

# National Alternative Transportation Evaluation (NATE) Overview of Data and Trends for Alternative Transportation in the U.S. Fish and Wildlife Service



*Wichita Mountains (Volpe)*

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U.S. Department of Transportation

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**Volpe**

# INTRODUCTION

Between 2010 and 2014, the U.S. Fish and Wildlife Service (FWS), the Volpe Center, and the Office of Federal Lands Highway conducted eight Regional Alternative Transportation Evaluations (RATEs) across all of the FWS regions. The National Alternative Transportation Evaluation (NATE) is an overview of what FWS learned and how it will help to plan for transportation in the future.



Causeway at Monomoy NWR (Volpe)

What's a RATE?	What are Alternative Transportation Systems (ATS)?	Why is ATS Important?
<ul style="list-style-type: none"> <li>• The RATE is comprised of two main data collection components: a web-based questionnaire and in-person site visits</li> <li>• The RATEs use a basic questionnaire, adapted for each region, that is sent electronically to all station managers</li> <li>• The RATE helps to ensure effective consideration and integration of alternative transportation systems (ATS) into the goals and recommendations of regional long-range transportation plans (LRTP)</li> <li>• The final product of the RATE is a report that includes an analysis of the survey results, opportunities at specific refuges/hatcheries, and underserved population analyses for selected regions</li> </ul>	<p>Alternative transportation systems generally include any travel means other than personal automobile, such as:</p> <ul style="list-style-type: none"> <li>• Motorized transportation systems operating internally within stations</li> <li>• Shuttles and van transit connecting stations with other destinations</li> <li>• Regional transit connections (bus, light rail, trolley, commuter rail, passenger rail)</li> <li>• Bicycle and pedestrian infrastructure (sidewalks, paths, bicycle lanes, regional trails)</li> <li>• Water-based transportation</li> <li>• Publicly and privately operated systems</li> <li>• School buses</li> </ul>	<ul style="list-style-type: none"> <li>• Reduce the impacts that vehicles have upon natural resources</li> <li>• Help manage visitors</li> <li>• Minimize the need for new roads or parking</li> <li>• Enhance visitors' understanding of the station's natural resources by facilitating interpretive tours or directing visitors for special events</li> <li>• Provide access and mobility to portions of the populations who do or choose not to own a vehicle or are disabled</li> <li>• Reduce the Service's carbon footprint</li> <li>• Relieve parking and roadway congestion</li> </ul>

## TRENDS IN TRAVEL TO REFUGES

### National Trends

Americans are increasingly keeping their travel local, their car ownership is decreasing, and their use of alternative transportation modes is increasing. At the same time, the population is growing, especially among older Americans. Consider some of these trends from the 2009 National Household Travel Survey (NHTS) and the USDOT's Beyond Traffic initiative (a framework for transportation planning for the next three decades):

*“Miles traveled for social and recreational trips [in 2009] were significantly lower than in 2001 ... but the number of trips remained constant.” (NHTS, pg 14)*

*“In 30 years our population is expected to grow by about 70 million.” (Beyond Traffic, pg 12)*

*“Per capita vehicle miles traveled, a measure of how much people drive, began declining in 2006 and has not increased, even as the economy has recovered from the Great Recession.” (Beyond Traffic, pg 13)*

*“By 2045, the number of Americans over age 65 will increase by 77 percent.” (Beyond Traffic, pg 20)*

## What does this mean for FWS?

- Stations can focus on accommodating growing local visitation, including expanding their bicycle and pedestrian networks for local visitors that live nearby.
- Since rates of car ownership are decreasing, FWS can increase modal choice to improve access for car-less individuals and families.
- FWS may want to target access options to millennials and seniors.
  - Millennials are increasingly likely to not drive or own a vehicle, and they may use more non-motorized and transit options.
  - Seniors with declining mobility are already a primary user group for existing transit-based interpretive tours; the popularity of this tour option may increase in coming years.

*“Between 2001 and 2009, the number and percent of households with no vehicle available grew by nearly one million households, from 8.1 percent of all households to 8.7 percent.” (NHTS, pg 34)*

## Regional Trends



Data Source: RATE Questionnaires

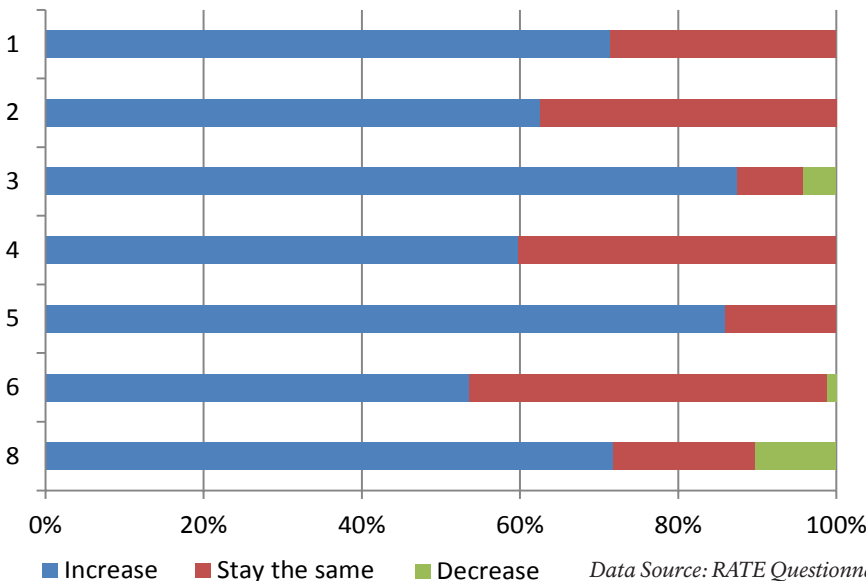
Each of the eight FWS regions experiences unique transportation issues that may be addressed through ATS. The above graphic summarizes some of the regional trends identified in the RATE reports.

Across all regions, station managers overwhelmingly expect visitation to increase, especially in Regions 3 and 5. See graph below on left, which is based on station manager responses to the RATE questionnaire. Region

7 stations are not included in the graph below because they stations did not respond to this question on their RATE questionnaire.

