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## 4.26 SUMMARY OF POTENTIAL IMPACTS

### INTRODUCTION

This section summarizes potential impacts discussed through the development of this document. Potential impacts are identified by the resource area for the No Action Alternative and the build alternatives. A full understanding can be attained by reading the individual sections by referencing supporting text, data, and graphics.

*Table 4.26-1 Potential Environmental Impacts by Alternatives*

Resource Area	No Action Alternative	Freeway Alternative	Tollway Alternative	Regional Arterial Alternative	Combined Alternative (Recommended)
<b>Land Use</b>	Continued population and employment growth are expected in the area without the proposed improvements. It is possible that the rate of development may occur at a slower rate if no improvements are made.	807 acres of land would be converted from an existing use to a transportation use. 80 of these acres will be acquired from Rocky Flats. These affected areas are compatible with future development and land use within the corridor.	868 acres of land would be converted from an existing use to a transportation use. 80 of these acres will be acquired from Rocky Flats. These affected areas are compatible with future development and land use within the corridor.	694 acres of land would be converted from an existing use to a transportation use. 98 of these acres will be acquired from Rocky Flats. These effected areas are compatible with future development and land use within the corridor.	900 acres of land would be converted from an existing use to a transportation use. 80 of these acres will be acquired from Rocky Flats. These effected areas are compatible with future development and land use within the corridor.
<b>Social Conditions</b>	Potential direct and indirect impacts on communities caused by traffic congestion and impaired mobility (i.e., increased air pollution and noise, longer travel times, neighborhood traffic intrusion, deteriorating safety conditions, and lengthened emergency response time).	Would have similar social impacts to the Tollway Alternative, greater impacts than the Regional Arterial Alternative, and fewer impacts than the Combined Alternative (Recommended Alternative).	Would have similar social impacts to the Freeway Alternative greater than the Regional Arterial Alternative, and fewer impacts than the Combined Alternative (Recommended Alternative).	Would have the least amount of adverse impact on social conditions relative to other alternatives.	Would have the greatest impact on social conditions. This alternative includes displacement of the Arvada fire station.



Resource Area	No Action Alternative	Freeway Alternative	Tollway Alternative	Regional Arterial Alternative	Combined Alternative (Recommended)
<b>Environmental Justice</b>	Potential impacts from unmitigated noise and congestion.	No evidence of disproportionately high and adverse effects to low-income or minority populations.	No evidence of disproportionately high and adverse effects to low-income or minority populations.	No evidence of disproportionately high and adverse effects to low-income or minority populations.	No evidence of disproportionately high and adverse effects to low-income or minority populations.
<b>Economic</b>	Will not impact economic conditions beyond that already considered by planners.	Jobs created from construction: <ul style="list-style-type: none"> <li>▪ Direct – 1,690</li> <li>▪ Indirect – 1,015</li> </ul> 2 business relocations (1 which is a large business) Potential loss of \$0.591 million in annual tax base Greatest adverse impact to commercial center access	Jobs created from construction: <ul style="list-style-type: none"> <li>▪ Direct – 1,780</li> <li>▪ Indirect – 1,068</li> </ul> 7 business relocations (1 which is a large business) Potential loss of \$0.808 million in annual tax base Moderate adverse impact to commercial center access	Jobs created from construction: <ul style="list-style-type: none"> <li>▪ Direct – 1,750</li> <li>▪ Indirect – 1,050</li> </ul> 3 business relocations (2 which are large businesses) Potential loss of \$0.692 million in annual tax base No improvement to commercial center access	Jobs created from construction: <ul style="list-style-type: none"> <li>▪ Direct – 1,685</li> <li>▪ Indirect – 1,010</li> </ul> 9 business relocations (1 which is a large business) Potential loss of \$1.303 million in annual tax base Greatest improvement to commercial center access
<b>Right of Way</b>	No Right of Way required if no improvements are made	Would require 3 residential relocations and 2 business relocations	Would require 3 residential relocations and 7 business relocations.	Would require 6 residential relocations and 3 business relocations.	Would require 29 residential relocations and 9 business relocations.
<b>Air</b>	Regardless of which alternative is selected, no alternative will result in exceeding air quality standards. Due to cleaner vehicles, future daily air pollutant levels for most pollutants are predicted to be lower than current levels, even with more vehicles on the roads. Total particulate matter levels may increase in the future because of more vehicles, but the preliminary analysis indicates the concentrations would meet the NAAQS.				



