

# E. Environmental Mitigation Strategies

## Introduction

The Capital Region is rich in pristine natural resources, with the largest national forest in Florida, eight large natural springs, a network of recreational trails, countless horse farms, and a vast landscape of countryside. The region contains a diverse range of natural resources shaped by the Red Hills region bordered by coastal ecosystems to the south. The region is characterized by rolling hills, hardwood forests, pine flatwoods, and productive agricultural lands, as well as abundant surface and groundwater resources connected to the Floridan Aquifer. Numerous rivers, lakes, and springs - including the Wakulla River and Wakulla Springs - support high-quality freshwater habitats and recreational opportunities. Wetlands, floodplains, and conservation lands throughout the region also provide critical wildlife habitat for species such as wading birds, gopher tortoises, and other threatened or endangered species.

## Natural Resources in the Capital Region

It is incumbent on planners to consider the impacts of transportation infrastructure on the region's natural resources and to identify negative impacts early in the planning process. One of the important elements of the Regional Mobility Plan (RMP) needs assessment and project prioritization process is the consideration of the environmentally sensitive areas in close proximity to identified roadway improvements in the scoring process. The natural resources incorporated in the analysis, described in **Chapter 5 Needs Assessment and Prioritization**, include the Florida Natural Areas Inventory (see **Figure E-1**), National Wetlands Inventory (see **Figure E-2**), and Marine Protected Areas along the southern border of Wakulla and Jefferson counties (see **Figure E-3**). In addition to the 430 square miles within Leon and Wakulla counties comprising the Apalachicola National Forest, the region contains 90 square miles of state parks and state forests, 900 square miles of wetlands, and 190 square miles of marine protected areas.



