2024 Technical Working Groups

MoPac South
ENVIRONMENTAL STUDY

May 8 – June 12, 2024

TWG Schedule

SUN	MON	TUE	WED	THU	FRI	SAT
5	6	7	**8** **PM: Kickoff**	9	10	11
12	13	14 Travis County Commissioners Court	**15**	16 Austin City Council Meeting	17	18
19	20	21 Travis County Commissioners Court	**22** **9:30a – 11:30a: Air Quality** **2p – 4p: Utilities**	23 Austin City Council Meeting	24	25
26	27 Memorial Day	28 Travis County Commissioners Court	**29** **1:30p – 4:30p: Parkland/Bike Ped**	30 Austin City Council Meeting	31	June 1
2	3	4 Travis County Commissioners Court	**5** **9a – 12p: Water Quantity/Quality** **2p – 4p: Cultural and Historic Resource**	6 Austin City Council Meeting	7	8
9	10	11 Travis County Commissioners Court	**12** **9:30a – 11:30a: Schematic (Operations/Safety)**	13 Austin City Council Meeting	14	15
16	17	18 Travis County Commissioners Court	19 Juneteenth	20 Austin City Council Meeting	21	22
23	24	25 Travis County Commissioners Court	**26** **2p – 4p: Recap**	27 Austin City Council Meeting	28	29

Introductions

Project Staff

- **Oscar Solis,** Mobility Authority, Assistant Director of Engineering
- **Jori Liu,** Mobility Authority, Director of Communications
- **Charlotte Gilpin,** K. Friese, GEC Project Manager
- **Zane Reid,** AtkinsRéalis, GEC Roadway Lead
- **Ryan Ingram,** AtkinsRéalis, GEC Environmental Lead
- **Ryan Hill,** AtkinsRéalis, GEC Environmental
- **Kelley Russell,** AtkinsRéalis, GEC Cultural Resources
- **Alex Amponsah,** AtkinsRéalis, GEC Environmental
- **Ruben Velasquez,** AtkinsRéalis, GEC Air
- **Dante Perez-Bravo ,** AtkinsRéalis, GEC Traffic
- **Heather Beatty,** Cambrian, Water Quality Sub
- **Kemble White,** Cambrian, Water Quality Sub
- **John Millsap,** K. Friese, Water Quality Sub
- **Geoffrey Elfers,** K. Friese, Water Quality Sub
- **Cristina Tangredi,** AtkinsRéalis, GEC Public Involvement Support
- **Hillary Lacy,** AtkinsRéalis, GEC Public Involvement Lead

Organizations Invited

- AISD
- Austin High School
- Austin Parks Foundation
- BSEACD
- Bike Texas
- City of Austin
- City of Rollingwood
- Farm & City
- Hill Country Conservancy
- Preservation Austin
- Safe Streets Austin
- Save Barton Creek Association
- Save Our Springs
- Sierra Club
- Trail Conservancy
- Travis County
- TxDOT AUS District
- Wildflower Center

Agenda

- Review expectations and best management practices
- Project Technical Approach
- Relevant Schematic Review
- Open Discussion

Expectations & Best Practices

- **Expectations:**
  - **Technical collaboration** to inform environmental study efforts
  - Many ideas will be **discussed**, but ideas may not be integrated
  - Project team members will determine if suggestions are **reasonable and feasible** and refine as needed if incorporation is possible.
  - Betterments can be considered for **environmental clearance**
  - Topics not relevant to the environmental study phase, will be **documented for future phases** if the project moves forward.

- **Best Practices**
  - Stick to the Topic
  - Be an Active Listener and Avoid Interruptions
  - Work collaboratively

Evaluation

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Purpose & Need

PROJECT PURPOSE

What we are trying to do

- Provide an opportunity for reliable travel times
- Improve operational efficiency
- Create a dependable and consistent route for transit
- Facilitate reliable emergency response

PROJECT NEED

What problems need to be addressed

- Current and forecasted congestion levels are creating unreliable travel times
- **Under the No-Build Alternative (Do Nothing), it could take 30% - 42% (6 – 9 minutes) more time to travel between Cesar Chavez Street and Slaughter Lane by 2045**
- Emergency response times are impacted by traffic congestion
- Forecasted population and employment growth in Travis and Hays counties

