

ENVIRONMENTAL CONSIDERATIONS

These social, economic, and environmental issues will be considered:

- Land Use
- Social Impacts and Environmental Justice
- Relocation Impacts
- Economic Impacts
- Pedestrian and Bicycle Facilities
- Air Quality
- Traffic Noise
- Geology/Soils
- Water Quality
- Wetlands
- Water Body Modifications
- Floodplains
- Vegetation
- Wildlife
- Threatened and Endangered Species
- Historic and Archeological Resources
- Hazardous Materials
- Visual Impacts
- Construction Impacts
- Indirect Impacts
- Cumulative Impacts
- Mitigation and Permit Requirements
- Context Sensitive Solutions



THREATENED AND ENDANGERED SPECIES

Endangered Species – an animal or plant in danger of extinction within the foreseeable future throughout all or a significant portion of its range.

Threatened Species – any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Golden-cheeked warbler (*Dendroica chrysoparia*)



Photo by U.S. Fish & Wildlife Service

Black-capped vireo (*Vireo atricapilla*)



Photo by Reebekah Rylander

Aquifer species. Austin blind salamander
(*Eurycea waterlooensis*)



Photo by Dante Fenolio

Karst species. Bee Creek cave harvestman
(*Texella reddelli*)



Photo by Dr. Jean Krejca

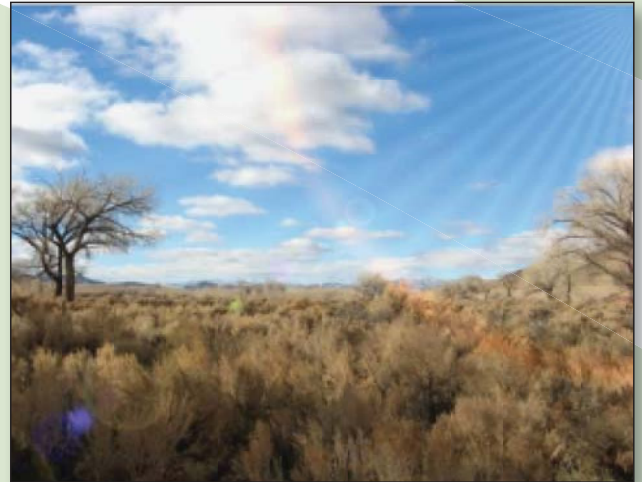
The study team will conduct habitat assessments and any necessary presence/absence surveys to determine whether any habitat will be disturbed by proposed transportation improvements. This will include preparation of a draft Biological Evaluation and Geologic Assessment.



MOPAC SOUTH
ENVIRONMENTAL STUDY

AIR QUALITY

Air quality is assessed by measuring or modeling a number of indicators of pollution including **Carbon Monoxide, Ozone, and Mobile Source Air Toxics**.



- **Carbon Monoxide (CO)** is a poisonous, colorless, odorless, and tasteless gas. CO comes from natural processes such as volcanoes and forest fires and manmade sources such as furnaces, gas stoves, generators, and vehicle exhaust.
- **Mobile Source Air Toxics (MSATs)** are known for or suspected of having serious health or environmental impacts. MSATs are emitted from mobile sources such as cars, trucks, buses, motorcycles, and construction equipment.



The study team will calculate potential air quality impacts (CO and MSATs) of proposed transportation improvements and identify measures to minimize air quality impacts during the construction phase for any build alternative considered.

- **Ozone (O₃)** is a gas that occurs both in the Earth's upper atmosphere and at ground level. At ground level, O₃ is harmful to respiratory health and is the main component of smog. In the upper atmosphere, O₃ protects life on Earth from the sun's harmful ultraviolet rays. O₃ is not emitted directly into the atmosphere but results from a series of reactions between gases in the presence of sunlight.

The Capital Area Metropolitan Planning Organization monitors and models the region's ground level O₃.



