

ENHANCING ACCESS TO SOUTHERN CALIFORNIA WILDLIFE REFUGES

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What is the Transportation Fellows Program?
The Public Lands Transportation Fellows program provides public lands with transportation professionals for six to 12 months who assist in transportation planning and implementation to help public lands reduce traffic, congestion and pollution while improving visitor experiences. These programs are designed to place individuals with substantial knowledge and expertise in transportation planning and related areas. *See footer for a list of sponsors.*

Tijuana River National Estuarine Research Reserve (Imperial Beach, CA)

About Tijuana River National Estuarine Research Reserve (TRNERR)

- Part of National Estuarine Research Reserve system, administered nationally by NOAA
- Approximately 2,500 acres at Southwest corner of continental US
- Encompasses:
 - Tijuana Slough National Wildlife Reserve (USFWS)
 - Border Field State Park (CDPR)
 - Tijuana River Valley Regional Park (SD County)

Beach and Tijuana River Mouth: Access Issues

- Access to beach is prized by local surfers, hikers, and equestrians
- Coastal dunes host nesting sites for endangered birds, requiring:
 - access closure
 - visitor education
- River mouth periodically “wanders” north and south within land owned by USFWS
- Tijuana River outlet recently closed by sediment build-up, requiring emergency mobilization of heavy equipment to re-open river

Border Field State Park: Access Issues

- Border fence and Pacific Ocean prevent access from south and west
- Current access road floods following rainfall events causing toxic sediment deposition



Access Objectives for new TRNERR Comprehensive Management Plan
Objective 1: *Improve valley-wide trail system to facilitate connectivity across jurisdictional boundaries through a revitalized TRNERR Trails Committee*

- Connect planned San Diego County Campground to TRNERR trail network
- Improve connections between adjacent neighborhoods and TRNERR
- Improve connections between Bayshore Bikeway and Tijuana Slough

Objective 2: *Implement a multi-modal transportation program for access to TRNERR*

- Facilitate access the TRNERR visitor center via transit
- Implement pilot program to allow vehicle access to Border Field SP on weekdays
- Initiate work on Monument Road improvements to increase year-round day use access to Monument Mesa
- Install secure bike racks at TRNERR entrances
- Install appropriate informational signs at all entrances (e.g., advisory, wayfinding, and interpretive)
- Maintain uniform surface condition on all entrance paths
- Provide facilities to serve predominant activity at each major entrance

Objective 3: *Create networked system of trails that provides access to and interpretation of all four major ecosystems within reserve.*

- Connect North and South sides of Reserve to facilitate longer hikes
- Improve signage and wayfinding
- Recommend program to address long-term use of sediment capture basins

Objective 4: *Provide access for research, maintenance, and stewardship activities at TRNERR.*

- Develop plan to provide access for research, maintenance, and stewardship
- Develop program to acquire necessary vehicles
- Develop program to implement identified infrastructure improvements