PROJECT GOALS AND OBJECTIVES

- Provide consistency with local and regional plans
- Be constructible while minimizing impacts to the natural and human environment
- Reduce congestion delays and provide travel time savings for all roadway users
- **Support water quality by treating 100% of TSS annual loading for all new impervious cover**
- **During project development work to exceed above goal**
- Deliver relief in a timely manner
- Facilitate congestion management
- Increase opportunities for transit and ridesharing
- Increase opportunities for pedestrians and bicyclists

Essentials:

- Purpose and Need remains the same
- Project Need Travel time projections have been updated to reflect 2045 traffic data
- Goals and Objectives can change
- Updated Water Quality Goals

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Operational Configuration	**Provide consistency with local and regional plans**	**Be constructible without unnecessary impacts to the natural and human environment**							**Support water quality**		**Deliver relief in a timely a manner**	**Facilitate congestion management by increasing opportunities for pedestrian and bicycles**
	Consistent with the CAMPO 2045 RTP (Yes/No)	**Amount of additional bridge over Lady Bird Lake (SF)**	**Amount of additional bridge over Lady Bird Lake (width)**	**Waters of the US: Addtl' Number and Area of Bridge Columns in Lady Bird Lake (# of columns, SF)**	**Permanent park Impacts (acres)**	**New Visual Element****	**Maximum Height of New Visual Element over existing mainlanes (feet)***	**Noise Impacts (Yes/No)**	**Additional Impervious Cover (acres)**	**Mitigations**	**Estimated construction schedule (months)**	**Length of shared use path and sidewalks (miles)**

2024 Technical Working Group: Air Quality

MoPac South
ENVIRONMENTAL STUDY

May 22, 2024

Air Quality - Regulatory Overview

- **Federal Regulations**
  - EPA's Clean Air Act (CAA) and National Ambient Air Quality Standards (NAAQS),
  - the National Environmental Policy Act (NEPA),
  - the Federal-aid Highways Code.

- **TxDOT NEPA Procedural Requirements**
  - TxDOT is the state agency with responsibility for helping project sponsors of transportation projects in the state with ensuring compliance with all applicable federal and state laws and regulations; including the CAA, NEPA, and the Federal-Aid Highways code.
  - TxDOT's air quality analysis and reporting requirements are developed to comply with the Federal regulatory requirements listed above.

Air Quality Approach

- **NAAQS Status**
  - Austin-Round Rock Area is currently in Attainment Status for all National Ambient Air Quality Standards (NAAQS); therefore, the transportation conformity rules to not apply - Austin-Round Rock: Current Attainment Status - Texas Commission on Environmental Quality - www.tceq.texas.gov

- **Approach**
  - Utilize Traffic Data and Modeling Analysis
  - Hold pre-work approach coordination meeting with TxDOT Environmental Affairs Division for Mobile Source Air Toxics (MSAT) and Carbon Monoxide Traffic Air Quality Analysis (CO TAQA).
  - Perform MSAT and CO TAQA analysis, develop technical reports, submit to TxDOT Environmental Affairs for review.

Air Quality Analysis

- **Required Analysis**
  - Mobile Source Air Toxics (MSAT) Analysis and Technical Report
    - Required for projects that add capacity and if the design year annual average daily traffic (AADT) is over 140,000 vehicles per day (vpd).
    - Approach: Quantify the MSAT emissions for Base Year (2018), Interim Year (2029), and Design Year (2049) and determine whether the total MSAT emissions in the future years are more than the total MSAT emissions in the base year.
    - Key Inputs:
      - Traffic Data on a link-by-link basis for the affected network (Vehicle Miles Traveled [VMT], vehicle speeds, Road Type)
      - TxDOT Emission Factors for MSATs (*Running Emission Rate Lookup Tables (1/23)*)
    - Outputs:
      - Total emissions for each priority MSAT for each network link
      - Total VMT across the affected network
      - Total MSAT emissions across the affected network