Each region is managing land surrounded by varying community sizes and encompassing very different habitats and conservation challenges. These differences affect station and travel management in complex ways that may not be captured in this NATE. For more detail, please refer to the RATE reports.

## Expected Future Visitation Levels



Data Source: RATE Questionnaires

*“Alternative transportation opportunities for Region 7 stations include: fewer motorized trips by Refuge staff, more fuel efficient fleet, trail connections, bikes, and sled dogs.” --Region 7 LRTP*

# VISITORS' TRANSPORTATION CHOICES AND PREFERENCES

Along with the RATES, the FWS partnered with the U.S. Geological Survey (USGS) to conduct a National Wildlife Refuge Visitor Survey across 53 refuges in 2010 and 2011. Data from both of these sources show how visitors prefer to travel to and within stations.

## Where do visitors live?

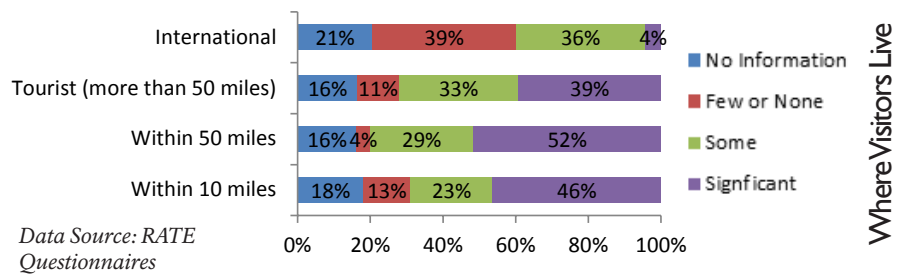
A significant number of visitors come from the local region.

- Stations that can establish better ATS connections will provide local visitors with more access options.
- Local visitors may be more willing and able to use bicycle, pedestrian, and transit modes.
- Local visitors may also benefit from transit offered through special events or in partnership with community groups.

Many visitors are tourists that travel more than 50 miles to reach the refuge.

- In most cases outside of urban settings, tourists have private vehicles.
- Tourists seeking recreational opportunities may enjoy ATS options for travel within the station, like interpretive transit tours, bicycle share or rental, and walking paths.

Approximately 40 percent of stations have at least a small number of international visitors. International visitors may be more likely to take transit (depending



on cultural norms in their home country) and may be less likely to have a private vehicle.

## How do visitors access stations?

Both the RATES and the Visitor Survey show that visitors rely highly on personal vehicles to access stations.

Water-based access is significant in many regions, especially 4 and 5.

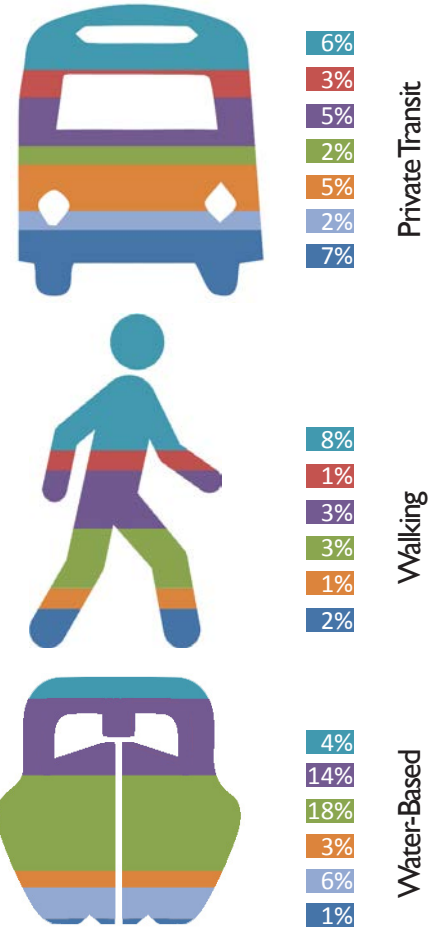
All regions have a small but significant presence of private transit, walking, and bicycle modes.

- Region 8 has the most walkers – and Region 2 has the least.
- Regions 1 and 8 have the greatest use of private transit.
- 67 percent of stations have school groups or Friends Groups that provide transportation to the stations via bus or van.
- Public transit use is minimal in all regions.

The figures to the right show how people get to FWS stations by region.

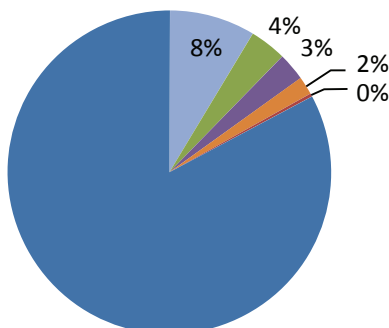
## Visitor Access Highlights

Region 1 2 3 4 5 6 8

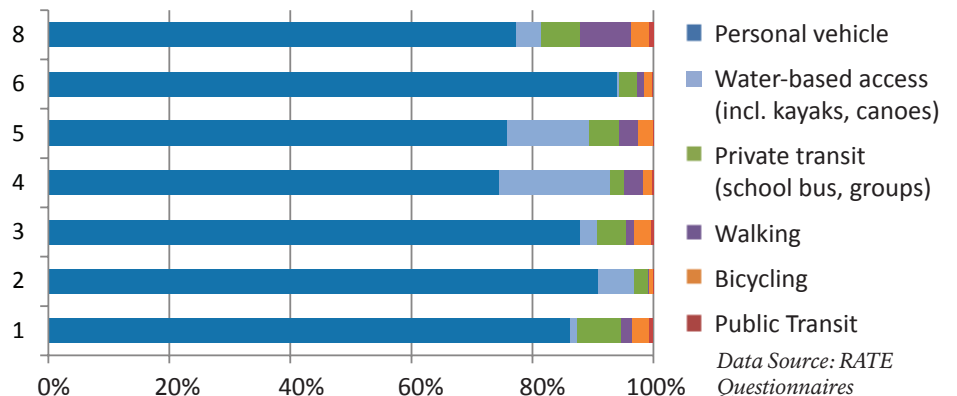


Data Source: RATE Questionnaires

## Estimated Access Mode Across All Regions



## Access Mode by Region



## Visitor Access, Cont'd

Anecdotally, many stations visited as part of RATEs reported that the number of school groups coming to stations is dwindling due to school district budget limitations.

