2

Section 4

Environmental Profile

Protecting and preserving the valued natural resources of Northern Colorado remains a top priority for the NFRMPO. When designing, evaluating, and constructing transportation projects, it is important to consider and mitigate potential impacts on the region's environmental systems and resources, both natural and man-made.

To the extent practicable, adverse environmental impacts should be avoided completely. If negative impacts cannot be avoided, mitigation techniques can help reduce or neutralize the overall environmental harm. Mitigation may include programs, policies, strategies, or actions targeted specifically at reducing the negative environmental impact of a transportation project.

The scale of the 2045 RTP is not designed to evaluate project-specific impacts; project-specific environmental impacts and mitigation strategies are governed through the National Environmental Policy Act (NEPA) and handled by CDOT and project sponsors. For more information, visit: https://www.epa.gov/nepa

Still, the following sub-sections may serve as an overview of the environmental resources contained within the North Front Range and general mitigation strategies intended to address potential adverse environmental impacts of transportation projects on agricultural systems, air quality, historic and archaeological sites, threatened and endangered species, and water and wetlands.

A. Agriculture

Agriculture in the North Front Range is a major contributor to the economic vitality of the region. With over 2.5 M acres of agricultural land, Weld County is one of the largest agricultural centers in Colorado. A large percentage of the rural land under cultivation within the North Front Range region is irrigated by an intricate network of canals. These canals and their lateral ditches are crossed by streets, roads, highways, bike paths, sidewalks, and railroads.

These crossings can pose engineering, project scheduling, and funding/contractual challenges during the development and implementation of transportation projects. These risks are covered in more detail in **Chapter 2, Section 5**.

Additionally, the conversion of agricultural land for urban and transportation uses poses a challenge region-wide.

B. Air Quality

Transportation-related emissions are a major source of air pollutants, including Carbon Monoxide (CO), Ozone, and Particulate Matter (PM). In the past, portions of the region were in violation of the National Ambient Air Quality Standards (NAAQS) for CO. Fort Collins was designated nonattainment for CO in 1979 with their last violation in 1991. Greeley was designated nonattainment in 1977 with their last violation in 1988.

The North Front Range area is currently in violation of two Ozone standards and is designated as a Moderate Nonattainment Area for the 2008 Ozone NAAQS and a Marginal Nonattainment Area for the 2015 Ozone NAAQS.

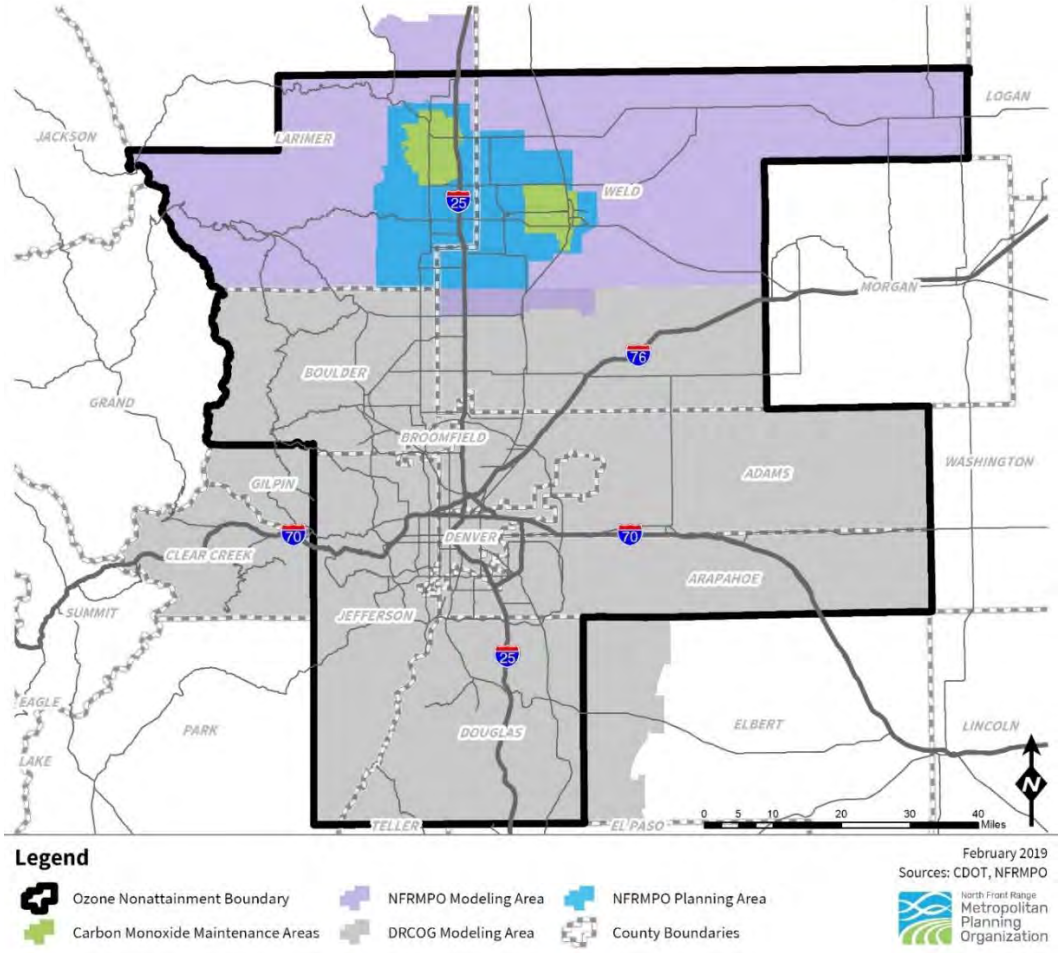
In 1993, the Governor of Colorado designated the NFRT&AQPC as the lead air quality planning organization charged with managing air quality for the Greeley and Fort Collins CO Maintenance Areas. In July 2013, the Governor of Colorado designated the RAQC as the lead air quality planning agency for the entire Denver Metro/North Front Range Ozone Nonattainment Area.