Air Quality Analysis

- **Required Analysis**
  - Carbon Monoxide Traffic Air Quality Analysis (CO TAQA) and Technical Report
    - Required for projects that add capacity and if the design year annual average daily traffic (AADT) is over 140,000 vehicles per day (vpd).
    - Approach: Perform air dispersion modeling using EPA's CAL3QHC dispersion modeling for the ETC year (2029) and design year (2049) on areas of the project that contain the highest AADT and narrowest right-of-way, as well as major signalized intersections to determine whether the concentrations (including the area's background concentration) are less than the 1-hour and 8-hour CO NAAQS.
    - Key Inputs:
      - Traffic Data on a link-by-link basis (Design Hour Volume (DHV), vehicle speeds)
      - Intersection Data (Total signal length, Red Time, Signal Type, Arrival Rate)
      - TxDOT Emission Factors for CO (*Idling Emission Rate Lookup Tables (1/23) and CO TAQA Running Emission Rate Lookup Tables (1/23)*)
    - Outputs:
      - 1-hour and 8-hour CO concentrations at each receptor

Air Quality Analysis

- **Optional Analysis**
  - Greenhouse Gas and Climate Change Technical Report
    - Approach: Develop a greenhouse gas analysis, to include a description of greenhouse gas emissions (traffic, construction, emissions).
    - Key Inputs:
      - Emission data (Materials, Transportation, Construction, Operations & Maintenance, Usage (VMT) for no build and preferred alternative)
    - Outputs:
      - Total metric tons of CO_2E/year

Air Quality References

- **References**
  - TxDOT's Air Quality Toolkit - Air Quality Toolkit (txdot.gov)
  - TxDOT's Environmental Handbook for Air Quality - Environmental Handbook: Air Quality (txdot.gov)

2024 Technical Working Group: Utilities

MoPac South
ENVIRONMENTAL STUDY

May 22, 2024

Utilities Process

- **KMZ includes:**
  - City of Austin Water
  - Wastewater
  - Austin Energy
  - Pole attachment
- **Potential Conflicts identified**
  - Retaining walls
  - Drainage
  - Overhead structures
  - Bridges
  - Sidewalk/SUP
- **Confirmation process begins with project approval**
- **Determine if Roadway designs can be modified to eliminate/avoid specific conflicts.**

2024 Technical Working Group: Parkland & Bike/Ped

MoPac South
ENVIRONMENTAL STUDY

May 29, 2024

Parkland Process – Regulatory Overview

Section 4(f)

- Section 4(f) of the U.S. Department of Transportation Act (U.S. DOT ACT) protects publicly owned and accessible parks, recreation areas, and wildlife and waterfowl refuges and historic sites, regardless of ownership and accessibility (23 CFR 774.13).

Section 6(f) of the Land and Water Conservation Fund (LWCF) Act

- Section 6(f) provides that property acquired or developed with LWCF assistance shall be retained and used for public outdoor recreation.

Parkland Process

Section 4(f) Review

- **Section 4(f) applies if the property is:**
  - Publicly owned,
  - Open to the public,
  - Primary purpose is recreational,
  - Determined significant by official with jurisdiction (OWJ)

- **Typical Process to identify 4(f) Properties:**
  1) Perform desktop review for Section 4(f) properties using publicly available data sources (COA, THC, TPWD, etc.)
  2) Develop detailed maps of the Section 4(f) property/properties, include current and proposed ROW, property boundaries, etc.
  3) Contact the official with jurisdiction (OWJ), request any additional information needed about the property.

Parkland Process

Section 4(f) Determination Process and Approval Type

- **Determine if Section 4(f) Exceptions apply to the Project:**
  - Temporary occupancy,
  - Trail, Path, Bikeway, or Sidewalks
  - Transportation Enhancements or Mitigation

  *To qualify as a 4(f) Exception, no additional ROW or permanent easements can be acquired from the 4(f) property.
  - The official with jurisdiction must concur to proceed with an exception.

- **TxDOT Process For Exception Requests:**
  1) Submit Letter of Intent to Pursue an Exception to OWJ and/or SHPO.
  2) Complete TxDOT's Section 4(f) Exceptions Checklist.

Parkland Process

Section 4(f) Determination Process and Approval Type

- ***De Minimis* Determination**
  - The minimum requirement when a project would result in a take or use from a Section 4(f) property.
  - A "take" includes the requirement for additional right of way or permanent easement from the property.
  - A "use" can occur when the use of the property is interrupted, access is limited, or an activity would no longer be available.
  - Determining if an impact is *de minimis* is dependent upon the official with jurisdiction, which must concur to proceed with a *de minimis* finding.