**430** square miles of Apalachicola National Forest



**90** square miles state parks and state forests



**900** square miles of wetlands



**190** square miles of marine protected areas

Figure E-1. Florida Natural Resource Inventory

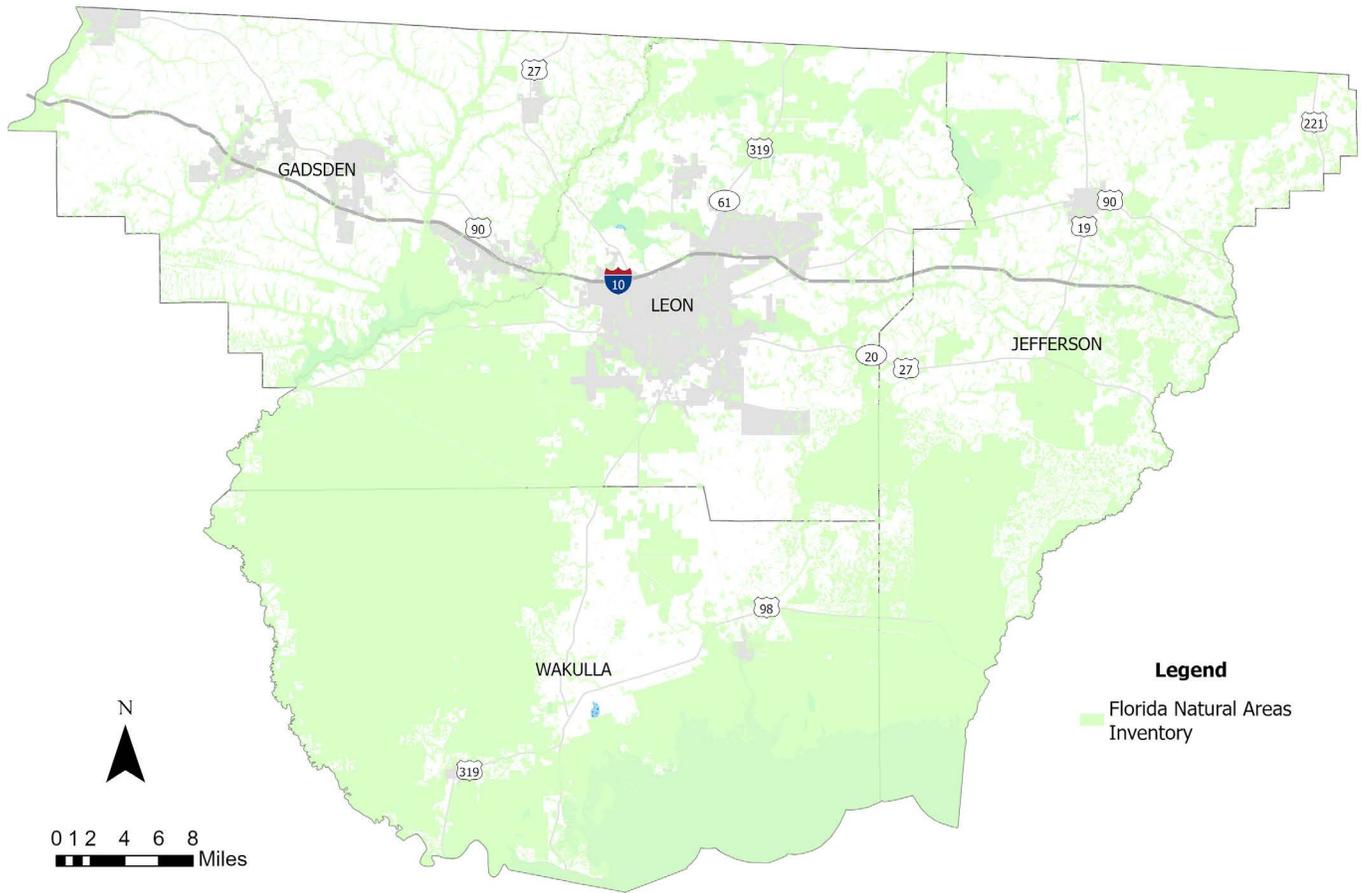


Figure E-2. National Wetland Inventory

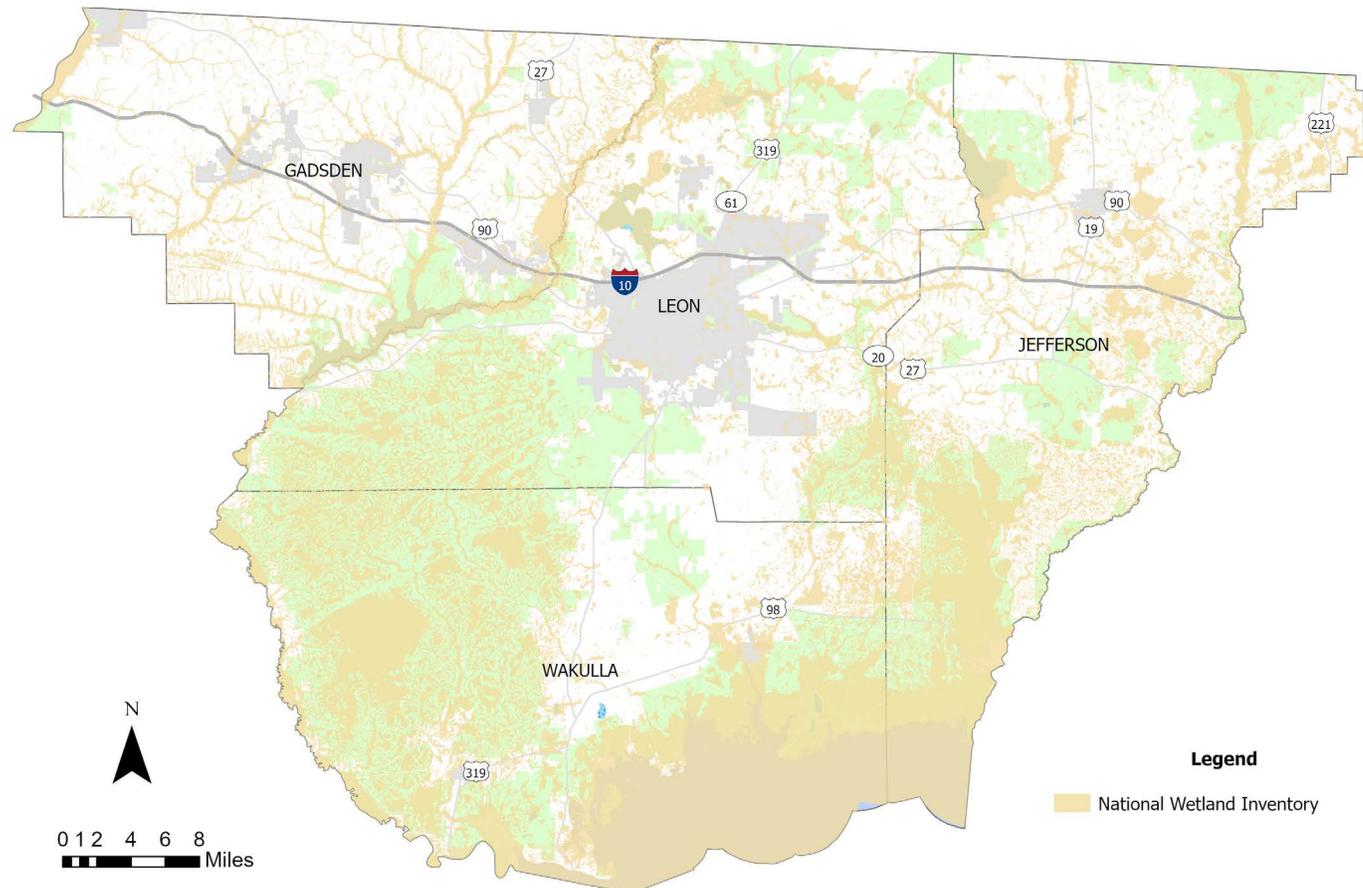
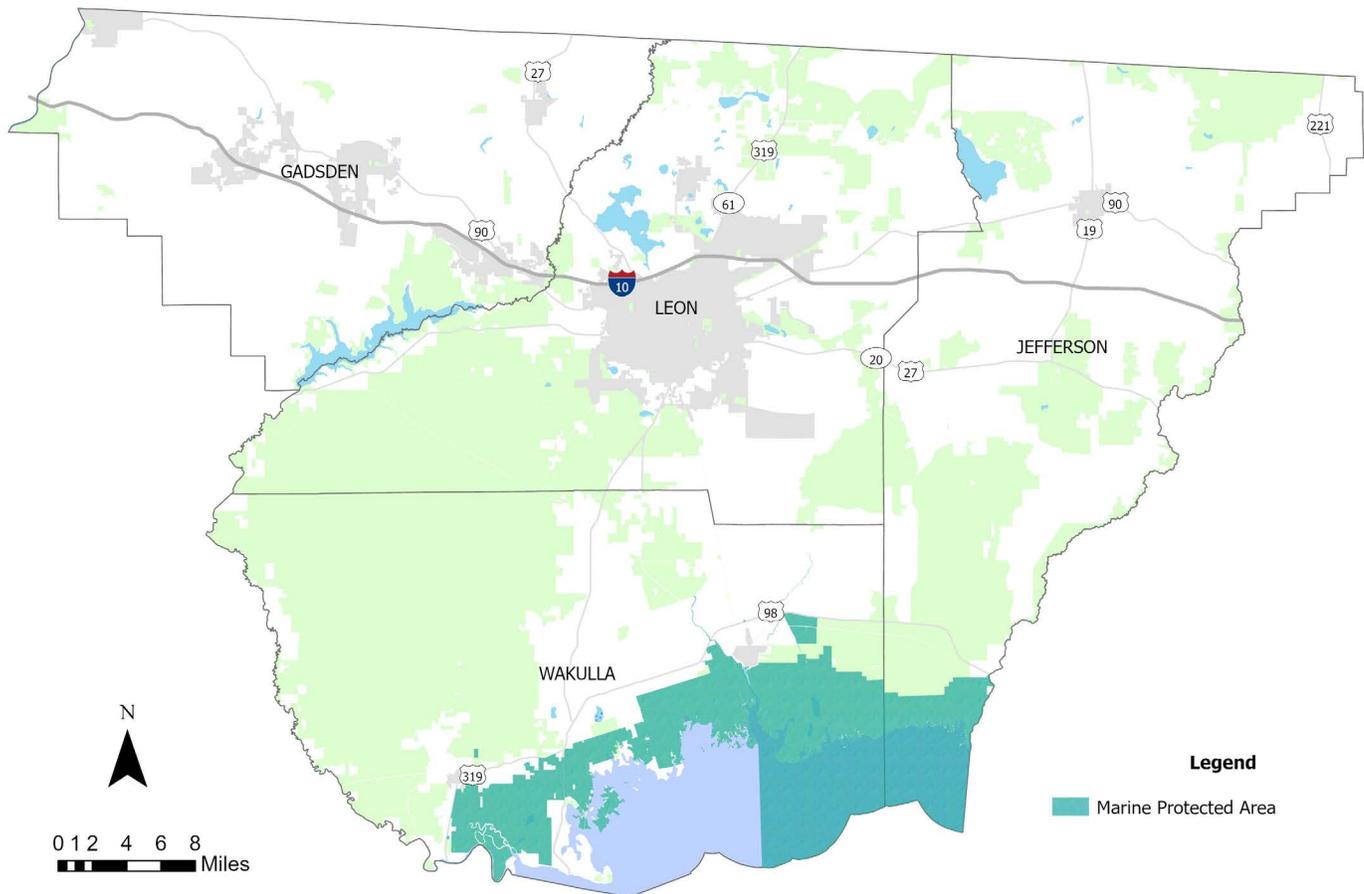