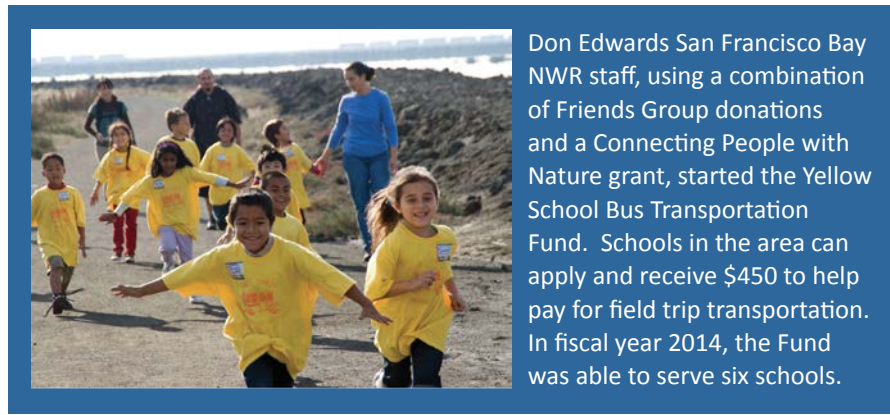
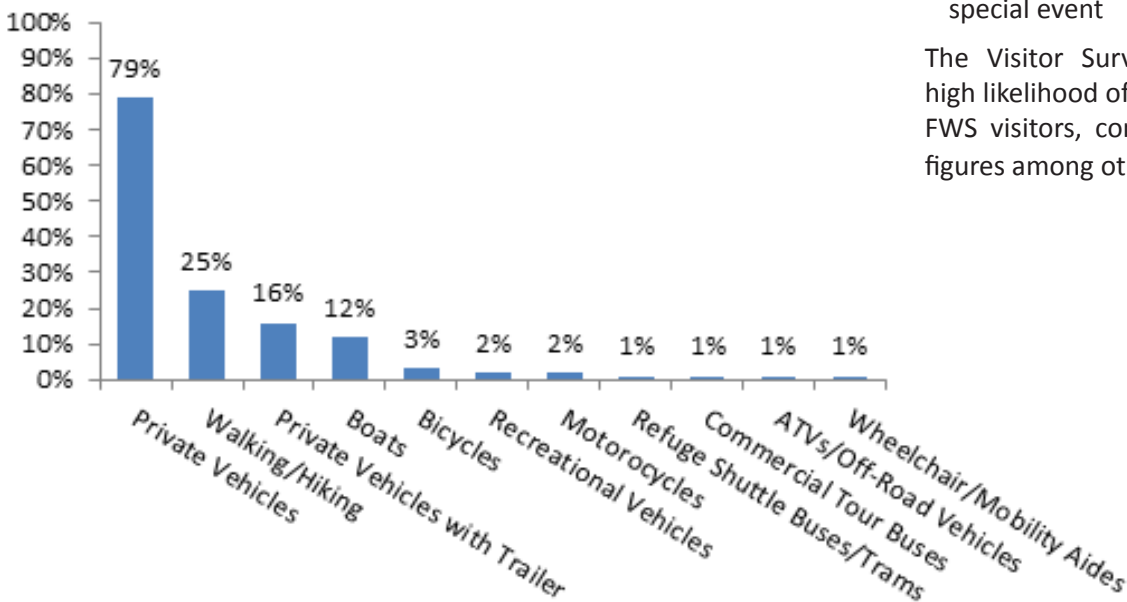
Thirty stations that responded to the RATE questionnaire use transit for special events to accommodate high visitation. Many stations do not have the parking capacity to host a high volume of visitors during special events and therefore temporary solutions such as shuttles from overflow lots and other off-site parking can alleviate that congestion.

### How do visitors travel within stations?

The USGS National Wildlife Refuge Visitor Survey asked visitors which modes of transportation they used to travel around the station. Visitors primarily used private vehicles.

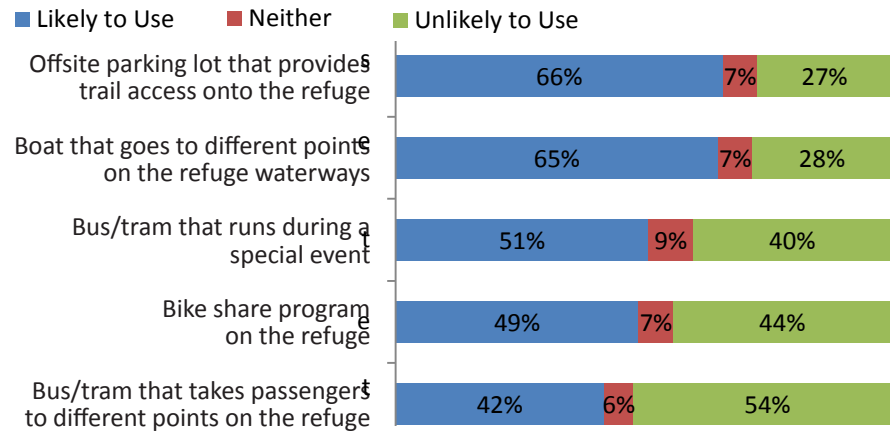
Walking/Hiking was the second most popular mode, highlighting the importance of maintaining internal trails and providing opportunities for visitors to get out of their vehicles.

### Current Mode Choice for Travel within Station



Don Edwards San Francisco Bay NWR staff, using a combination of Friends Group donations and a Connecting People with Nature grant, started the Yellow School Bus Transportation Fund. Schools in the area can apply and receive \$450 to help pay for field trip transportation. In fiscal year 2014, the Fund was able to serve six schools.

### Likelihood of Alternative Mode Use



### What are visitors' transportation preferences?

The figure below shows that the most popular alternative transportation options that station visitors may be likely to use in the future are:

- An offsite parking lot that provides trail access for walking/hiking onto the refuge
- A boat that goes to different points on refuge waterways
- A bus/tram that runs during a special event

The Visitor Survey results shows high likelihood of transit use among FWS visitors, considering ridership figures among other public lands.