- **TxDOT Process For *De Minimus* Determinations*:***
  1) Submit Letter for Concurrence on a Section 4(f) *De Minimis* Determination to OWJ.
  2) Incorporate into public involvement process
  3) Obtain concurrence from OWJ. The official must concur in order to move forward with a *de minimis* finding.
  4) Complete TxDOT's Section 4(f) *De Minimis* Checklist.

Parkland Process

Section 4(f) Determination Process and Approval Type

- **U.S. DOT Act Section 4(f) Programmatic Evaluations**
  - Can be used in place of individual evaluations for highway projects where uses are considered minor. There are five different types of Section 4(f) Programmatic Agreements.
    - Independent Walkway and Bikeways Construction Projects
    - Historic Bridges
    - Minor Involvements with Historic Sites
    - Minor Involvements with Parks, Recreation Areas and Waterfowl and Wildlife Refuges
    - Net Benefits to a Section 4(f) Property

- **TxDOT Process For Programmatic Evaluations:**
  1) Determine if project activities to 4(f) properties meet one of the Section 4(f) Programmatic Agreements.
  2) Complete TxDOT's Section 4(f) Programmatic Evaluation of Historic Bridge Projects.
  3) Complete TxDOT's Net Benefit Checklist (for parks, recreation areas, refuges, historic sites).

Parkland Process

Section 4(f) Determination Process and Approval Type

- **Individual Evaluations**
  - An individual Section 4(f) evaluation must be completed if project impact results are greater than *de minimis* impact and a programmatic Section 4(f) evaluation cannot be applied to the situation (23 CFR 774.3).

- **TxDOT Process For Individual Evaluations**
  1) Complete Individual Section 4(f) Evaluation

Parkland Process

Section 6(f) of the Land and Water Conservation Fund Act

- Section 6(f) provides that property acquired or developed with LWCF assistance shall be retained and used for public outdoor recreation.

- The National Park Service (NPS) administers the LWCF Act and delegates roles and responsibilities to Texas Parks and Wildlife Department (TPWD).

– **Typical Process to identify 6(f) Properties:**

- Utilize the Land and Water Conservation Fund Coalition data viewer (https://lwcf.tplgis.org/)

- Coordinate with TPWD's Local Park Grants Coordinator, who typically has to look into TPWD's archives for boundary data.

- Coordinate with City of Austin Parks and Recreation Department

Parkland Process

- **Section 6(f) Temporary Uses and Compliance Paths**
  - Temporary use of 6(f) properties may be required for the purposes of staging areas, construction easements, or equipment or material storage.
  - **Temporary uses of six months or less**
    - TxDOT to work with the owner of the 6(f) property and prepare a written request regarding the temporary use.
    - Submit to “state liaison officer” (TPWD), who will the submit to NPS
    - If the NPS agrees that the temporary use of six months or less is not a conversion, then no further compliance actions are needed.
  - **Temporary uses of more than six months**
    - Continued use beyond six months will not be considered temporary but will result in a conversion of use and will require the project sponsor to provide a new replacement recreation area.

Parkland Process

Federal Regulations and References

- 49 USC 303 – Policy on lands, wildlife and waterfowl refuges, and historic sites
- 23 USC 138 – Preservation of Parkland
- FHWA NEPA Regs 23 CFR 774
- FHWA Technical Correction to 23 CFR 774
- FHWA Section 4(f) Policy Paper
- https://ftp.txdot.gov/pub/txdot-info/env/toolkit/820-01-gui.pdf
- U.S DOT Section 4(f) Toolkit (txdot.gov)
- Land and Water Conservation Fund Act toolkit (txdot.gov)
- https://ftp.txdot.gov/pub/txdot-info/env/toolkit/820-01-gui.pdf

Bike/Ped Process

- **Prior Coordination:**
  - Hill County Conservancy
  - Zilker Vision Plan
  - Bike Austin
- **SUP along east side, sidewalks in more populated areas on west side**
- **Connections to existing trails**
  - Violet Crown Trail in Dick Nichols Park at the southern Kincheon Branch Bridge
  - Violet Crown Trail on the west side at Brush Country Road
  - SUP bridge crossing Williamson Creek Greenbelt & connection to Violet Crown Trail
  - Zilker
  - Roberta Crenshaw

2024 Technical Working Group: Water Quality & Water Quantity

MoPac South
ENVIRONMENTAL STUDY

June 5, 2024

Water Quantity Process

- Hydrology is based upon Effective COA or FEMA models as of August 2020 where available.
- Effective models were updated for Atlas 14 Precipitation and the Project improvement. Offsite conditions were reviewed for impervious cover consistency.
- Where Effective models were not available in digital form, onsite flows generated by the project were compared to Effective flow rates contained in FEMA flood insurance studies.
- When Atlas 14 Models are available, project impacts will be reviewed against latest models.