The NFRT&AQPC and the RAQC, in cooperation with the Colorado Department of Public Health and the Environment Air Pollution Control Division (CDPHE-APCD), Colorado Department of Transportation (CDOT), and local governments are responsible for development and implementation of transportation-related air quality planning projects within the NFRMPO Modeling Boundary, **Figure 2-36**.

A summary of the conformity documentation for the Greeley and Fort Collins CO Maintenance Plans and for the Denver-North Front Range Ozone State Implementation Plan (SIP) is provided in **Appendix A.**

Across the region, strategies are being implemented to reduce emissions from transportation. Strategies include a regional vanpool program, regional transit planning, and coordination with the Bustang interregional bus service, funded by CDOT, along the I-25 Corridor between Fort Collins and Denver. The 2019 Congestion Management Plan (CMP) details the strategies available to help reduce VMT region-wide.

Figure 2-36: 8-Hour Ozone Non-Attainment and Carbon Monoxide Maintenance Areas



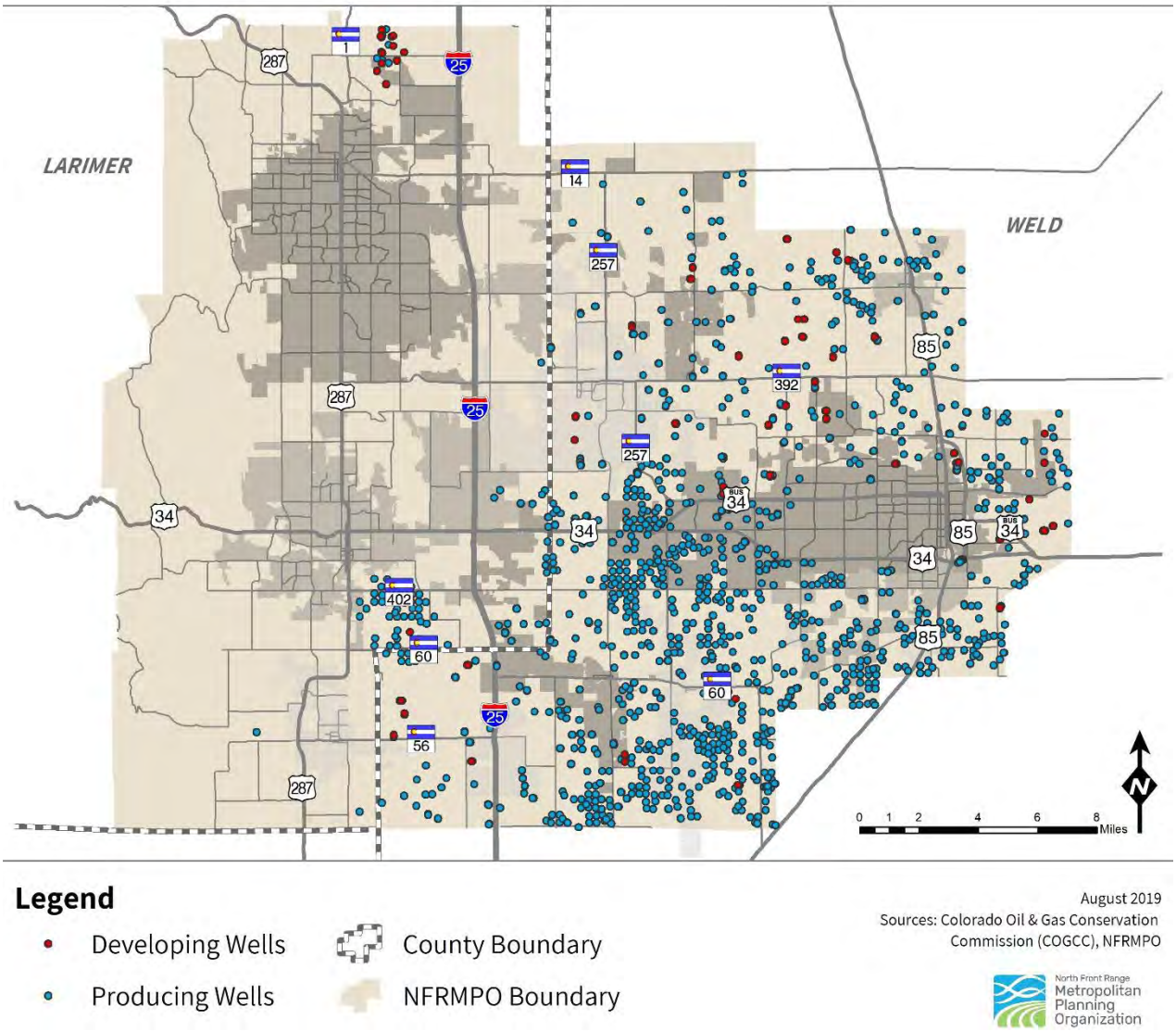
Energy

Significant oil and gas production has been underway in the region for most of the past century. In fact, much of the economic growth in Weld County has been a result of the oil and gas

industry. In 2018, Weld County produced 157,710,006 barrels of oil out of 177,497,119 barrels produced Statewide.[13] By comparison, Larimer County produced 4,024,049 barrels in 2018. **Figure 2-37** shows the 2,338 productive wells and the 376 developing wells within the NFRMPO planning area. The presence of a thriving oil and gas industry has impacted the region's air quality due to the emission of gaseous pollutants from well production and midstream facilities. Additionally, while oil and gas pipeline capacity is increasing in the region, a large amount of petroleum is still being transported by truck, which results in emissions from heavy-duty vehicles. Only transportation-related emissions are considered as part of the NFRMPO air quality conformity modeling and analysis.

[13] COGCC Data: https://cogcc.state.co.us/data.html#/cogis

Figure 2-37: Active Oil and Gas Wells



C. Historic and Archeological Sites

Section 106 of the National Historic Preservation Act (NHPA) outlines the process federal agencies and their designated representatives must follow when planning projects with the potential to affect significant historic and prehistoric properties. The Colorado State Register of Historic Places and the National Register of Historic Properties identify sites, areas, and communities that reflect the State's cultural heritage and resources. Areas and sites on the National Register of Historic Properties are automatically added to the Colorado State Register of Historic Places. **Figure 2-38** displays the sites located within the North Front Range planning boundary.

Additional sites may be added as deemed necessary with the help of historians or archaeologists. As each community grows, they must evaluate the potential impacts of transportation improvements on identified historic and archaeological sites.

For construction projects and many maintenance activities, a certified historian and an archaeologist conduct on-the-ground surveys to identify, record, and evaluate cultural resources for eligibility to the National Register of Historic Places. When significant sites are identified within a proposed project area, an interdisciplinary team determines how best to avoid the sites or minimize adverse impacts during construction.