Resource Area	No Action Alternative	Freeway Alternative	Tollway Alternative	Regional Arterial Alternative	Combined Alternative (Recommended)
<b>Noise</b>	<p>The number of predicted impacted receivers in 2030 is:</p> <ul style="list-style-type: none"> <li>▪ 56 Residential</li> <li>▪ 0 Commercial</li> </ul> <p>There are currently 39 residential properties and 0 commercial properties impacted under existing conditions.</p>	<p>The number of predicted impacted receivers in 2030 is:</p> <ul style="list-style-type: none"> <li>▪ 276 Residential</li> <li>▪ 19 Commercial</li> </ul> <p>Traffic noise barriers recommended in specified areas.</p>	<p>The number of predicted impacted receivers in 2030 is:</p> <ul style="list-style-type: none"> <li>▪ 118 Residential</li> <li>▪ 10 Commercial</li> </ul> <p>Traffic noise barriers recommended in specified areas.</p>	<p>The number of predicted impacted receivers in 2030 is:</p> <ul style="list-style-type: none"> <li>▪ 104 Residential</li> <li>▪ 20 Commercial</li> </ul> <p>Traffic noise barriers recommended in specified areas.</p>	<p>The number of predicted impacted receivers in 2030 is:</p> <ul style="list-style-type: none"> <li>▪ 133 Residential</li> <li>▪ 14 Commercial</li> </ul> <p>Traffic noise barriers recommended in specified areas.</p>
<b>Water Quality</b>	<p>Continued growth in the area will result in increased impervious surface area with no roadway BMPs except for minor improvements.</p>	<p>299.0 acres of additional impervious surface area contributing to water quality impacts. Roadway BMPs can reduce constituent loading to No Action levels.</p>	<p>298.9 acres of additional impervious surface area contributing to water quality impacts. Roadway BMPs can reduce constituent loading to No Action levels..</p>	<p>348.0 acres of additional impervious surface area contributing to water quality impacts. Roadway BMPs can reduce constituent loading to No Action levels..</p>	<p>325.6 acres of additional impervious surface area contributing to water quality impacts. Roadway BMPs can reduce constituent loading to No Action levels..</p>
<b>Wetlands</b>	<p>No impacts, except for impacts associated with future growth within the study area.</p>	<p>Direct Impacts to:</p> <ul style="list-style-type: none"> <li>▪ 15.6 acres of jurisdictional and non jurisdictional wetlands</li> <li>▪ 0.2 acres of of jurisdictional and non jurisdictional open waters</li> <li>▪ 10.6 acres of riparian areas</li> </ul> <p>5.26 acres of weighted wetland impacts</p>	<p>Direct Impacts to:</p> <ul style="list-style-type: none"> <li>▪ 15.2 acres of jurisdictional and non jurisdictional wetlands</li> <li>▪ 0.4 acres of of jurisdictional and non jurisdictional open waters</li> <li>▪ 10.6 acres of riparian areas</li> </ul> <p>5.25 acres of weighted wetland impacts</p>	<p>Direct Impacts to:</p> <ul style="list-style-type: none"> <li>▪ 20.9 acres of jurisdictional and non jurisdictional wetlands</li> <li>▪ 0.02 acres of of jurisdictional and non jurisdictional open waters</li> <li>▪ 9.5 acres of riparian areas</li> </ul> <p>7.14 acres of weighted wetland impacts</p>	<p>Direct Impacts to:</p> <ul style="list-style-type: none"> <li>▪ 18.2 acres of jurisdictional and non jurisdictional wetlands</li> <li>▪ 0.5 acres of of jurisdictional and non jurisdictional open waters</li> <li>▪ 11.1 acres of riparian areas</li> </ul> <p>6.31 acres of weighted wetland impacts</p>