Water Quantity Approach

Effective Models Updated (Hydrograph Comparison)

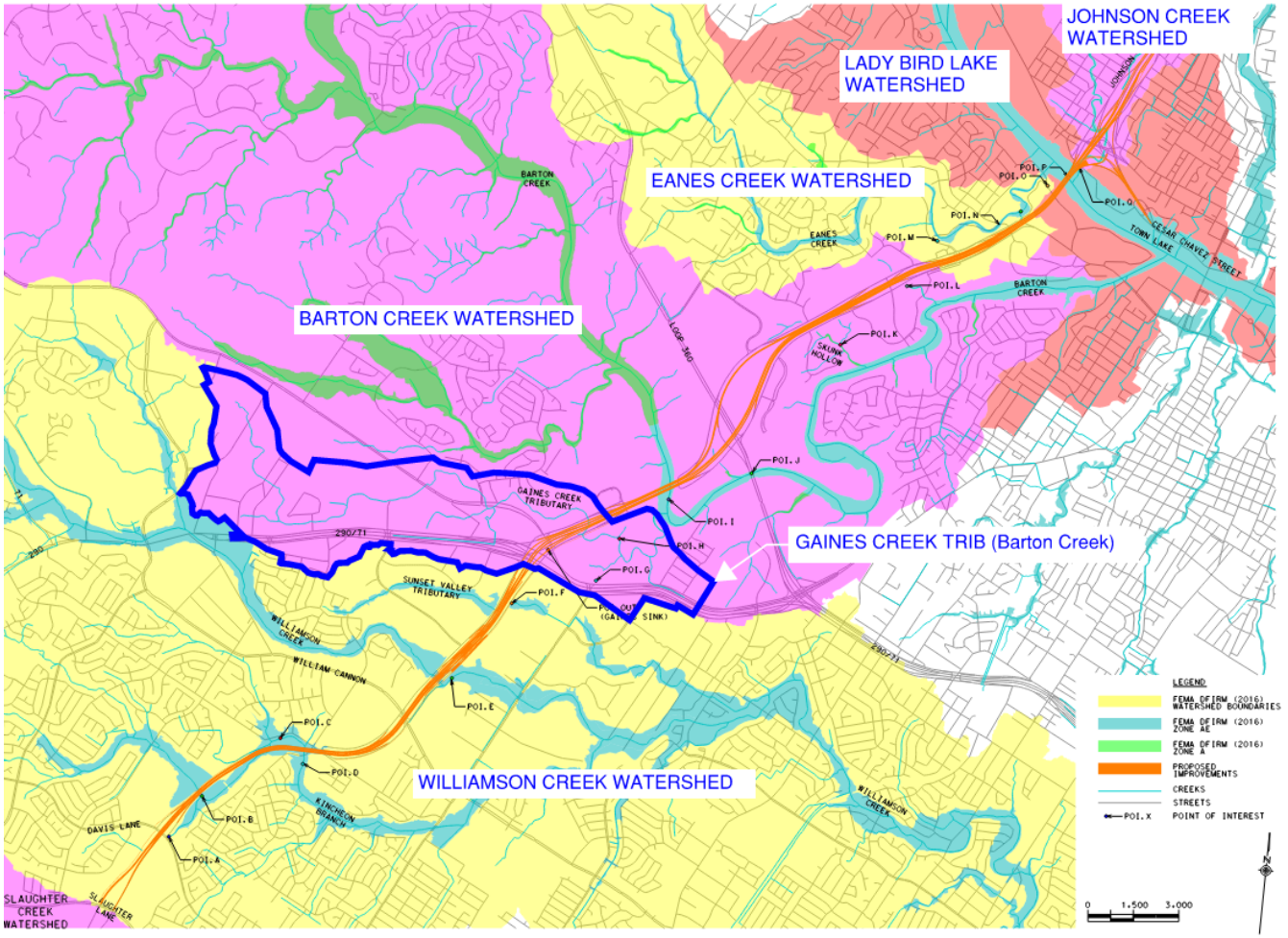
- Williamson Creek and the Gaines Creek Tributary