2020 Colorado Statewide Preservation Plan

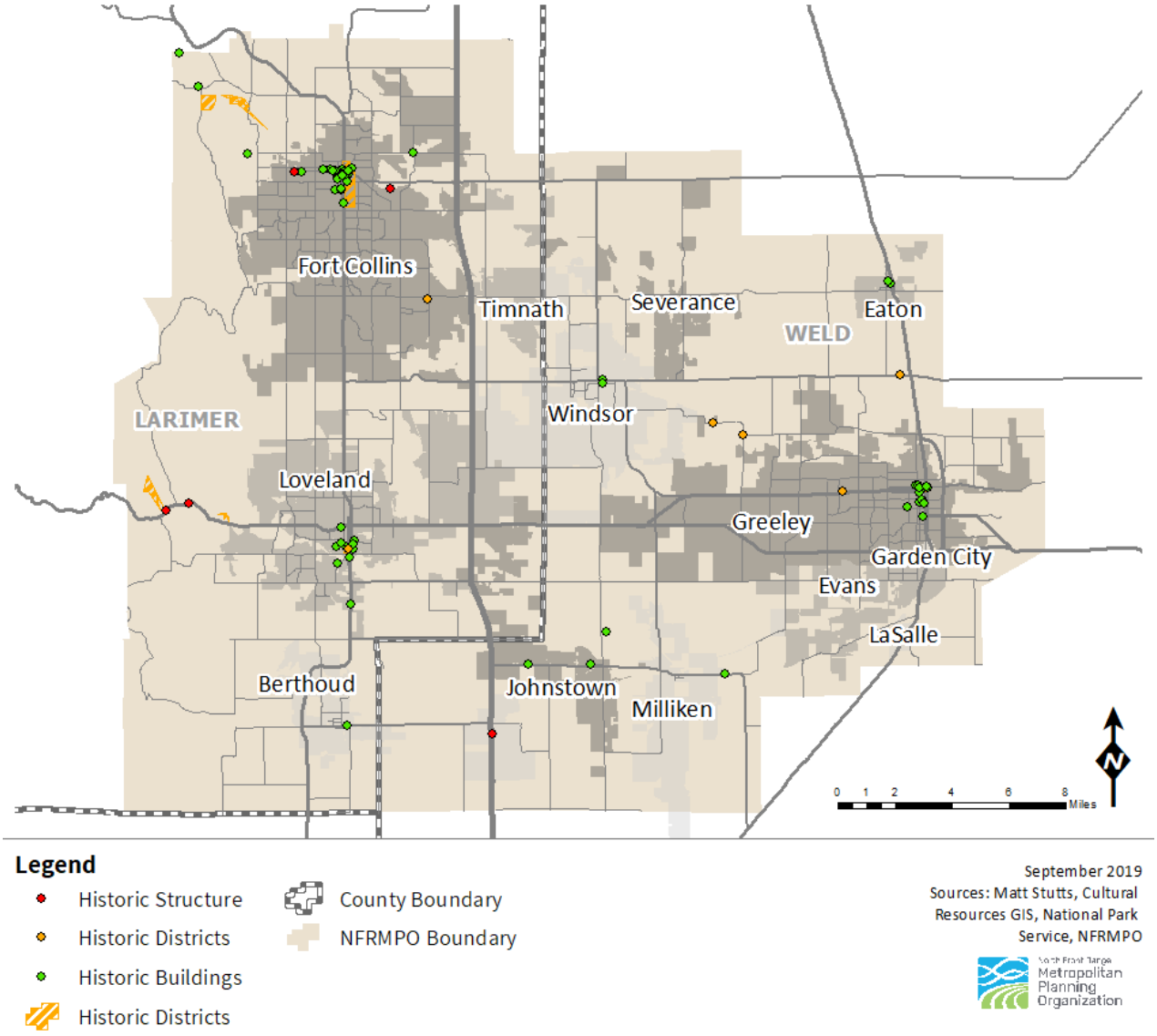
Colorado is required to update its Statewide Preservation Plan every 10 years. The underlying objective of this Plan is to safeguard places, traditions, cultural connections, and the richness of Colorado's heritage through education.[14] The 2020 Colorado Statewide Preservation Plan lists six overall goals for historic preservation in the State that build off the overarching objective:

1. Preserving the Places that Matter
2. Strengthening and Connecting the Colorado Preservation Network
3. Shaping the Preservation Message
4. Publicizing the Benefits of Preservation
5. Weaving Preservation Throughout Education
6. Advancing Preservation Practices

Using this preservation plan as a guide, communities can make informed decisions about how transportation planning impacts historic preservation within the North Front Range. The Statewide Preservation Plan can be found online at the Office of Archaeology and Historic Preservation's website (historycolorado.org).

[14] http://www.historycolorado.org/sites/default/files/files/OAHP/Programs/StatePlan.pdf, 2014

Figure 2-38: Historic Sites



D. Threatened and Endangered Species

The NFRMPO recognizes threatened and endangered bird, mammal, plant, and fish species inhabit Larimer and Weld counties. Animals identified as threatened in the region include the Canada Lynx, the North American Wolverine, the Preble's Meadow Jumping Mouse, the Mexican Spotted Owl, the Piping Plover, and the Greenback Cutthroat Trout. Endangered species inhabiting the North Front Range include the Least Tern, Whooping Crane, and the Pallid Sturgeon.[15] Preserving and developing suitable habitat to support key species is central to maintaining the region's valuable biodiversity. While the region does not contain any "critical

[15] https://ecos.fws.gov/ipac/location/TBLTWAH64NHYFKFGJUFAF5BGUM/resources

habitat," defined as habitat essential for the conservation of threatened or endangered species, many threatened and important species live in or migrate through the North Front Range. **Figure 2-39** shows habitat for some of the region's important species as identified by Colorado Parks and Wildlife (CPW).

Canada Lynx, Source: Flickr.

Additionally, the Colorado Natural Heritage Program (CNHP) identifies Potential Conservation Areas (PCA) Statewide. A PCA is an ecologically sensitive area depended upon by species, suites of species, or a natural community for its continued existence.[16] **Figure 2-40** identifies these areas within the NFRMPO. These areas are the best estimate of the primary area required to support the long-term survival of targeted species or natural communities.

