.

The TRVRP is used by hikers, birders, researchers, and equestrians. The County of San Diego has a small park ranger station adjacent to the Project site where books and interpretive displays are available and trailheads are located. The Border Field State Park is located southwest of the Project site and offers grassy picnic areas and ocean views. Restoration of the degraded Project site will enhance wildlife viewing, photo opportunities, and recreational activities within the TRVRP.

2. Discuss areas on the site that are critical for successfully implementing landscape or regional conservation plans. How will the Project help to successfully implement the plans?

The Project is included in the City's MSCP area within the Valley. Objectives of the MSCP include the restoration of degraded habitats. The implementation of this Project is essential to protect and conserve the surrounding sensitive lands and resources that provide suitable habitat for sensitive wildlife species.

3. Describe the surrounding vicinity. Include the presence or absence of large urban areas, rapidly developing areas, and adjacent disturbed areas with non-native vegetation and other anthropogenic features. Do any surrounding areas detract from habitat values on the site?

The Project site itself is a horse ranch with horse enclosures on bare dirt. There are other agricultural and equestrian uses nearby, as well as hiking and equestrian trails, open space areas for conservation, research and wildlife viewing. The Tijuana River bed has large patches of invasive plants including *Arundo donax* and *Tamarix* spp. These non-native plants have the potential to affect the groundwater table levels and out-compete the natives for resources. However, the un-permitted fill is the most degrading anthropogenic feature within this reach of the Tijuana River. The removal of the fill will benefit the riparian ecosystem and improve flood protection for the River Valley.

4. Describe compatibility with adjacent land uses.

Removing the un-permitted fill and implementing flood protection measures will reduce the threat of frequent flood damage to upstream property owners. Additionally, removing the sedimentation source (fill dirt) from the floodway will contribute toward protecting the downstream biological resources and habitats including the TRNERR. Restoration of the riparian habitat will improve habitat values of the Valley, contributing to attainment of the goals of both the TRVRP and the City's MSCP. Other complementary Projects within the River Valley that will benefit from the proposed Project include: The Friendship Marsh (restoration of tidal marsh, mud flats and cordgrass habitats downstream of Project); Oneonta Tidal Linkage (restoration of salt marsh and mud flats downstream of Project); and Goat Canyon Enhancement Project (restoration of riparian habitat and installation of sediment management basins, downstream of Project). Consequently, two of our Project supporters, Southwest Wetlands Interpretive Association (SWIA) and California Coastal Conservancy are both heavily involved in the above projects.

A5. Viability/sustainability of habitat improvements (40)

1. Describe any future operation, maintenance and monitoring activities planned for the site. How would these activities affect habitat values?

Recreational use of the Project site for birding and other passive uses associated with the park are not expected to negatively affect the habitat values. The site is expected to retain the habitat values that are created as a result of the proposed restoration without need for maintenance and monitoring beyond the period provided for under this Project. However, there will be some ongoing maintenance and monitoring provided by public agencies. Ongoing maintenance and monitoring provided by the City as part of its MSCP and the County as part of the park system would be expected to ensure maintenance of the site and would not reduce any of the habitat values established by this Project.

2. Does the site contain large areas of native vegetation or is it adjacent to large protected natural areas or other natural landscapes (for example, a large stand of blue-oak woodland adjacent to public land)?

The Project site is directly connected to native riparian habitat (willow scrub/woodland) including arroyo willows and Goodding’s black willow and adjacent to stands of Fremont cottonwoods and California sycamores that occur throughout the River Valley. The native vegetation occurs within the TRVRP and also within the City’s MSCP boundaries. The Tijuana National Estuarine Sanctuary is located immediately downstream.

3. Is the watershed upstream of the site relatively undisturbed or undeveloped and likely to remain so into the foreseeable future? Describe its condition.

The 1,731 square mile watershed originates at the confluence of Arroyo del Alamar and Rio de las Palmas in Mexico. The watershed lies primarily on the Mexican side of the border, much of it behind Rodriguez dam. The riverbed from the dam to the border is a concrete channel, but then the river flows into the Tijuana River Valley on the U.S. side. The watershed upstream of the Project site is comprised mostly of riparian habitat within the TRVRP in the U.S. However, developed areas such as horse ranches, agricultural lands and residential areas also occur in the River Valley. The undeveloped areas of the River Valley are mostly included in the City’s MSCP and therefore designated for biological resource preservation.

