

## 3.17 Irreversible and Irretrievable Commitment of Resources

### 3.17.1 What is an irreversible and irretrievable commitment of resources and why is it important to this project?

A resource commitment is considered *irreversible* when direct and indirect impacts from its use limit future use options. Irreversible commitments apply primarily to nonrenewable resources, such as cultural resources, and also to those resources that are renewable only over long periods of time, such as soil productivity or forest health. A resource commitment is considered *irretrievable* when the use or consumption of the resource is neither renewable nor recoverable for future use. Irretrievable commitments apply to loss of production, harvest, or use of natural resources. Irreversible and irretrievable commitments of resources could be incurred as a result of development of specific projects within the Corridor. This analysis is required by:

**Sustainability**, as defined by the I-70 Mountain Corridor Context Sensitive Solutions Working Group, is *an overarching value that creates solutions for today that does not diminish resources for future generations. Ideal solutions generate long-term benefits to economic strength, scenic integrity, community vitality, environmental health, and ecosystems.*

- National Environmental Policy Act (40 Code of Federal Regulations 1502.16)
- Federal Highway Administration's (FHWA) Regulations at 23 Code of Federal Regulations Sections 771 and 777
- Guidance provided in FHWA's Technical Advisory T6640.8A

While the Corridor consists of a mixture of natural and man-made resources, there is a desire to preserve and enhance existing natural and biological resources. Protection of resources within the Corridor (including the National Forests) and throughout the region is vital, and efforts to sustain and enhance existing resources are an objective of the I-70 Mountain Corridor Context Sensitive Solutions process. The Colorado Department of Transportation is committed to the concept of sustainability to preserve, to the extent possible, vital natural resources in the State of Colorado. Implementation of the Action Alternatives involve a commitment of a wide range of natural, physical, biological, human, and fiscal resources that are irreversible and irretrievable.

### 3.17.2 What process was used to determine the commitment of resources due to this project?

The process for determining whether or not the proposed action results in an irreversible and irretrievable commitment of resources includes the identification of:

- Existing resources within the Corridor, region, and State
- Resources needed to build the alternatives

The lead agencies then determined if the proposed action results in an irreversible or irretrievable loss of the resources.

### 3.17.3 What are the areas of interest in these resources in the Corridor?

Natural and biological resources were "flagged" as areas of concern within the Corridor. Regionally, there is concern about impacts on diminishing fiscal resources. The I-70 Mountain Corridor Context Statement and Core Values emphasized sustainability as an "overarching value that creates solutions for today that do not diminish resources for future generations." The I-70 Mountain Corridor Context Sensitive Solutions Sustainability Working Group stated that any solution to transportation problems within the

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Corridor should “generate long-term benefits in economic strength, environmental health and community vitality.”

#### 3.17.4 How do the alternatives affect these resources?

The No Action Alternative has less impact on irreversible and irretrievable commitment of resources. Continued maintenance and operation of the existing I-70 Mountain Corridor (in addition to the planned and funded construction projects within the Corridor) result in an irretrievable and irreversible loss of resources. These projects cause an irretrievable loss of land, construction materials, natural resources, fiscal resources, and labor. In addition, there is a loss of money, time, and transportation user hardship related to loss of mobility and increasing congestion of the Corridor. A decreasing level of service for both auto and truck traffic results in an irreversible commitment of resources associated with cost and time.

Land used in the construction of the transportation improvements associated with any of the Action Alternatives is considered an irreversible commitment of resources because it is unlikely that this land could ever be committed to another use. Parks and recreation resources may be irreversibly lost as a result of land acquisition.

Fossil fuels are irretrievably expended in several ways with implementation of any of the Action Alternatives. Fossil fuels are consumed during the construction of transportation improvements during grading, material movement, and other activities. The fuel and electricity used in the process are dedicated to the improvements.

Construction materials (such as, aggregate for concrete and petroleum products used in asphalt and operation of construction materials) are not retrievable. The materials (including, but not limited to, asphalt, steel, aggregates, sand, gravel, and cement) are dedicated to improving the facility and are not available for other uses.