# ATS BY THE NUMBERS

The first round of RATEs uncovered 85 transit systems and hundreds of regional trails. While future RATEs will make this data more complete and robust, here is a snapshot of ATS on FWS stations:

- 85 on-refuge transit systems\*
  - 14 rail
  - 7 water-based
  - 64 bus/shuttle/van
- 1,851 recreational and regional trails, including FWS-owned trails\*
- 46 regional trails that connect directly to refuges†
- 32 additional regional trails within 1 mile of refuges†
- 27 refuges with public transit service within 1 mile†

\* Data Source: Multimodal Catalog  
 † Data Source: RATE questionnaire

Nearly all regions have completed L RTPs, which set goals, objectives, and recommendations for both traditional and alternative transportation systems. A few excerpts on how regional and national L RTPs support ATS:

## Nantucket and Merritt Island NWRs

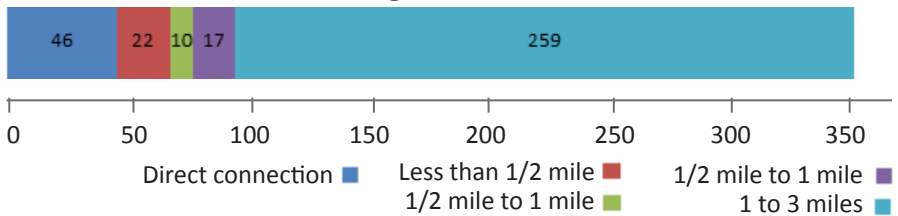


Nantucket NWR and Merritt Island NWR recently completed transit studies that explore how to introduce or expand transit service in their refuges. Nantucket NWR entrance (left photo) would be potentially accessible by improved transit service (Volpe).

### Station Distance from Public Transit



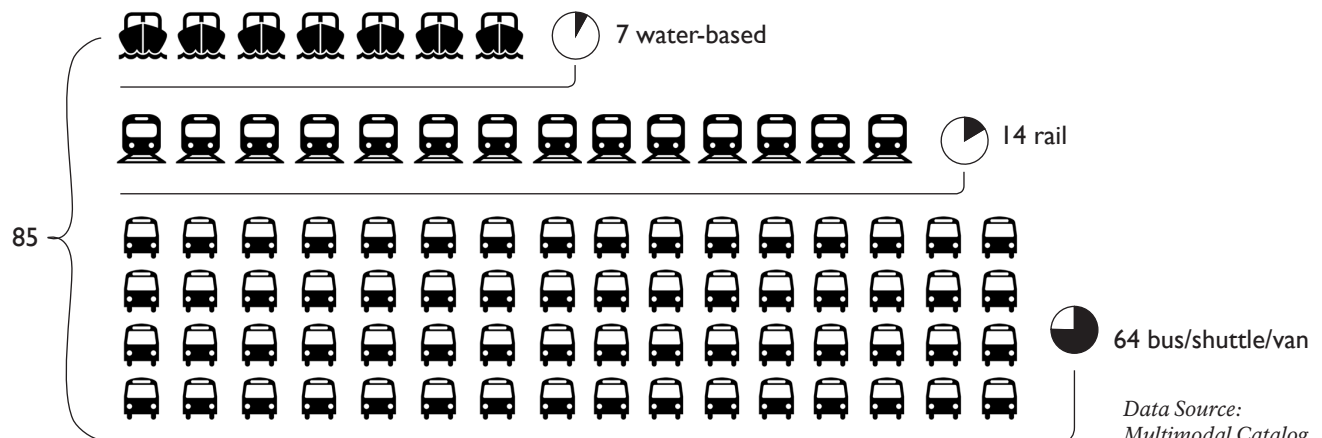
### Station Distance from Regional Trail



*“Opportunities for partnerships may exist in places where units are in or near transit districts, especially in locations where air quality fails to meet national standards—where there is added incentive for local municipalities to reduce emissions.” – Region 3 LRTP*

*“The U.S. Fish and Wildlife Service Long Range Transportation Plan supports programs and projects that would lower greenhouse gas emissions through increased use of (ATS), such as transit, cycling, or walking to, within, and through Service lands.” – Region 1 LRTP*