4. Describe any populations of native species or stands of native habitats that show representative environmental settings, such as soil, elevations, geographic extremes, or climatic conditions (for example, the wettest or most northerly location of a species within the state).

Current breeding distribution of the least Bell’s vireo is restricted to just a few localities in southern California and northwestern Baja California, including the Tijuana River Valley. Specifically, several least Bell vireo territories are known to occur in the Project area.

The Project area is located at the extreme southwestern corner of the U.S. The area represents the eastern-most distribution of many species. It includes the northern-most part of the range of several plants, such as *Abronia maritima* and *Rosa minutifolia*. Although many plant species are abundant on both sides of the border, for many species the U.S./Mexico border represents a dividing zone.

MISCELLANEOUS BENEFITS AND QUALITY OF PROPOSAL (320 points)

A. Size of request, other contributions, number of persons benefiting, cost of grant per benefited person (40)

Estimated Total Project Cost	<u>\$3,601,000.00</u>
Amount of FPCP Grant Funds Requested	<u>\$2,721,500.00</u>
Amount of Local Funds Contributed	<u>\$ 0</u>
Amount of In-kind Contributions	<u>\$ 879,500.00</u>
Additional Funding Sources	<u>\$ 0</u>

Number of persons expected to benefit	<u>50,000 people (approx.)</u>
Flood Protection Corridor Funds per person benefited.*	<u>\$54.43 per person</u>

(*The total number of persons is comprised of Actual Daily Traffic (ADT) numbers for Hollister Bridge within project area; residential community, approximately 340 homes, adjacent and upstream of project site; recreational users including horseback riders, hikers and birders; and natural resource researchers.)

B. Quality of effects on water supply or water quality (90)

1. Will water stored by the project provide for any, groundwater recharge, or water supply benefit?

Groundwater elevations in the Valley are currently just a few feet below the ground surface in some areas. Impacts to the groundwater elevations could adversely affect the supply for agricultural as well as damage riparian habitat. Deep cuts could draw down the water table. The proposed removal of the Brown's Fill does not lower existing flowline in the channel south of the property and the finished ground elevation after the removal of the fill will have no impact on ground water table. The removal of the fill will not have adversely impact the groundwater recharge. It will benefit groundwater by removing tamarisk species, which transpire at high rates, drawing on the groundwater, and also bringing saline constituents to the surface where they can interfere with the growth of freshwater plants. Historical over-drafting in the Valley as resulted in a saltwater intrusion that makes this riparian corridor especially vulnerable to this threat, making the Project all the more crucial.

2. Does the project fence cattle out?

The project does not fence cattle out. No cattle are located in the vicinity of the Project.

3. Does the project pass water over newly developed fresh water marsh?

The project does not pass water over newly developed fresh water marsh.

4. Does the project trap sediments?

The restoration plan after the removal of the fill will include revegetation of the area with native plants. This measure will reduce sediment flow downstream compared to the condition of the existing unconsolidated fill.

C. Quality of impact on underrepresented populations or historic or cultural resources (60)

1. Does the project benefit underrepresented populations? Explain.

The Brown's Fill contains trash and other debris material such as concrete and asphalt, the removal of this undocumented fill does not have historic or cultural resources. The area is culturally diverse, including many Spanish speakers, and therefore provides an open space amenity accessible to the public at large, but also to the local, underrepresented population.

2. Are historical or cultural resources impacted by the project? Explain.

The Brown's Fill contains trash and other debris material such as concrete and asphalt, the removal of this undocumented fill does not have historic or cultural resources or have negative impacts on underrepresented population.

D. Technical and fiscal capability of the project team (60)

1. Does the project require scientific or technical expertise, and if so, is it provided for in the grant proposal?

The project requires scientific and technical expertise in both flood protection engineering practices and native habitat restoration. The project team consists of experienced project managers, civil engineers and biologists with a wide variety of skills to implement the Project. Please see Project Team Expert Qualifications section of the grant application.

- 2. Grant funds will be available in phases. What monitoring and reporting mechanisms are built into your administrative plan to track progress, initiation, and completion of successive phases?**

The success of flood protection measures will be monitored and reported to FEMA on a set schedule set forth in the flood protection plan and work plan for the Project. The Engineering and Capital Projects Department is highly experienced in monitoring protective measures in flood plains and the FEMA reporting procedures.