The size and configuration of a PCA is dictated by what species, communities, or systems the CNHP seeks to conserve at a given location. The PCAs do not necessarily preclude human activities, but the target species' ability to function naturally might be greatly influenced by them, and the areas may require management to limit human use. The areas with "very high" and "high" biodiversity significance are generally found around Horsetooth Reservoir, Devil's Backbone, hogbacks, and along waterways in the foothills on the western edge of the region. The area along the South Platte River also has moderate biodiversity interest.

The Regionally Significant Corridors (RSCs) identified in **Chapter 2** have minimal contact with the PCAs, with the main contact points crossing over rivers. Proposed bicycle and pedestrian trails could potentially have more of an impact on the PCAs than RSCs, especially along the South Platte River because of its biodiversity interest.

Whooping Crane, Source: Flickr.

Short-Grass Prairie Initiative

In 2001 CDOT began the Short-Grass Prairie Initiative (SGPI), a partnership amongst the Nature Conservancy, United States Fish and Wildlife Service (USFWS), and other federal agencies, to protect up to 50,000 acres of the short-grass prairie in eastern Colorado. SGPI allows CDOT to offset project impacts by contributing to the creation of similar habitat elsewhere in the State that have been created through the SGPI. CPW is responsible for protecting and preserving the State's fish and wildlife resources through conservation, recreation, and wildlife management activities.[17]

[16] http://www.landscope.org/colorado/priorities/cnhp_pca/

[17] CPW, 2015 (http://cpw.state.co.us/aboutus/)

Colorado Senate Bill 13-40 requires any agency of the State to obtain wildlife certification from CPW when the agency plans construction in any stream or its bank or tributaries. Certification is provided by CPW if the construction plans demonstrate appropriate mitigation measures to eliminate or diminish adverse effects to such streams or their banks or tributaries.

