Physical Environment

Water Quality

Water quality relates to the levels of pollutants present in local streams and water bodies, relative to protection of aquatic life and human health.

ENVIRONMENTAL CONSEQUENCES

No-Action

- 135 acres of existing impervious surface area
- Limited opportunity to improve water quality of run-off to adjacent waters

General Purpose Lanes

- 165 acres of additional impervious surface area
- Implementing MS4 requirements would improve water quality of run-off into adjacent waters

Tolled Express Lanes *(Preferred Alternative)*

- 187 acres of additional impervious surface area
- Implementing MS4 requirements would improve water quality of run-off into adjacent waters

MITIGATION

- Grassed swales and vegetated filter strips to pre-treat run-off waters, with roadside swales to carry run-off to receiving waters
- 53 water quality ponds to achieve MS4 requirements
- Curb and gutter, a closed storm sewer, and grassed swales where ponds are not feasible
- Continue CDOT's practices of limiting deicer use, discontinuing fertilizer use, and timely roadway sweeping after snow events

Floodplains

Floodplains refer to the federally regulated zone that is subject to flooding during high water conditions as a result of storm events.

ENVIRONMENTAL CONSEQUENCES

No-Action

No effects

General Purpose Lanes

- Minor changes to flood elevations (under 1 foot)

Tolled Express Lanes *(Preferred Alternative)*

- Minor changes to flood elevations (under 1 foot)

MITIGATION

- Retaining walls at Dad Clark Gulch and Willow Creek to minimize floodplain encroachment

Hydrology/Hydraulics

These elements relate to regional water flow characteristics for regional drainage systems and drainage of stormwater runoff from C-470.

ENVIRONMENTAL CONSEQUENCES

No-Action

No effects

General Purpose Lanes

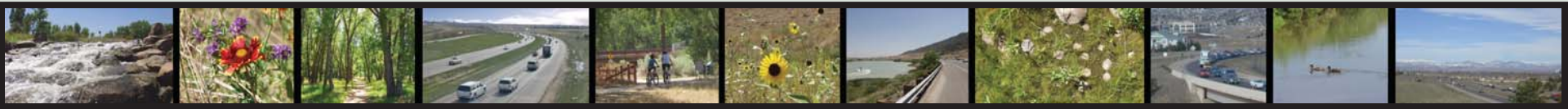
- Culvert east of Spring Creek and South Platte River bridge replaced
- More impervious surface area would cause increased run-off volume and peak flow rates from highway

Tolled Express Lanes *(Preferred Alternative)*

- Culvert east of Spring Creek and South Platte River bridge replaced
- More impervious surface area would cause increased run-off volume and peak flow rates from highway

MITIGATION

- Final design will match pond shapes to existing contour lines for natural appearance
- Culvert east of Spring Creek replaced with an 84-inch diameter culvert to allow passage of 100-year storm event
- Water quality ponds included to improve water quality of storm run-off



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