Resource Area	No Action Alternative	Freeway Alternative	Tollway Alternative	Regional Arterial Alternative	Combined Alternative (Recommended)
<b>Floodplains</b>	No impacts, except for impacts associated with future growth within the study area.	Moderate impacts to existing floodplains.	Moderate impacts to existing floodplains.	Least impact to existing floodplains.	Greatest impacts to existing floodplains due to additional crossings along Indiana Street.
<b>Vegetation, Wildlife and T&amp;E</b>	No impacts, except for impacts associated with future growth within the study area.	Impact to 730 acres of vegetation and various wildlife habitats.	Impact to 776 acres of vegetation and various wildlife habitats.	Impact to 671 acres of vegetation and various wildlife habitats.	Impact to 775 acres of vegetation and various wildlife habitats.
<b>Visual</b>	No additional visual impacts if no proposed improvements are made.	High degree of visual impacts due to construction of structural features in certain areas of corridor. Pass-through structures in Interlocken would contribute to the high degree of visual impact.	High degree of visual impacts due to construction of structural features in certain areas of corridor. Pass-through structures in Interlocken would contribute to the high degree of visual impact	Lowest visual impact relative to other alternatives. Fewer structural features than other alternatives.	Higher degree of visual impact than the Regional Arterial Alternative, but lower degree of impact than the Freeway Alternative and Tollway Alternative. The alignment down McIntyre Street would change the rural character and scenic integrity of the area.
<b>Historic</b>	Would leave historic and archaeological resources in their present state for the short term.	2 historic sites would be directly affected by right-of-way acquisition. 4 historic sites would be subject to indirect effects	4 historic sites would be directly affected by right of way acquisition 3 historic sites would be subject to indirect effects	1 historic sites would be directly affected by right of way acquisition 2 historic sites would be subject to indirect effects	10 historic sites would be directly affected by right of way acquisition 5 historic sites would be subject to effect impacts
<b>Paleontological</b>	All alternatives have the potential to adversely impact paleontological resources.				



Resource Area	No Action Alternative	Freeway Alternative	Tollway Alternative	Regional Arterial Alternative	Combined Alternative (Recommended)
<b>Hazardous Materials</b>	No impacts	Right-of-way concerns because: <ul style="list-style-type: none"> <li>▪ 9 recognized environmental conditions</li> <li>▪ 34 sites of concern</li> </ul>	Right-of-way concerns because: <ul style="list-style-type: none"> <li>▪ 9 recognized environmental conditions</li> <li>▪ 41 sites of concern</li> </ul>	Right-of-way concerns because: <ul style="list-style-type: none"> <li>▪ 13 recognized environmental conditions</li> <li>▪ 36 sites of concern</li> </ul>	Right-of-way concerns because: <ul style="list-style-type: none"> <li>▪ 19 recognized environmental conditions</li> <li>▪ 100 sites of concern</li> </ul>
<b>Utilities</b>	No impacts, except for impacts associated with future growth within the study area.	16 utility relocations 30,000 linear feet of utility line relocation	13 utility relocations 15,100 linear feet of utility line relocation	15 utility relocations 134,000 linear feet of utility line relocation	27 utility relocations 48,500 linear feet of utility line relocation
<b>Parks and Recreation</b>	No impacts, except for impacts associated with future growth within the study area.	13.08 acres of direct impacts to parks and recreation areas and open space.	15.71 acres of direct impacts to parks and recreation areas and open space.	8.19 acres of direct impacts to parks and recreation areas and open space.	15.93 acres of direct impacts to parks and recreation areas and open space.
<b>Farmland</b>	No impacts, except for impacts associated with future growth within the study area.	344.0 acres of Prime Farmland and Farmlands of State Importance impacted. All farm accesses preserved.	358.7 acres of Prime Farmland and Farmlands of State Importance impacted. All farm accesses preserved.	199.0 acres of Prime Farmland and Farmlands of State Importance impacted. All farm accesses preserved.	326.0 acres of Prime Farmland and Farmlands of State Importance impacted. Some farm access issues along PC alignment.
<b>Geology</b>	No impacts, except for impacts associated with future growth within the study area.	16,000 feet of alignment is located on expansive soils 49,000 feet of alignment is located on known faults	16,000 feet of alignment is located on expansive soils 55,000 feet of alignment is located on known faults	23,000 feet of alignment is located on expansive soils 55,000 feet of alignment is located on known faults Steeply dipping beds of the Leyden Hogback may require protection from falling rocks.	17,000 feet of alignment is located on expansive soils 55,000 feet of alignment is located on known faults



Resource Area	No Action Alternative	Freeway Alternative	Tollway Alternative	Regional Arterial Alternative	Combined Alternative (Recommended)
<b>Construction</b>	No impacts.	Greatest overall construction impacts due to large number of structures..	Greatest overall construction impacts due to large number of structures..	Least overall construction impacts due to at-grade construction.	Moderate overall construction impacts due to additional length of roadway..
<b>Energy</b>	Least amount of impacts.	5.9% more energy consumed than the no-build alternative.	4.9% more energy consumed than the no-build alternative.	2.9% more energy consumed than the no-build alternative.	4.3% more energy consumed than the no-build alternative.