### Transit Systems Connecting to and within Refuges



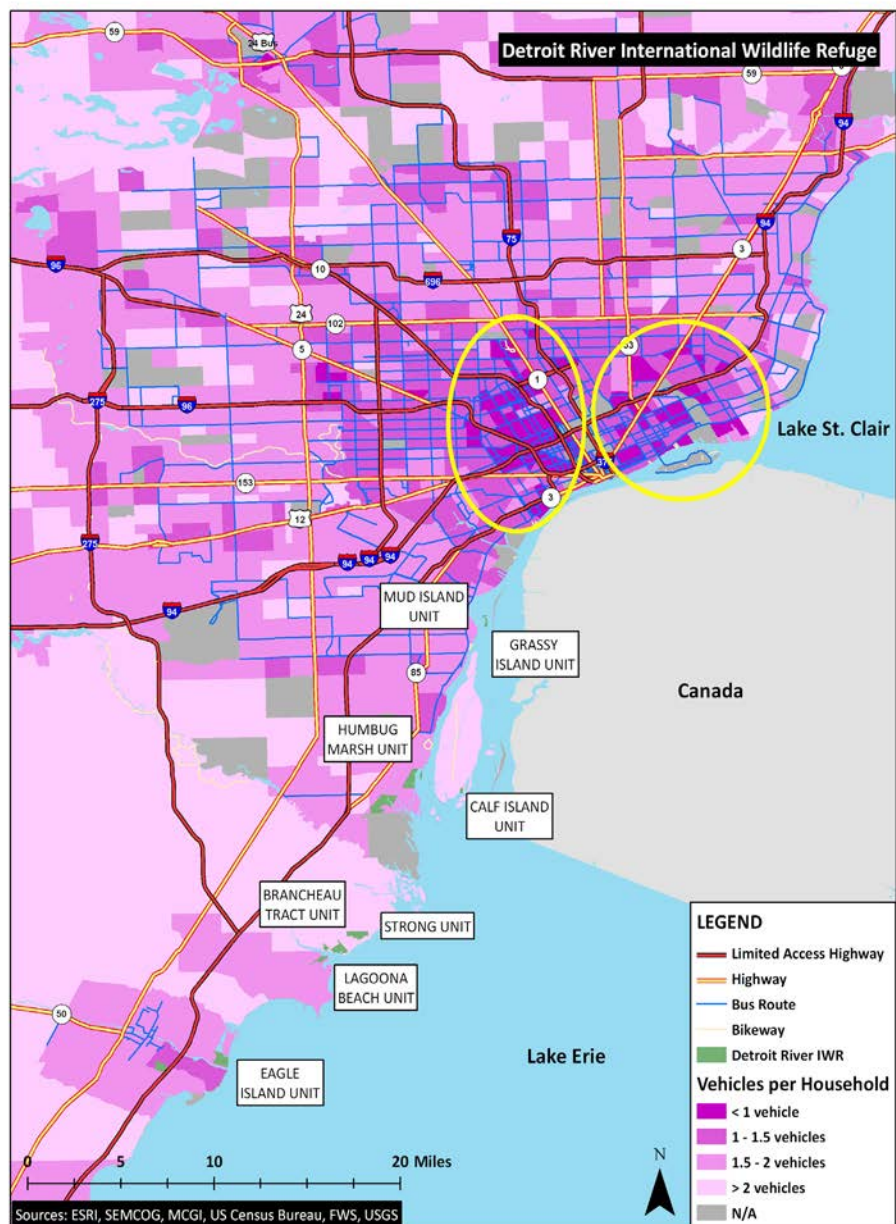
## ACCESS BY UNDERSERVED POPULATIONS

Outreach to underserved populations is a formalized priority for FWS. Underserved populations include low-income, racial and ethnic minorities, and low-car-ownership populations, as well as any communities that are currently not visiting FWS stations. Alternative transportation is a way for the FWS to offer access to these groups and help them learn about stations. While transportation is not the only barrier to visits by these groups, new ATS and mapping of existing systems can open stations to people who could not otherwise reach them.

Most RATEs include an underserved population analysis of two or three metropolitan areas. The RATEs identified three demographic variables – median household income, car ownership per household, and percentage of non-white population – to represent underserved populations. Some regions depict these variables separately, while later RATEs developed a Need Index that weighs those three variables. This index is similar to one used for other projects focused on underserved populations, such as CAR-LESS California. On the following pages are sample maps from a few regions. These analyses showed that there are many neighboring and nearby communities that are underserved and could potentially access stations better through new and different mode choices.

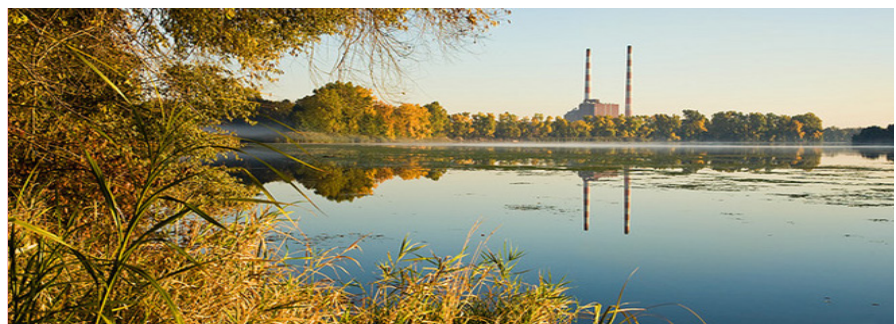
*“The total number of licensed drivers under the age of 34 actually declined between 2001 and 2012, despite an increasing population.”*  
(Beyond Traffic, pg 17)

*Photo: Detroit River International Wildlife Refuge (James Marvin Phelps, Detroit River IWR Proposal)*



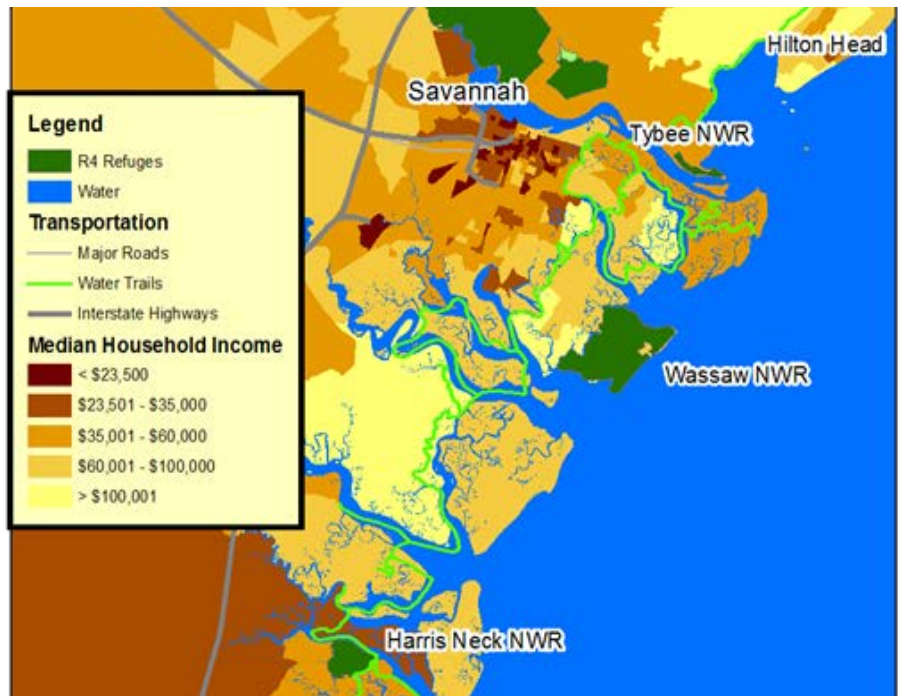
### Region 3: Detroit, Michigan – Vehicle Ownership

Detroit River International Wildlife Refuge has many units scattered near downtown Detroit, and bus routes and bikeways are nearby but do not offer direct connections. As seen on the map, the darkest purple represents households that do not own a vehicle and therefore may have limited access to the refuge units. An expanded bicycle path or bus line could improve access for the heavy concentration of car-less populations in the city center. The Refuge has received funding to connect its new visitor center to Elizabeth Park and Grosse Ile Bridge via a multi-use trail, which will be a first step in improving non-motorized connections to the Refuge.