The habitat restoration area will be maintained and monitored on a weekly, monthly, quarterly and eventually annual basis depending on the success of the restoration. Maintenance will include non-native plant control and native plant replacement. Restoration monitoring reports will be available to the wildlife regulatory agencies on a regular basis, as specified in the applicable permit conditions/agreement.

- 3. Please outline your team's management, fiscal, and technical capability to effectively carry out your proposal. Mention any previous or ongoing grant management experience you have.**

Please see Project Team Expert Qualifications section of the grant application.

E. Coordination and cooperation with other projects, partner agencies, and affected organizations and individuals (80)

- 1. List cost sharing and in-kind partners and any other stakeholders involved with your project and indicate the nature of their contribution, if any. Address the team's ability to leverage outside funds.**

There are many project in-kind contributors and/or several supporters for the proposed Project. Organizations or agencies that will contribute in-kind services in addition to overall support for the Project include the County of San Diego, City of San Diego, Audubon Society-San Diego Chapter and Southwest Wetlands Interpretive Association (contributions specified in Project Budget). Project supporters include the Army Corps of Engineers, Department of Fish and Game, California Coastal Conservancy, Tijuana Valley County Water District, Tijuana River Valley Task Force, Citizens Against Recreational Eviction (CARE), Tijuana River National Estuarine Research Reserve (TRNERR) and Tijuana River Valley Equestrian Association, Inc. All of the above supporters have provided an attached support letter in favor of the proposed Project (except Department of Fish and Game as explained previously in *Wildlife Benefits Questions, Existing Conservation Areas* section).

- 2. Does your project overlap with or complement ongoing activities being carried out by others (such as CALFED, the Sacramento and San Joaquin River Basins Comprehensive Study, the Delta levee program, Local Floodplain Management Programs, the Reclamation Board's Designated Floodway Program, or a multiple objective regional or watershed plan)? If so, indicate any coordination that has taken place to date or is scheduled to take place in the future.**

The Draft *Tijuana River Valley Regional Park Management Plan* was completed in 2001 with input from local and regional stakeholders. This Management Plan addressed issues such as: protection of sensitive biological and cultural resources, land uses/ownership issues, preservation of equestrian, recreational and agricultural uses within the River Valley. Complementary restoration projects within the Valley include the multi-phased 500-acre wetland restoration program, the Tijuana Estuary Tidal Restoration Program. This program consists of the Oneonta Tidal Linkage, Friendship Marsh, Spooner's Mesa Quarry Restoration and Goat Canyon Enhancement projects. These projects restored various sensitive habitats within the Tijuana River National Estuarine Research Reserve (TRNERR)

located adjacent and downstream of Project. The California Coastal Conservancy and SWIA, two of the Project supporters, are also lead project managers of the Tijuana Estuary Tidal Restoration Program projects and were involved in the review of the draft *Tijuana River Valley Regional Park Management Plan*. The involvement of these two organizations in the above River Valley projects and the proposed Project demonstrates a strong coordination effort to ensure the Project will be beneficial to the Tijuana River Valley community.

3. Will this application, if approved, begin the next phase of a previously approved project or advance an ongoing project substantially toward completion?

Not applicable, the Project application will not begin the next phase of a previously approved project or advance an ongoing project substantially toward completion.

4. Describe how the proposal demonstrates a coordinated approach among affected landowners, local governments, and nonprofit organizations. If other entities are affected, is there written support for the proposal and a willingness to cooperate?

The City of San Diego will act as the lead sponsor to administer, coordinate, and implement the Project. The County of San Diego is the property owner for the majority of the Project site and adjacent areas. Many other local and regional stakeholders from a wide variety of organizations and agencies, including the above mentioned Project supporters that provided support letters and/or in-kind services, have been involved and will continue to be involved in the coordination, planning and implementation of the Project. County of San Diego, City of San Diego, San Diego Audubon Society and SWIA representatives will all participate in ongoing advisory committee meetings to coordinate and plan out the Project objectives. Additionally, SWIA will provide educational outreach services to the Tijuana River Valley community as part of their normal activities in attempt to inform the local general public about the Project benefits.