Figure 2-39: Wildlife Habitat for Important and Threatened Species

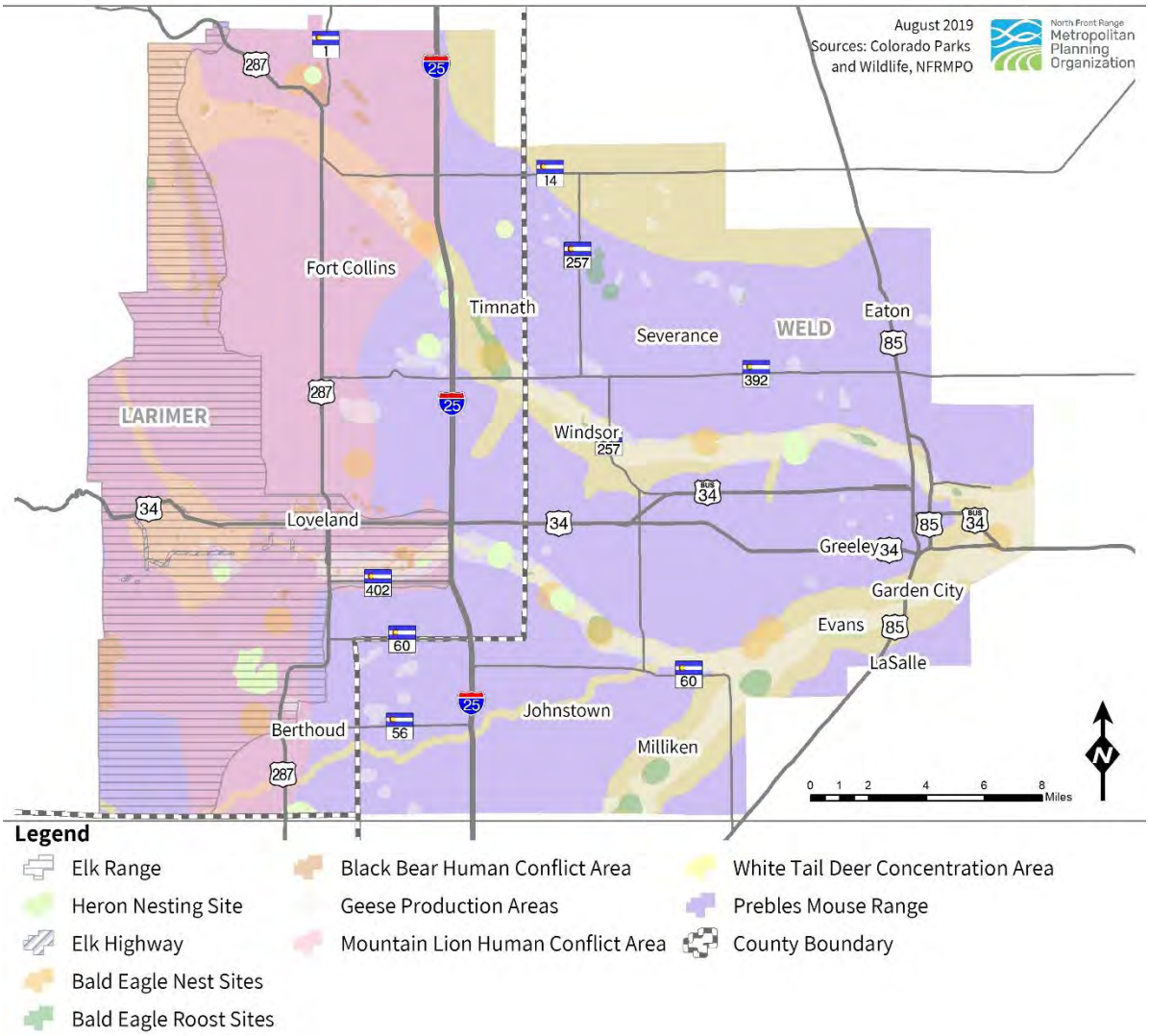
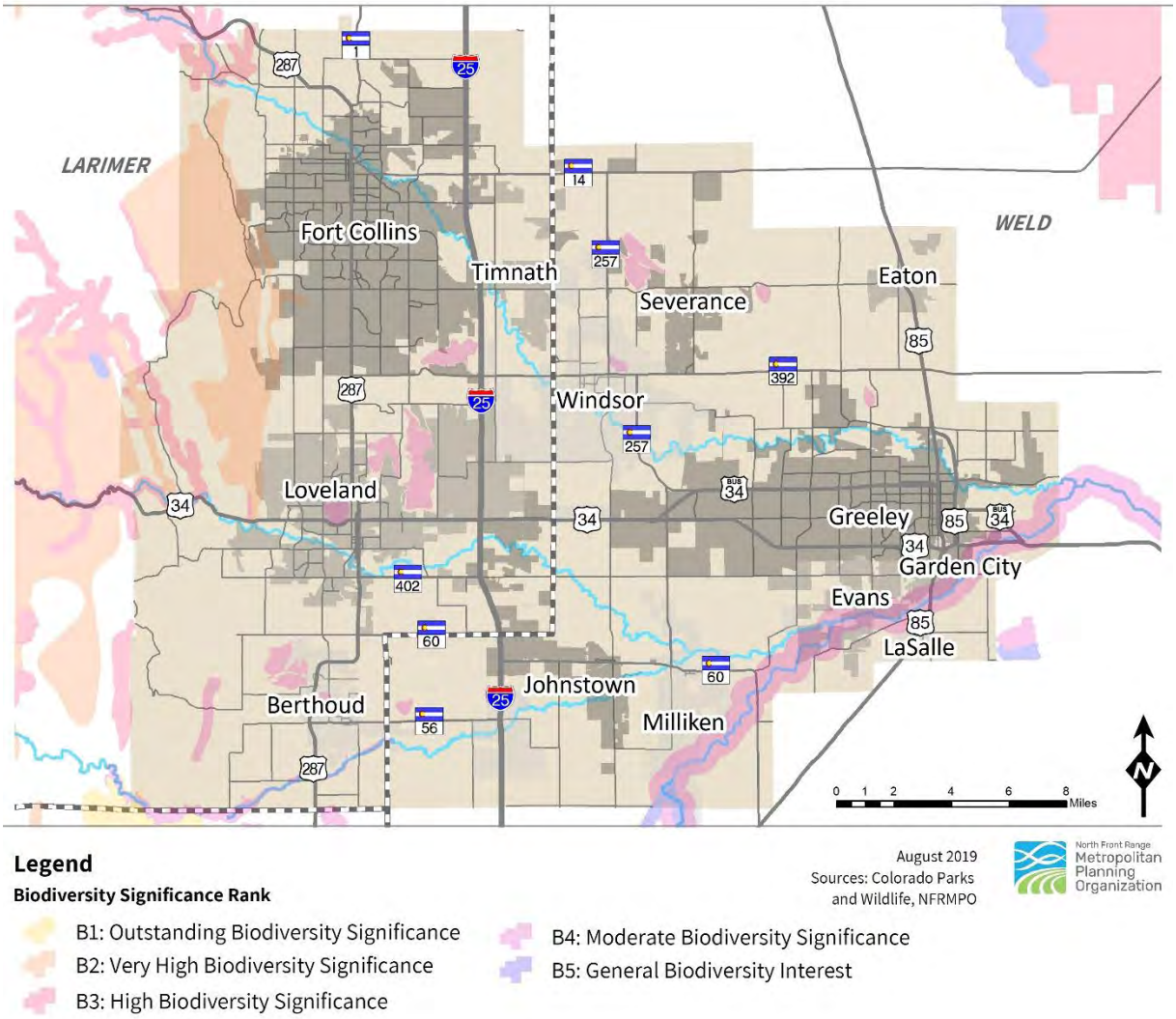


Figure 2-40: Potential Conservation Areas by Biodiversity Significance



E. Wetlands, Water Features, and Water Quality

The North Front Range region is home to several major rivers and their tributaries, including the Cache la Poudre, Big and Little Thompson, and South Platte Rivers. Additionally, the region contains many lakes and reservoirs, including the Horsetooth and Windsor reservoirs, and Boyd, Carter, and Loveland Lakes. Two aquifers, Laramie and Laramie-Fox Hills, flow under the southeastern portion of the NFRMPO region. Wetlands are areas inundated or saturated by surface or ground water at a frequency or duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions.[18] In the North Front Range region, wetlands are commonly found adjacent to streams or rivers where the ground stays saturated. **Figure 2-41** shows the water features, wetlands, and aquifers within the region.