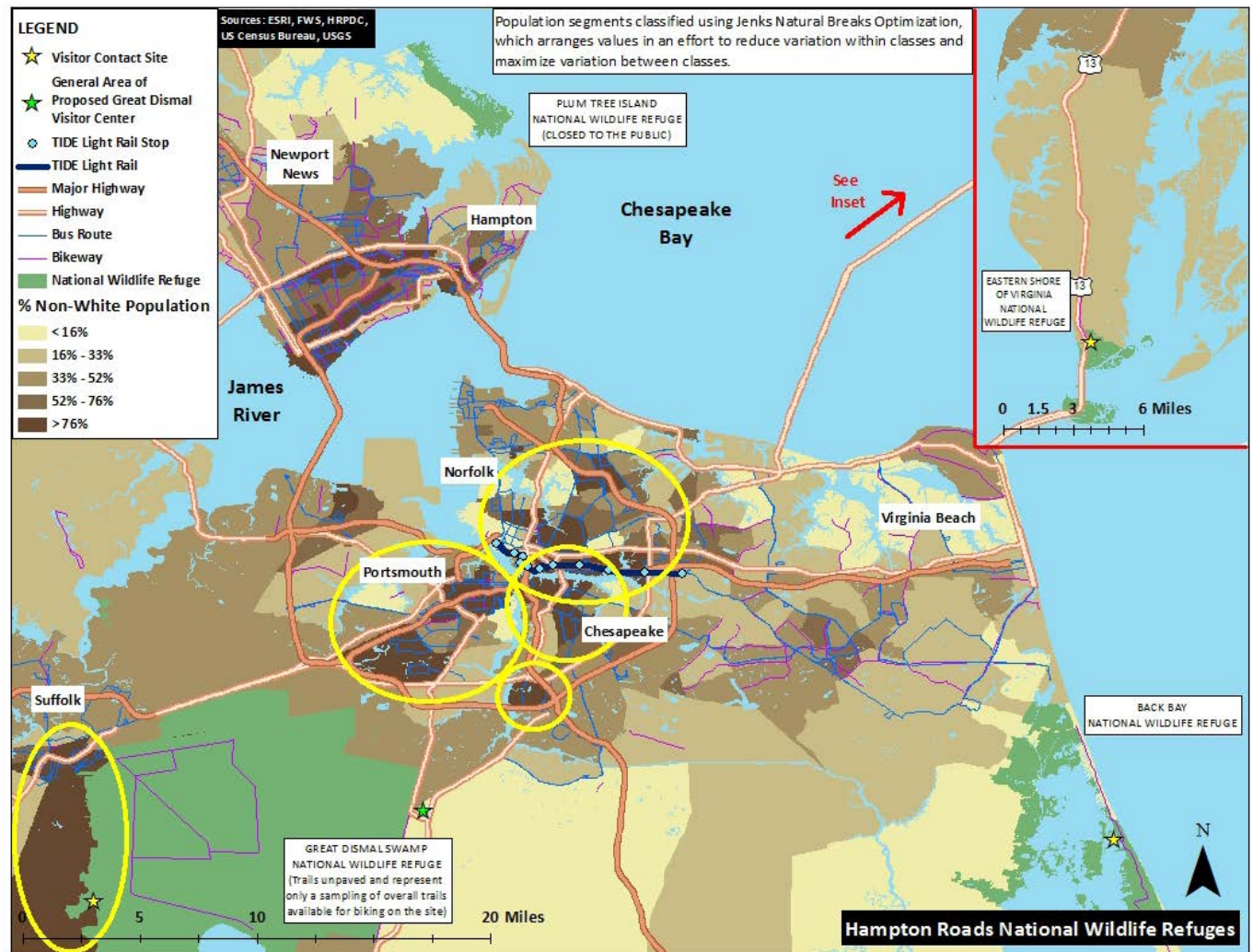
### Region 4: Savannah/ Hilton Head, Georgia – Low Income

Pockets of low-income populations reside in both rural and urban sections of the Savannah and Hilton Head area. The dark brown represents the areas of lowest median household income, and these are prevalent throughout the urban area of Savannah, highlighting the possibility to coordinate with public transit. Also of note in this area are the water trails (shown in bright green on this map), which add a unique alternative to the transportation infrastructure. In general, ATS options and increased community outreach can help increase access for refuges around Savannah.



### Region 5: Hampton Roads Region, Virginia – Non-White Population

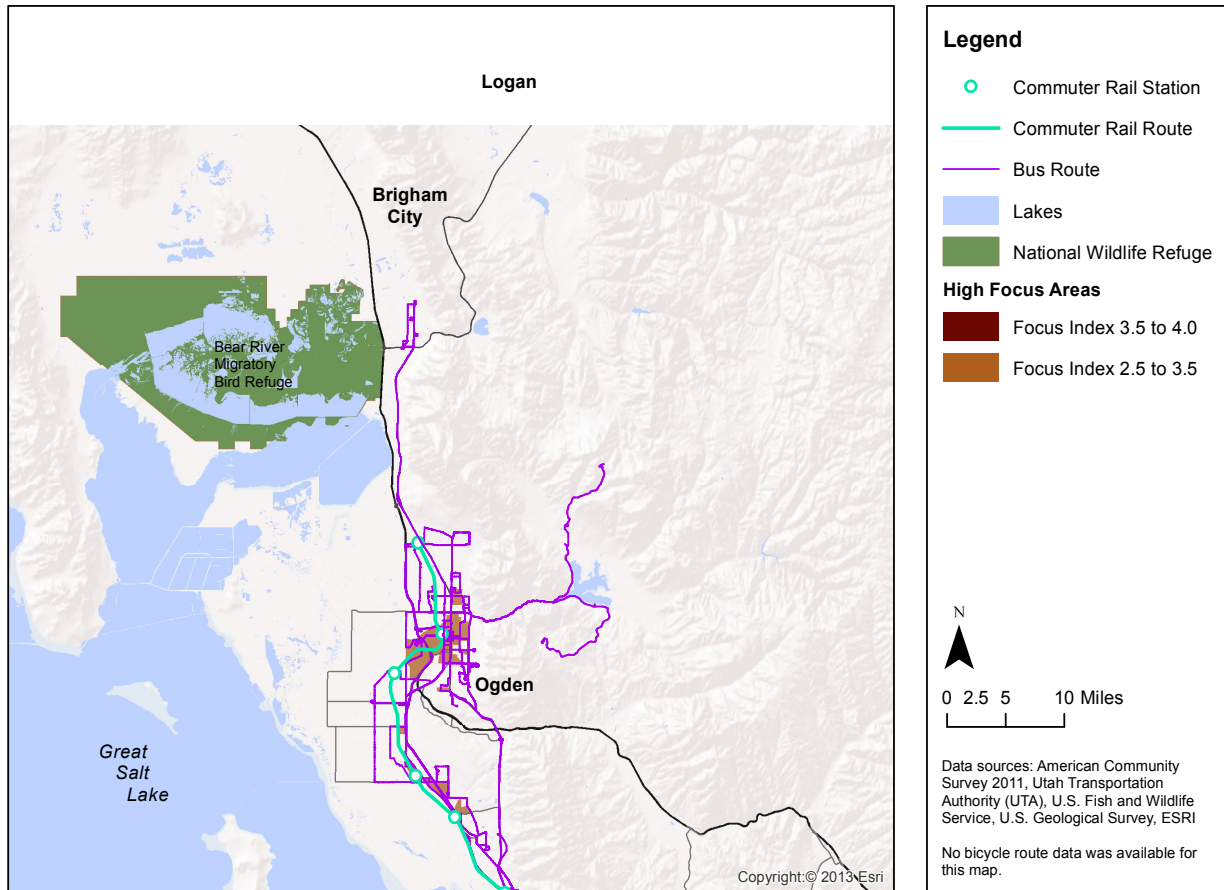
Seen below, highlighted with yellow circles, the darkest brown represents areas in which more than 75% of the population identifies as non-white. There are numerous such concentrations near urban areas in close proximity to refuge units. With several existing ATS options in the area, expanded service and facilities could improve the access of minority populations to the nearby refuges in the Hampton Roads Region in Virginia.