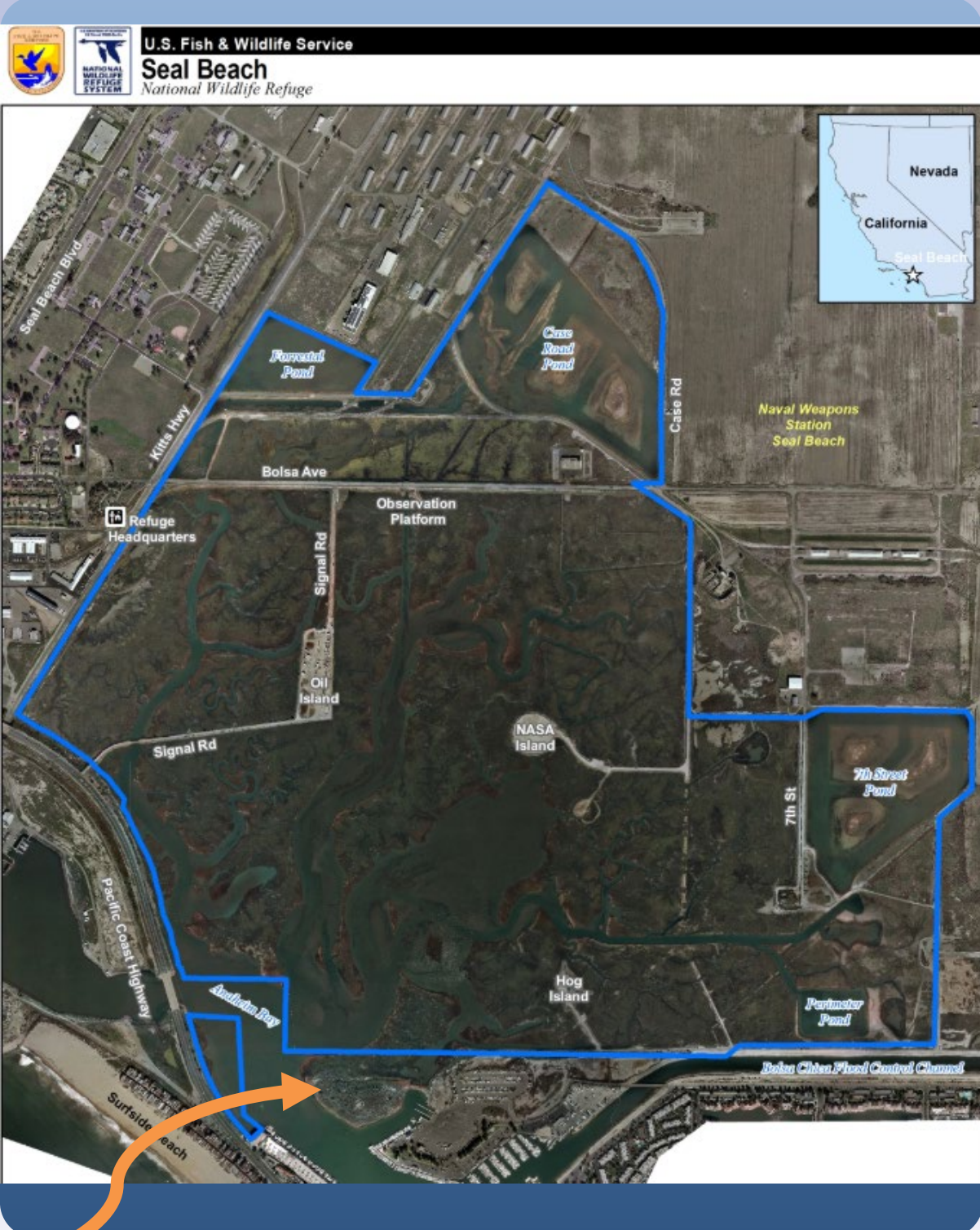
Seal Beach National Wildlife Refuge (Seal Beach, CA)

About Seal Beach National Wildlife Refuge

- Located on LA/Orange County border, on Pacific Coast
- Only National Wildlife Refuge serving more than 13 million people in Orange and Los Angeles Counties
- Provides essential habitat for sea turtles, endangered birds, and fish
- Surrounded by Naval Weapons Station Seal Beach, an active military installation
- Public access on the Refuge is severely restricted to guided tours (available only to US Citizens and Permanent Residents)
- Lack of public access requires staff to rely on off-site opportunities for public engagement

Improving Public Access

- Location within Naval Weapons Station precludes most public access
- Work with Orange County Parks to identify location for observation platform
 - Provides **visual access** to Seal Beach
 - Offers general public a Seal Beach NWR experience



San Diego National Wildlife Refuge Complex (San Diego, CA)