Figure E-3. Marine Protected Area



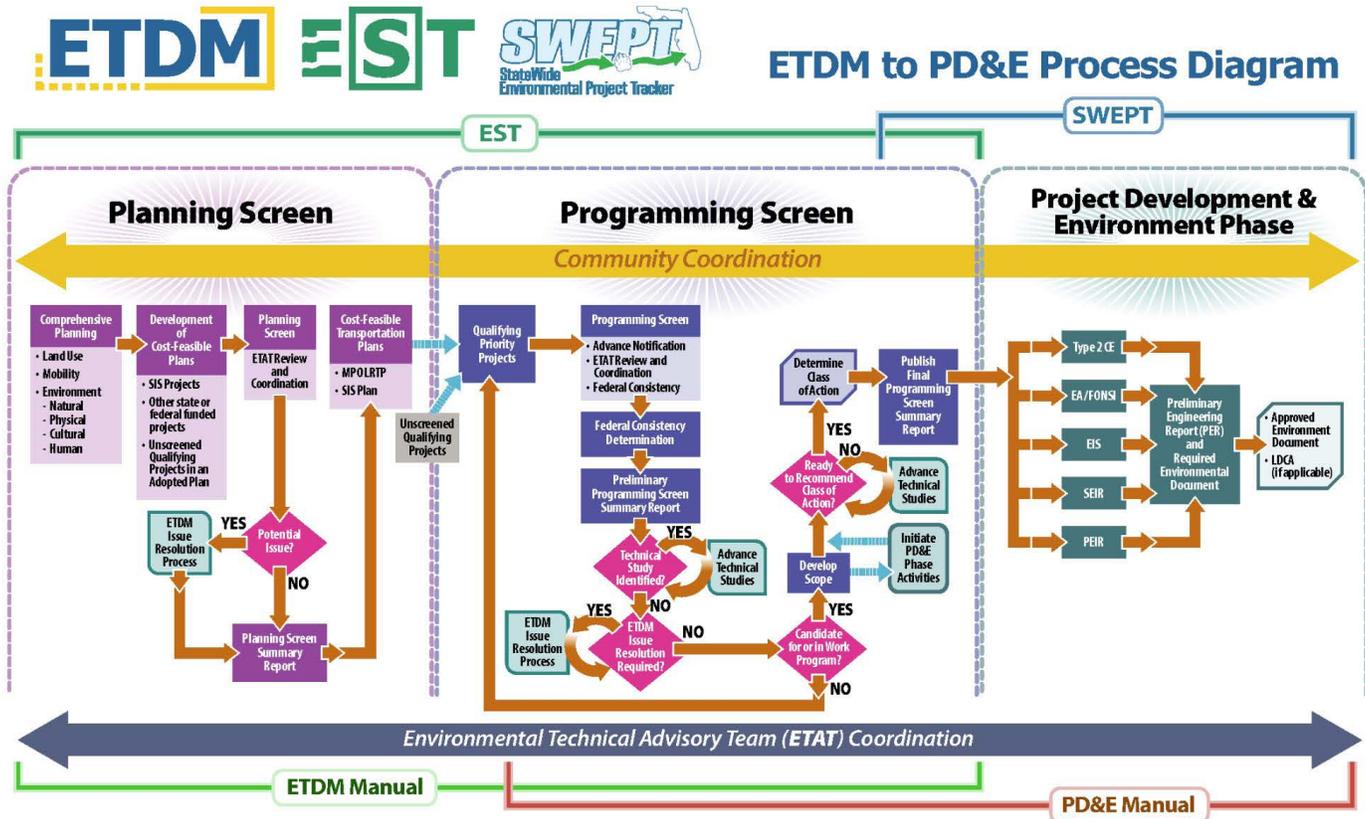
## Mitigation

Roadway improvement projects must balance transportation needs with environmental protection through a variety of mitigation strategies. At the state level, the Florida Department of Transportation (FDOT) and associated agencies are required to assess the environmental impacts of transportation projects - including effects on wetlands, surface waters, and threatened or endangered species - and then provide mitigation that offsets unavoidable impacts. This often involves compensatory wetland mitigation, where wetland enhancement, restoration, creation, or preservation projects are implemented either on or off-site, or via mitigation bank credits, to replace ecological functions lost due to roadway work. The state's Uniform Mitigation Assessment Method (UMAM) is used to evaluate the ecological value of impacted habitats and guide appropriate mitigation actions.