## Region 6: Ogden, Utah – Need Index

Region 6 calculated a Need Index based on income, race/ethnicity, and car ownership. The areas highlighted on the map below indicate populations that have increased need for improved access options to refuges. Ogden's high need population is in its downtown area, where a bus route could be slightly extended to provide access to the Bear River Migratory Bird Refuge.

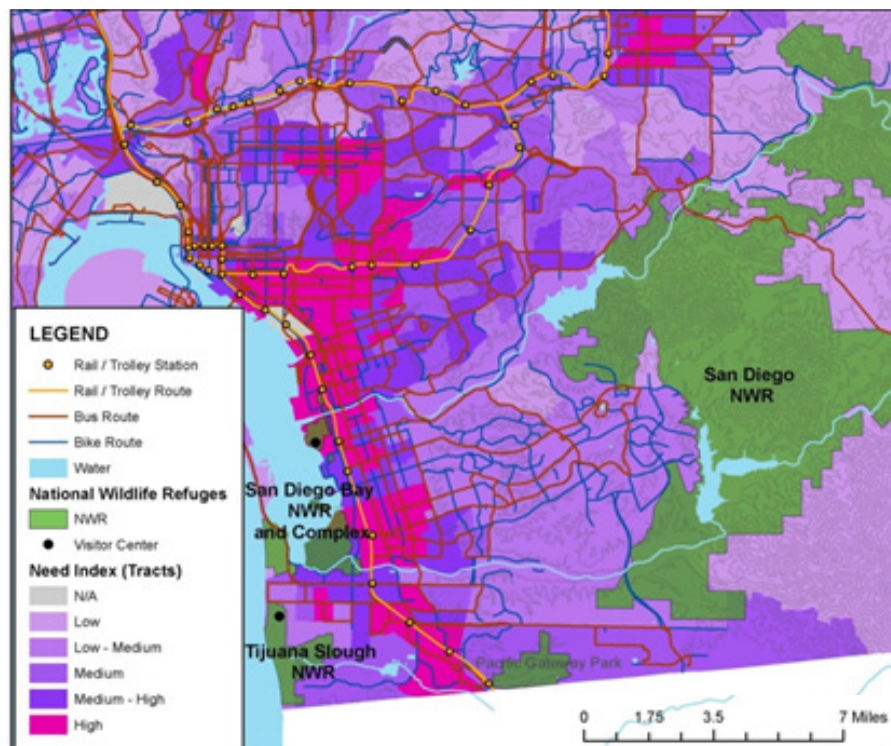


## Region 8: San Diego, California – Need Index

Region 8 also calculated a Need Index for its RATE; this was the same as was used for the US Forest Service-led CAR-LESS California Initiative. The San Diego National Wildlife Refuge Complex is surrounded by a large number of high need households, and staff can look at ways ATS can help encourage their visitation.



Tijuana Slough NWR (Volpe)

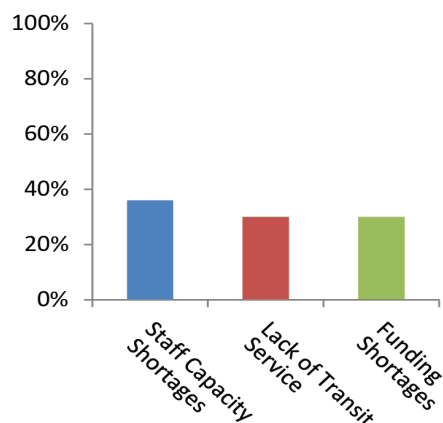


# ATS NEEDS ACROSS THE SERVICE

RATEs presented an opportunity for FWS and USDOT staff to talk to station and regional staff about what is important to them in managing visitors and access. Through the questionnaire and site visits, the RATEs uncovered many of ATS needs.

The most frequently cited challenges and needs seemed to be ones outside of FWS control. The chart below compares the top three.

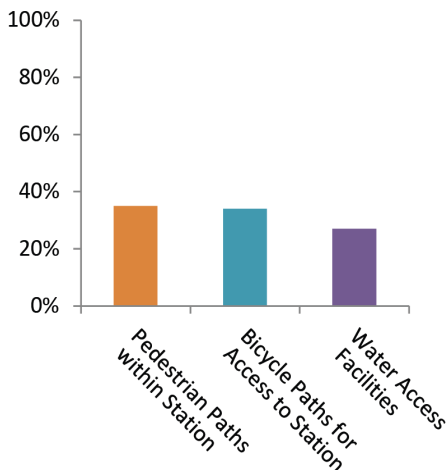
## Most Frequently Cited Challenges



Shuttle at Santa Ana NWR (Volpe)

Stations also cited their most-needed improvements related to ATS. The top three are displayed in the chart below.