MoPac South
ENVIRONMENTAL STUDY

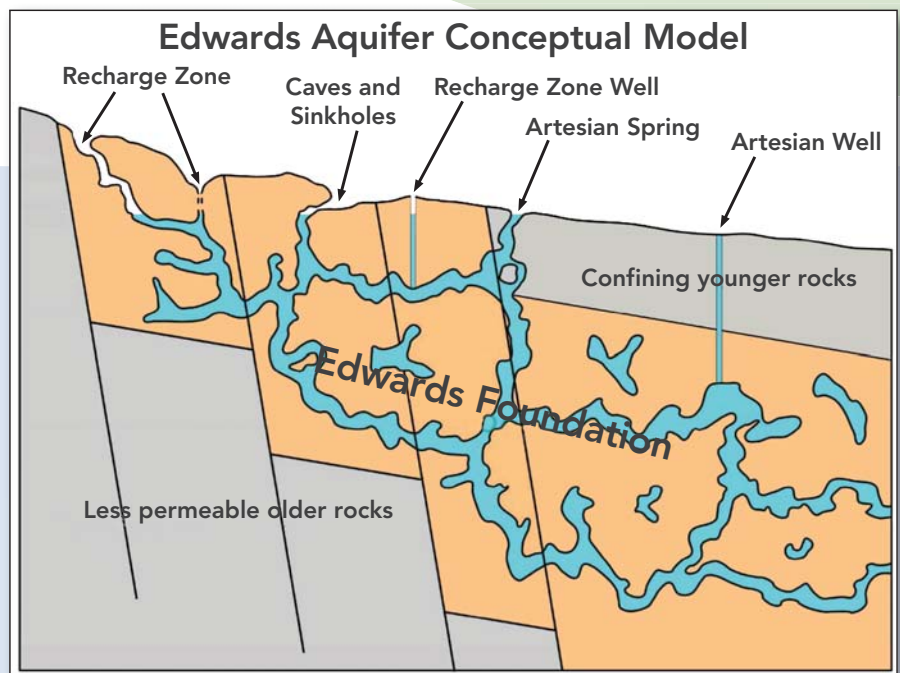
WATER QUALITY

An aquifer is an underground geologic formation that can store and transfer groundwater. (Edwards Aquifer Authority 2013)

The **contributing zone** of the aquifer is the upland area where rainfall contributes to streams that eventually flow into the recharge zone. The **recharge zone** of the aquifer is the area where rain and streams can flow directly into the aquifer through conduits and pores in the rock. The **confined zone** of the aquifer has less permeable rock or clay above it. Water in this zone can be under pressure which causes **artesian** wells to flow without pumping.

The Edwards Aquifer is susceptible to:

- Contamination
- Impervious cover which reduces recharge
- Too much demand/over-pumping
- Drought



The study team will pursue "green infrastructure" solutions for improved water quality, focusing on compliance with TCEQ's Edwards Aquifer Protection Program and the use of innovative stormwater management practices to reduce water quality impacts for any build alternative considered.



MOPAC SOUTH
ENVIRONMENTAL STUDY

WATER QUALITY

- The Barton Springs Segment of the Edwards Aquifer underlies the MoPac South project area.
- Approximately 55,000 people in Travis and Hays counties rely on water from the aquifer, as do several rare species.
- Austin's iconic Barton Springs are fed by the aquifer and are a vital ecological and recreational resource.
- Water enters the aquifer where streams flow over the recharge zone in waterways such as Bear Creek, Onion Creek, and the Blanco River.
- Recharge also comes from innumerable sinkholes that lead into caves feeding the aquifer.



Recharge water flows through caves to reach Barton Springs.
Photo by Dr. Jean Krejca



CONTEXT SENSITIVE SOLUTIONS

Context Sensitive Solutions (CSS) is a collaborative approach to:

- develop transportation facilities that fit within its surroundings
- preserve and enhance scenic, aesthetic, historic, community and environmental resources
- improve or maintain safety, mobility and infrastructure conditions

The community will be asked to provide input on design components to unify the look and feel of the corridor. These components include:



Bridges



Hardscape



Retaining Walls



Signature Design Elements



Bicycle and Pedestrian Facilities



Landscape Treatments