Access to San Diego Bay NWR and Living Coast Discovery Center

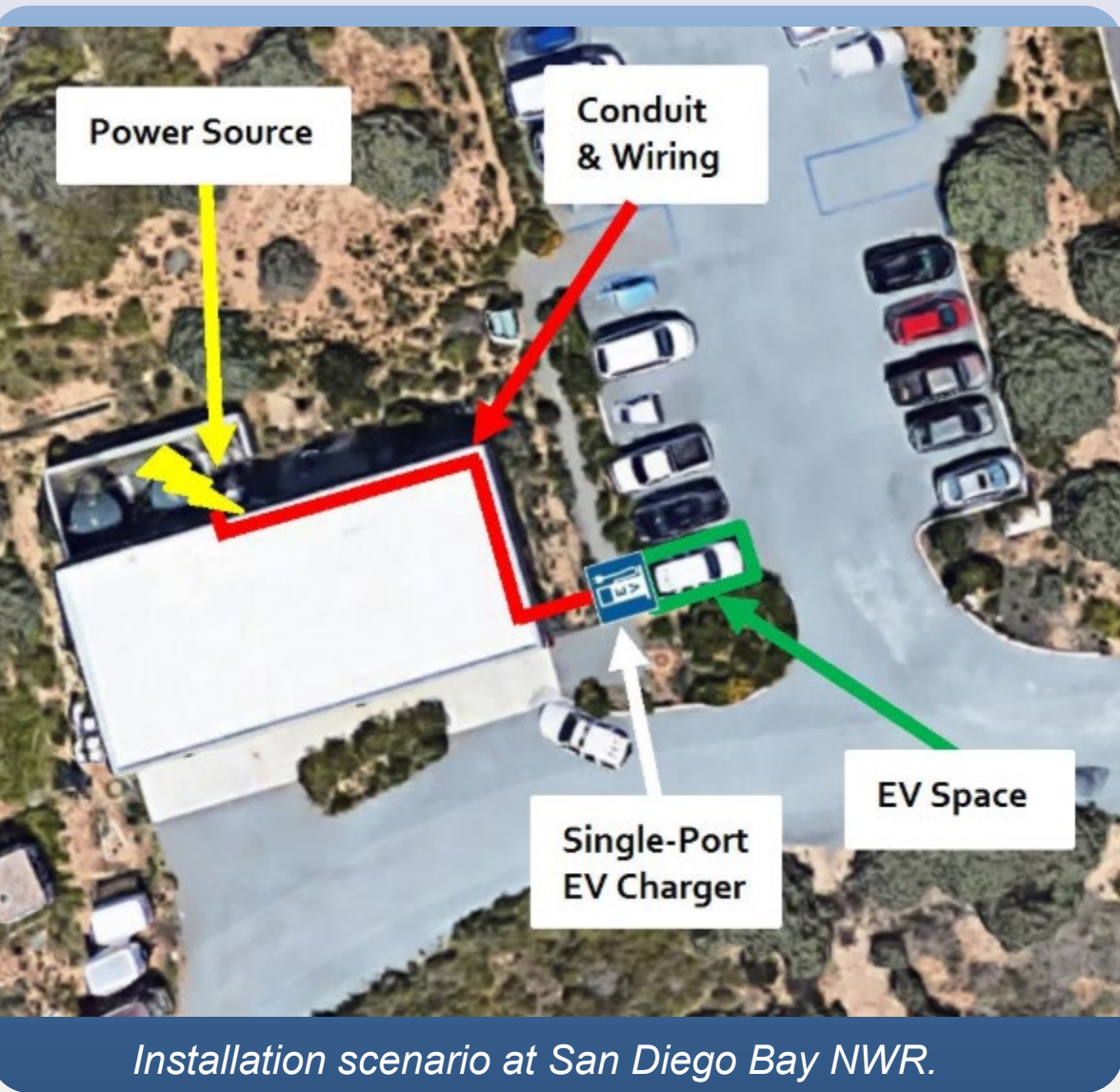
- Pedestrians and private vehicles prohibited from entrance road due to impact on birds
- Existing shuttle reaching end of useful life
- Options being considered:
 - Continue existing shuttle
 - Autonomous shuttle
 - Electric vehicle
- Integrate with circulator shuttle for adjacent planned development
 - Provide pedestrian and bicycle access

Why Offer Electric Vehicle Charging Stations?

- Offer visitors chance to experience refuge while charging vehicles
- Support staff and volunteers who use electric vehicle
- Facilitate opportunities to purchase electric vehicles for refuge use
- Fill a gap in regional network of charging stations
- Offer charging stations close to border crossing, where need is particularly acute



| Types of EV Charging | | | |
|-----------------------|--|---|---|
| | Level 1 | Level 2 | DCFC |
| Voltage | AC; 110/120 | AC; 208/240 | DC; 208, 440, or 480 |
| Charging range / hour | 2-5 miles | 10-20 miles | 70-150 miles |
| Typical locations | <ul style="list-style-type: none">• Single family homes• Commercial offices | <ul style="list-style-type: none">• Multi-family residential• Commercial offices• Parks | <ul style="list-style-type: none">• Public facilities• Commercial offices• Hospitality facilities |



| Estimated Cost of EV Charging Station | | | |
|---------------------------------------|---------------------------|------------------|------------------|
| Equipment | Unit Cost (incl. labor) | Unit Measurement | Total Cost |
| Conduit | \$8.70/ft. | 85 ft. | \$739.50 |
| Wire | \$1.20/ft. | 85 ft. | \$102 |
| Trenching | \$47.78/ft. | 5 ft. | \$238.90 |
| Charging Station | \$400 to \$2,000 | 1 station | \$400 to \$2,000 |
| Circuit Breakers | \$173 each | 1 breaker | \$173 |
| Permits | \$181 | 1 permit | \$181 |
| Total | \$1,834 to \$3,434 | | |



Western Transportation Institute

