

4.2 TRAFFIC AND CIRCULATION

4.2.1 Site Circulation and Access Impacts

The Proposed Action would not cause significant site circulation or access impacts. The Proposed Action will allow for increased site activities and the total number of employees working on the site (to 300 in 2021 from approximately 80 in 2001), thereby increasing on-site parking requirements and vehicle use within and surrounding the site. Future development and related approval processes implemented at the NWTC would address circulation and parking requirements as each facility goes through final design. On-site roads would easily accommodate anticipated vehicle movements with anticipated surface improvements.

The installation of a left turn lane and acceleration and deceleration lanes along Highway 128 at the site access road intersection addresses future site access safety needs. However, if future improvements by others that would create a four-lane facility for Highway 128 are advanced through the planning process and construction is scheduled and budgeted, NWTC site access facilities would need to be incorporated into the plans and specifications for Highway 128. These facilities would also need to address future use of the site access intersection by aggregate trucks traveling over the recently created road easement through the NWTC, even though this traffic generation source is speculative at this time.

4.2.2 Level of Service and Accident Impacts

Additional trips on local roadways and through local intersections are expected to increase significantly from off-site development, primarily east of the NWTC. The Proposed Action will incrementally add to these local traffic volumes, have a minor impact on the timing of planning improvements, and will contribute incrementally to accident rates in the vicinity. The contribution of the project to these impacts would be considered insignificant even if the site accommodates A.M. and P.M. peak hour trips from an estimated future total of 300 employees. The project increment would add to cumulative impacts and corresponding facility requirements addressed by recent transportation studies because future land use considerations do not directly consider the Proposed Action on the NWTC site.

Future traffic volume increases on Highway 128, and to a lesser degree Highway 93, would contribute substantially to cumulative traffic volumes and corresponding congestion during peak periods at the Highway 128/93 intersection. Left turn movements are expected to remain at LOS F for many years, along with steady or increasing accident rates, until an interchange is completed or interim improvements such as a traffic signal are proposed and installed.

4.2.3 Impacts of the No Action Alternative

The No Action Alternative would allow existing development and employee totals at the NWTC to remain unchanged. Incremental impacts from site development associated with the Proposed Action on congestion and accidents would be avoided. LOS would remain poor at the Highway 93/128 intersection and would be expected to decline from increasing traffic volumes associated with development in other locations in the vicinity.

MITIGATION MEASURES

There are no significant impacts; therefore, no mitigation measures are required under NEPA.

4.3 AIR QUALITY

Air quality impacts are indicated by changes in the concentrations of atmospheric pollutants as a result of specified actions. This section discusses impacts to air quality from site preparation and construction at the NWTC resulting from the Proposed Action, as well as impacts resulting from emissions associated with subsequent site operations. The purpose of the air quality analysis is to provide a general idea of construction and operational impacts to air quality resulting from the Proposed Action rather than to define precise emission levels and corresponding mitigation measures. Consequently, modeling was not performed to precisely calculate future emissions.

NREL has an ongoing overall Air Quality Protection program, an Indoor Air Quality program, a Particulate Emissions Control for Construction program, a Local Exhaust Ventilation program, and a wide range of other programs that directly and indirectly contribute to avoiding, minimizing and mitigating air pollution emissions and associated impacts and risks. These programs are in place and would apply to all future improvements and activities at the NWTC.

Based on proposed activities and operations, emissions resulting from new facilities and increased use of existing NWTC facilities are expected to be insignificant. Operational emissions under the Proposed Action would be intermittent and would not be expected to contribute to an exceedance of an ambient air quality standard or substantially impact regional air quality attainment status or progress.

4.3.1 Construction Impacts

During construction, temporary and localized increases in atmospheric concentrations of NO₂, CO, SO₂, VOCs, and PM would result from exhaust emissions of worker's vehicles, heavy construction vehicles, and other machinery, equipment and tools. Air quality impacts would result from airborne particulates (fugitive dust) arising from earthwork during site preparation and construction. New construction at the NWTC would be conducted in stages; therefore, emissions of fugitive dust would not be continuous. Under certain wind conditions, there could be a minor incremental increase in particulates detectable at the open space trailheads to the north and northwest of the NWTC during site construction. However, the impact is expected to be inconsequential because the distances between the site and trailheads would allow for substantial dispersion of the particulates before reaching trail users. Impacts at the residence located west of the NWTC would also be minor for similar reasons. Additional particulate emissions from the NWTC would contribute incrementally and insignificantly to emissions originating from the aggregate facility and other area-wide sources and for a limited duration.

4.3.2 Impacts from New Equipment and Operations

There would be no new major stationary sources or major modifications to existing operations associated with the Proposed Action. Emissions associated with the proposed Fuel Cell Thermal and Moisture Management Facility (heaters, coolers, humidifiers, and dryers) would consist primarily of water vapor. Other new emissions sources would be consist of natural gas