Waterbodies and wetlands are both protected under the Federal Clean Water Act (CWA). Under this act, the National Pollution Discharge Elimination System (NPDES) was created to develop water discharge standards to prevent pollution from entering the nation's waterways. The EPA oversees the CWA throughout the nation but has granted CDPHE this duty in Colorado. Though the two are covered under the same Federal regulations, mitigation strategies to avoid impacts differ greatly between the two.

Water Mitigation

Furthermore, as water rolls off transportation infrastructure, it often carries pollutants left behind by motorists into nearby lakes, rivers, and streams. Even during the construction phase, silt, dust, and other particulate matter may be carried into nearby waterbodies via runoff or even wind. In accordance with CDOT's Statewide Transportation Plan, mitigation strategies are used for any transportation projects posing a threat to water quality. Most commonly, a project will use one or several Best Management Practices (BMP) to avoid or control runoff.

BMPs may include retention and detention ponds to temporarily or permanently store stormwater; vegetated swales to slow the flow of runoff, allowing pollutants to filter out before entering nearby water bodies; and even newer technologies like permeable pavement. Silt fences are often used in the construction phase to help prevent particulate matter associated with construction from entering water bodies.

Additionally, CDOT works with local municipalities, permit holders, and private developers to construct and maintain watershed-scale water quality facilities. Using $6.5M in a Permanent Water Quality Mitigation Pool (PWQM), CDOT will design and construct on-site PWQM control measures within CDOT's Municipal Separate Storm Sewer System (MS4) area.

[18] EPA, 2015 (http://water.epa.gov/lawsregs/guidance/wetlands/definitions.cfm)