## Most Needed Improvements



Station managers also responded with numerous ideas for new and improved ATS to access their stations:

- Bicycle/pedestrian paths for access to station

37 stations requested new or improved bike paths to and within stations, which is especially important considering how few stations currently have visitors that use bikes to access stations.

- Promotion and marketing for existing and potential ATS



Kayaks on lagoon at Merritt Island NWR (FWS)

- New internal transit service
  - o Sixteen stations called for internal transit – mostly seasonal – to add additional interpretive services to visitors.
  - o See box on page 5 (Merritt Island and Nantucket NWRs)

- Transit for special events

Bear River NWR (Region 6) in Utah uses vans during special events to transport visitors around the refuge.

Minnesota Valley NWR (Region 3) occasionally rents 16- or 24-passenger shuttles or vans for special events.



Shuttle service at Sweetwater Marsh NWR (Volpe)

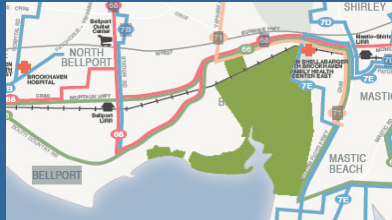
## Wichita Mountains

The Wichita Mountains Wildlife Refuge, outside of Lawton, Oklahoma, recently completed a comprehensive alternative transportation plan to help visitors move from overcrowded, sensitive sites near and within the Charons Garden Wilderness Area to new and planned recreational opportunities on the eastern side of the refuge. The refuge recently received implementation funds for construction of a nonmotorized trail connecting to nearby Fort Sill and is working with Oklahoma DOT to improve bicycle safety on a state highway approaching the refuge's busiest gate. In addition, the refuge is part of an intelligent transportation system pilot program with Federal Lands Highway. Photo: bicyclists at Wichita Mountains NWR (Volpe)



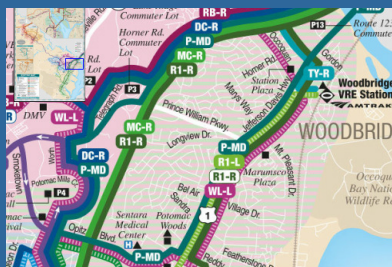
# FWS ACCOMPLISHMENTS IN TRANSIT AND TRAILS

## Occoquan Bay & Wertheim NWR



*Suffolk County Transit (SCT)/ Long Island Railroad (LIRR), and Amtrak, with Wertheim NWR (SCT)*

The Volpe Center and Region 5 staff assisted Occoquan Bay National Wildlife Refuge and Wertheim National Wildlife Refuge in promoting existing transit connections to their refuges. Through relationships with Suffolk County Transit, Long Island Rail Road, Virginia Railway Express, and the Potomac and Rappahannock Transportation Commission (PRTC), both refuges now offer online directions for accessing the refuge via bus and rail and the refuges were added to transit maps. These efforts also included outreach to the larger regional populations for awareness, education, and access to the refuge, including coordination with non-FWS nature-based tourism campaigns.



*Potomac and Rappahannock Transportation Commission, with Occoquan Bay NWR (PRTC)*

## TAGs at NWRs

A technical assistance group (TAG) identified ATS challenges for Great Dismal Swamp NWR and actionable solutions the staff could implement in the short-, medium-, and long-terms. Since the TAG in June 2014, Great Dismal Swamp NWR staff and the TAG team worked with Hampton Roads Transit to include the refuge boundaries on transit maps.

## Bicycle Traffic at Chincoteague NWR

The Chincoteague National Wildlife Refuge on the Eastern Shore of Virginia is the most visited refuge in the country; it also has the National Wildlife Refuge System's highest bicycle traffic. With over 1.3 million visitors and 358,207 bicyclists a year, the refuge sought to reduce modal conflicts and improve bicycle safety along the causeway and entrance between the refuge and its gateway community. Partnering with the Town of Chincoteague, the refuge received grant funds to construct a bicycle and pedestrian bridge along the causeway and construct bicycle lanes on the main town road that approaches the refuge.



*Bicycle striping at Chincoteague NWR (Volpe)*

## Bosque del Apache

Partnerships take many forms; one standout is at Bosque del Apache NWR (Region 2), where the Friends Group has a school bus scholarship fund that raises funds to help offset some of the transportation costs for school groups to visit the refuge.

## Crystal River NWR

Following a site visit related to the Region 4 RATE, Crystal River NWR submitted a Federal Lands Access Program (FLAP) application to develop an entrance to its recently-acquired Three Sisters Springs site by constructing an access road for transit or tour vehicles. The road will also include a bicycle and pedestrian connection to an existing city-owned bicycle and pedestrian path. The FLAP project was funded by Eastern Federal Lands in 2014.

## Federal Lands Access Program – Steigerwald NWR

The Federal Lands Access Program (FLAP) funded signage for a new transit stop at Steigerwald NWR, combined with expanded weekend bus service for Skamania County (Washington). Federal Lands Highway, Skamania County, Washington DOT, and the refuge worked together to add a stop at the refuge parking lot in 2014. The bus offers service from the transit center in East Vancouver, Washington, to Stephenson, WA.



*CTrans (Clark County Transit) bus near Steigerwald (Volpe)*

## Rocky Mountain Arsenal NWR

Rocky Mountain Arsenal NWR received two Transit in the Parks (TRIP) program grants to fund transit operations. The Refuge and Commerce City received a total of three TRIP grants (in 2006, 2007, and 2010) for bus acquisition and transit planning. The refuge currently owns and operates three transit vehicles: one 34-passenger bus, one 16-passenger shuttle, and one 14-passenger van. These vehicles are driven by FWS staff and volunteers from the refuge's friends group on a 13-mile loop through the refuge and the cost is free. The loop takes 1.5 hours, and a FWS staff or a volunteer provides interpretation along the way.



*Bus at Rocky Mountain Arsenal (Volpe)*

U.S. Fish & Wildlife Service

<http://www.fws.gov>