No Digital Model Available (Flow Rate Comparison)

- Barton Creek
- Eanes Creek
- Johnson Creek

Colorado River Flood Damage Evaluation Project

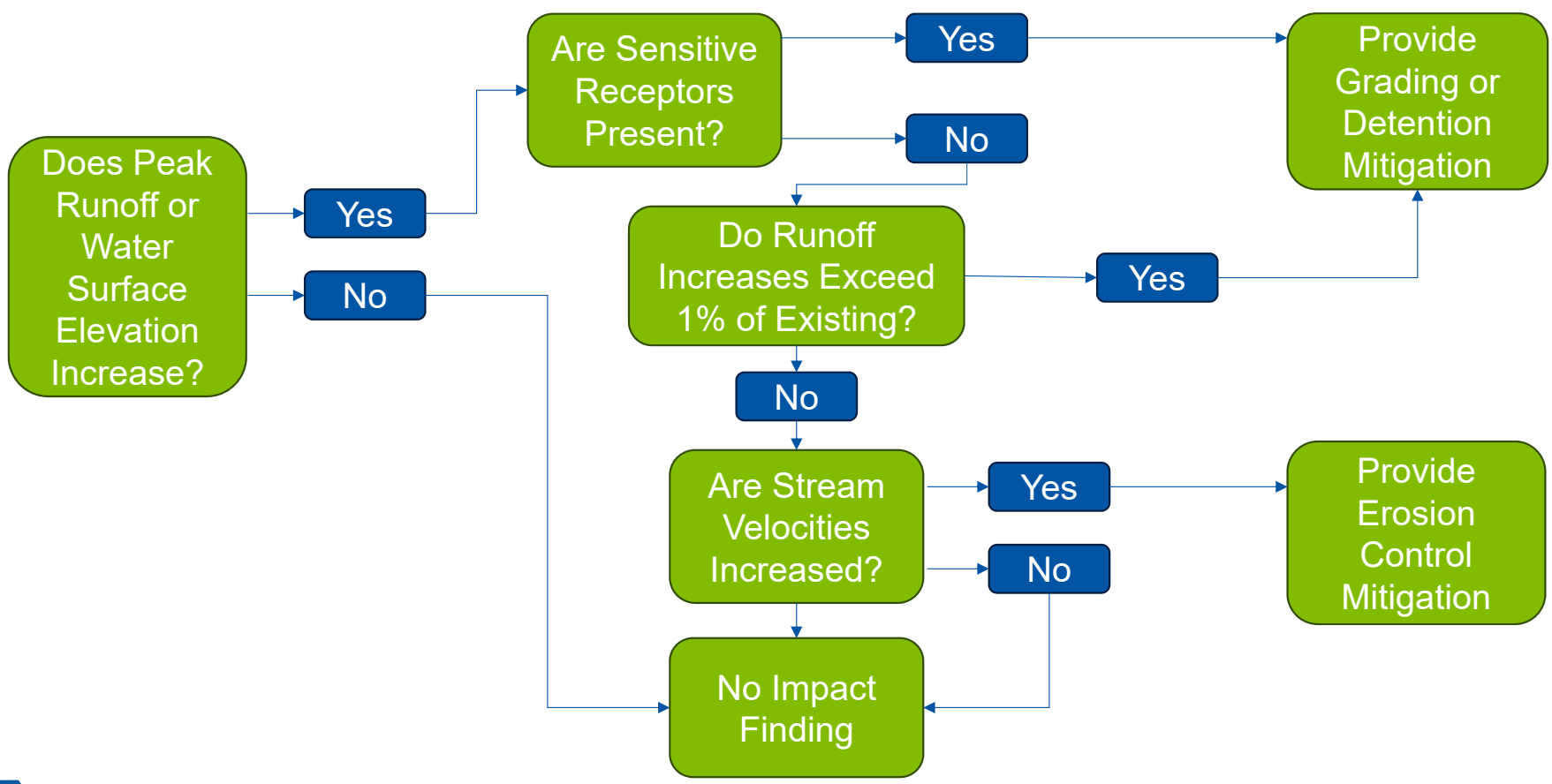
- Lady Bird Lake



Water Quantity Process

- Flow rate and water surface comparisons were made wherever runoff left the Project's ROW at eighteen points of interest (POIs). The project corridor was reviewed for sensitive flood receptors.
- Sensitive flood receptors are properties or structures where increases in flow or water surface elevation could result in flooding, property damage, or loss of property value.
- Impacts were evaluated based upon increased flow, water surface elevation, or velocity and erosivity.

Water Quantity Approach



Water Quantity Summary

- Sensitive flood receptors were found at seven locations; however, no increased flooding risk or adverse impacts have been associated with the Project.
- Channel grading is anticipated within the Project ROW along the Kincheon Branch of Williamson Creek to maintain existing water surface elevations.
- Underground detention in the form of proposed oversized storm sewers or box culverts is anticipated at an Unnamed Tributary to Barton Creek just north of Barton Skyway.

Water Quality Regulatory Review

- Project is within the Barton Springs Zone of the Edwards Aquifer Recharge Zone
- S. MoPac was originally constructed with no TCEQ permitting; a 1990 Consent Decree required hazardous material traps installed adjacent receiving streams south of SH 71