Water resources could also be consumed during construction, although water use is temporary and largely limited to onsite concrete mixing and dust abatement activities.

Irretrievable losses of vegetation and associated animal habitat could occur during construction. Individual animals may experience impacts during project construction and operation.

Historic, cultural, and paleontological resources are nonrenewable, and disturbance of these resources constitutes an irreversible and irretrievable commitment of resources. Access to previously inaccessible areas could lead to vandalism of both known and unknown cultural, historic, and paleontological resources, thereby rendering them irretrievable.

Wetland impacts associated with construction of the Action Alternatives are considered irreversible because the given resource is covered by the transportation facility (such as additional traffic lanes, rail, or guideways).

Impacts on visual resources could constitute an irreversible and irretrievable commitment of resources.

Fiscal resources (such as, state and federal funds required for implementation of any of the Action Alternatives) are consumed and unavailable for other projects in the State of Colorado. Human resources are also required. During construction, members of the labor force (including construction crews, government staff, consultants, and engineers) are dedicated to the project.

Generally, the commitment of resources increases with the size of the program being implemented. Aside from the No Action Alternative, the Minimal Action Alternative has the least commitment of resources. A

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range of irreversible and irretrievable commitment of resources associated with the Preferred Alternative occurs during construction. Similar to the No Action Alternative and Minimal Action Alternative, the Advanced Guideway System Alternative does not require the use of resources that the Combination alternatives require. The Combination alternatives require the largest commitment of irreversible and irretrievable natural, physical, biologic, labor, and capital resources. The Preferred Alternative, if fully implemented, falls within the range of the Combination alternatives; however, due to the adaptive nature of implementation of the program of improvements, a commitment of resources should only occur based on a proven need.

The irreversible and irretrievable commitment of resources by the improvement of the Corridor is offset by short- and long-term improvements to the regional economic base and achievement of goals to meet the project purpose and need.

#### 3.17.5 What are the project effects on resources in 2050?

By 2050, biological resources could continue to be affected by climate change, continued development, and changing water supply. Habitats and ecological communities may shift toward higher elevations due to increasing temperatures and soil moisture reduction. These changes may mean that fewer habitats are available to irretrievably impact. Effects on land are expected to be similar to 2035, as land should be at or near build-out in 2035. Other growth-limiting factors may control land use, such as water availability and community controls on growth and land use planning, thereby limiting the acquisition of private property. The availability of labor may be affected as land prices may rise as communities near build-out, making it harder for construction industry laborers to find affordable housing along the Corridor (see **Sections 3.1 through 3.16** for details of the direct, indirect, and construction impacts for the resources).

#### 3.17.6 What will be addressed in Tier 2 processes?

As projects are defined in greater detail during Tier 2 processes, irretrievable and irreversible commitment of resources will be identified, including, but not limited to, loss of wetlands and water resources, loss of materials incorporated into the transportation facility, loss of park and recreation resources, loss of or alterations to historic structures, and loss of right-of-way, energy consumption, natural habitats, and lands due to implementation of the proposed action.

#### 3.17.7 What are the mitigation strategies for this resource?

Certain resource loss is unavoidable but can be minimized to the extent practicable by employing the concepts of sustainability and best management practices. The I-70 Mountain Corridor Context Sensitive Solutions Working Group developed guidance and criteria for CDOT to incorporate sustainability into the “5 life cycles” of any project on the Corridor. The Colorado Department of Transportation defines the life cycles from planning through operations, maintenance, and monitoring. Each phase has its own set of requirements and expectations. The criteria incorporate sustainability and encourage creative approaches for use beginning at project development through to construction. Each project is rated based on sustainability and adherence to environmentally sensitive practices, and work is rewarded to the projects that reach and exceed expectations. The I-70 Mountain Corridor Context Sensitive Solutions program also developed specialized Engineering Design Criteria for the Corridor to increase the sustainability of the transportation facilities. See the **Introduction** and **Appendix A, I-70 Mountain Corridor Context Sensitive Solutions** for more information about the I-70 Mountain Corridor Context Sensitive Solutions process.

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