Silt fence used during CDOT construction. Source: CDOT

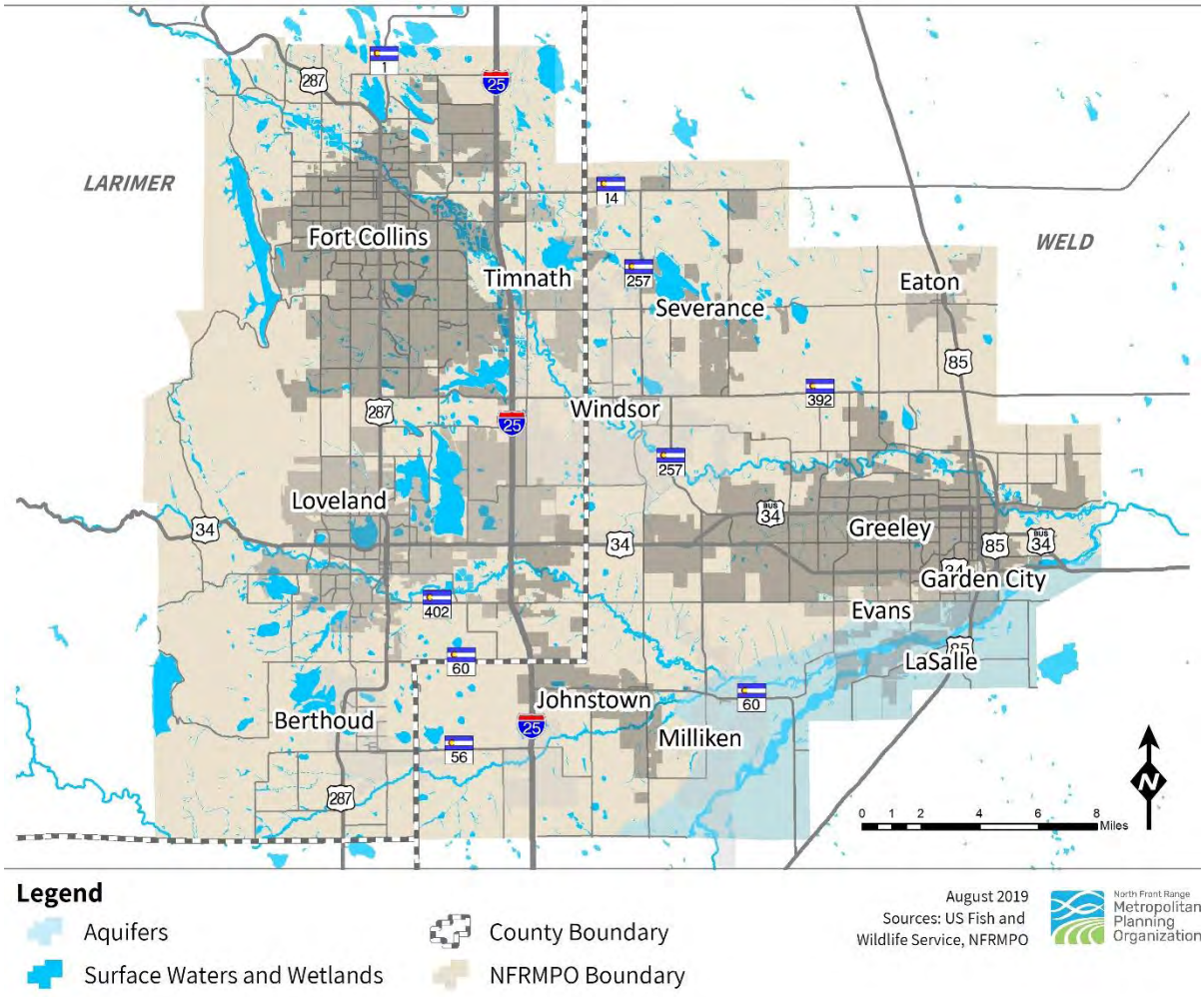
Wetland Mitigation

CDOT projects are required by federal law to first avoid and, if not possible, minimize impacts to wetlands. Where impacts are unavoidable, they must be mitigated. Preference must be given to the use of wetland banks where the project impacts occur within the service area of an approved wetland bank. Use of wetland banks is not appropriate where locally important ecological functions should be replaced on-site. Outside of an approved wetland bank's service area, mitigation should be on-site or within the same watershed where the impacts are occurring.

As Colorado communities continue to grow, mitigating wetland impacts is becoming increasingly difficult and expensive. Anticipating and planning for future projects and operations to avoid and minimize impacts as much as possible is increasingly important, as is proactive identification of methods to mitigate unavoidable impacts.

CDOT is currently involved in the identification and development of proactive mitigation programs for wetlands. Current programs include the development of new wetland banks and cooperative partnerships with state, local, and federal agencies for the development of wetland enhancement and restoration programs.

Figure 2-41: Water Features



F. Planning and Environmental Linkages

Process and Guidance

The Federal Highway Administration (FHWA) defines the Planning and Environmental Linkages (PEL) process as a collaborative and integrated approach to decision-making that considers environmental, community, and economic goals early in the transportation planning process. The PEL process helps to streamline projects and shorten decision-making by building partnerships and identifying priorities prior to funding being available for a full NEPA process. Additionally, PELs allow non-transportation agencies, such as federal, state, local, and tribal government resource agencies, to be an important part of the decision-making process. The PEL process uses information, analysis, and products developed during the planning stages to inform the environmental review, or National NEPA, process.

PEL studies are also used as tools to identify varying political needs and desires when a corridor spans multiple jurisdictions by combining efforts with multiple community technical experts and elected officials. CDOT has pursued several PEL studies within the region to improve efficiency, reduce environmental

impacts, and lower the costs of implementing transportation projects through the environmental review stages. Additional information on CDOT's PEL guidance can be found on the CDOT website.

PEL Studies in the North Front Range Region

US34 PEL Study

The NFRMPO participated in the US34 PEL study as a member of the Technical Advisory Committee (TAC) and the Executive Committee. The TAC was comprised of representatives from communities along the US34 corridor, regional and local transportation planning staff, CDOT representatives, as well as members of special interest groups. The NFRMPO was used as a source of information and could be a source of funding in future calls for projects cycles as priorities along the corridor arise in member communities. The US34 PEL Study final report was released in January 2019 and can be found on the CDOT website.

US85 PEL Study

The US85 PEL Study, completed in 2017, aimed to develop a vision for the US85 Corridor between I-76 in Commerce City and the Town of Nunn. The study used considerations from the US 85 Access Control Plan and incorporated prioritization and implementation strategies for the different segments of the corridor. The US85 PEL process was a collaborative approach between CDOT, local community representatives, MPOs, and the public. The PEL Study also reviewed the environmental, economic, and developmental impacts of individual communities along the corridor to develop alternatives to address needs, funding, and project prioritization.

The NFRMPO participated in the US85 PEL study as a member of the TAC and the Executive Committee. The TAC was comprised of representatives from communities along the corridor, regional and local transportation planning staff, CDOT representatives, as well as members of special interest groups. The NFRMPO was used as a source of information and could be a source of funding in future calls for projects cycles as priorities along the corridor arise in member communities.

The US85 PEL Study can be found on the CDOT website.