An early first step in the project development process that occurs before major roadway improvements are advanced includes the application of FDOT's Efficient Transportation Decision Making (ETDM) screening<sup>1</sup>. The ETDM screening process is a collaborative, web-based approach used to complete an environmental review of projects early in the decision-making process. Screenings are typically completed during the project planning phase and again at the programming phase (see **Figure E-4**).

<sup>1</sup> <https://www.fdot.gov/environment/oem-divisions/qa-qc/etdm-manual>

Figure E-4. FDOT ETDM Process



ETDM brings together federal and state agencies, local governments, and stakeholders to identify potential environmental, community, and permitting issues before significant resources are committed to the project. All the projects funded in the RMP Cost Feasible Plan have undergone ETDM Planning and/or Programming screenings as of the adoption of the RMP.

At the county level, environmental considerations are integrated into permitting and development processes. For projects that may affect water quality, wetlands, floodplains, or native habitats, developers - including those building or improving roads - must secure environmental permits that require natural feature inventories and impact analyses, with conditions to preserve sensitive features where feasible. These local safeguards help inform mitigation measures such as maintaining buffer zones, controlling stormwater runoff, and preserving tree canopy.

Additionally, projects in Leon County have included the incorporation of design features like wildlife crossings to reduce habitat fragmentation and vehicle-wildlife collisions. The Orchard Pond Parkway, constructed in 2016, is an example of this strategy<sup>2</sup>.

**Table E-1** outlines a variety of mitigation strategies that can be implemented to minimize and/or mitigate negative impacts to the region's natural resources.

<sup>2</sup> [https://www.fhwa.dot.gov/ipd/project\\_profiles/fl\\_orchard\\_pond\\_parkway.aspx](https://www.fhwa.dot.gov/ipd/project_profiles/fl_orchard_pond_parkway.aspx)

**Table E-1. Potential Mitigation Strategies by Resource Type**

Resource	Mitigation Strategy	Purpose/Description
<b>Wetlands &amp; Surface Waters</b>	Wetland avoidance through design shifts	Avoid building in wetlands where possible during project planning.
	Mitigation Banking	Offset wetland impacts by purchasing mitigation bank credits.
	On-site or off-site mitigation areas	Build mitigation sites within or near impacted basins to maintain hydrologic and ecological functions.
<b>Stormwater Management</b>	Stormwater treatment ponds/basins	Capture and treat roadway runoff before discharge.
	NPDES compliance & BMPs	Implement erosion and sediment control, spill containment, and pollution prevention per permits.
<b>Habitat &amp; Wildlife</b>	Wildlife crossing structures	Construct overpasses or underpasses (culverts) to facilitate safe wildlife crossings
	Preservation of existing habitat	Protect adjacent natural vegetation or restore affected areas.
	Buffer zones	Establish setbacks from habitat or watercourses to reduce edge effects.
<b>Vegetation &amp; Aesthetics</b>	Use of native plantings & selective clearing	Maintain local biodiversity and minimize invasive species spread.
<b>Erosion &amp; Sediment Control</b>	Perimeter stabilization and vegetative cover	Minimize soil loss to waterbodies during construction.
	Temporary erosion control BMPs (silt fences, mats)	Protect adjacent land and/or water bodies from construction sediment.

Overall, these mitigation approaches reflect a layered framework where state statutes, water management district plans, and local environmental permitting can work together to ensure that roadway improvements in the Capital Region proceed with minimized environmental impacts and/or compensated through restoration, preservation, and design strategies that benefit water quality, habitat continuity, and ecosystem health.

### Mitigation Banking

The use of mitigation banks is a common approach to mitigate the impacts of land development to natural wetland systems, when actual impacts are inevitable. Mitigation banks typically perform enhancement, restoration, creation and/or preservation improvements at the regional scale. Over time, as these improvements satisfy various performance criteria, mitigation credits become available for purchase. Mitigation banks include both federally and state approved banks that can be either publicly or privately owned. Bank owners are perpetually responsible for the maintenance and operation of the restored/created ecosystems they create.

State law offers FDOT the opportunity to coordinate environmental mitigation with the Northwest Florida Water Management District (NFWFMD), in regions where private mitigation banks are unavailable or unable to provide required credits. NFWFMD incorporates these mitigation activities into a broader watershed management process. A map from the NFWFMD 2025 Regional Mitigation Plan Update depicting the private and NFWFMD mitigation areas for the entire district is depicted in **Figure E- 5**. The NFWFMD In-Lieu Fee (ILF) service area is a compensatory wetland mitigation area that primarily serves FDOT roadway projects.

**Figure E-5. NFWFMD Mitigation Service Area**