- Current TCEQ Requirements: 80% of all increases to Total Suspended Solids caused by the project must be treated
- Project is committed to 100% treatment of all increased TSS loading
- COA SOS Initiative: All Development Subject to the Save Our Springs Initiative (withing the Barton Springs Zone) shall demonstrate that post-project discharge loads do not exceed beyond the existing conditions load which will be met for TSS

Water Quality Approach

- **To determine pre-Project pollutant loads, impervious cover was evaluated based on 1997 COA planimetric data. At this time, no part of the project was permitted by TCEQ. Total increased loadings were evaluated on this basis.**
- **Batch Detention has been selected as the preferred BMP due to high capture efficiency and ability to serve as a hazardous material trap.**
- **Treatment Devices Considered in Order of Preference**
  - Batch Detention (Primary)
  - Vegetated Filter Strips
  - Proprietary Devices
  - Permeable Friction Course

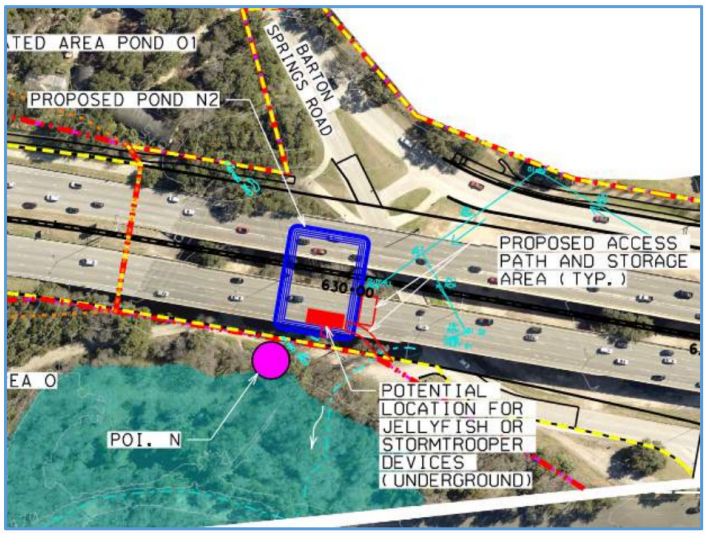
Improving Water Quality

- **Treatment will be maximized within the Project ROW to the extent practical.**
- **Proprietary devices are anticipated to target additional pollutants specified by the Save Our Springs ordinance and to reduce the project footprint, with a focus on pollutants associated with roadways.**

Table 1 - SOS Indicator Constituents

Chemical Oxygen Demand, COD
E. Coli
Total Lead, Pb
Total Nitrogen, TN
Total Organic Compounds. TOC
Total Phosphorus, TP
Total Suspended Solids, TSS
Total Zinc, Zn

POLLUTANTS ASSOCIATED WITH ROADWAYS



Geologic Assessment Summary

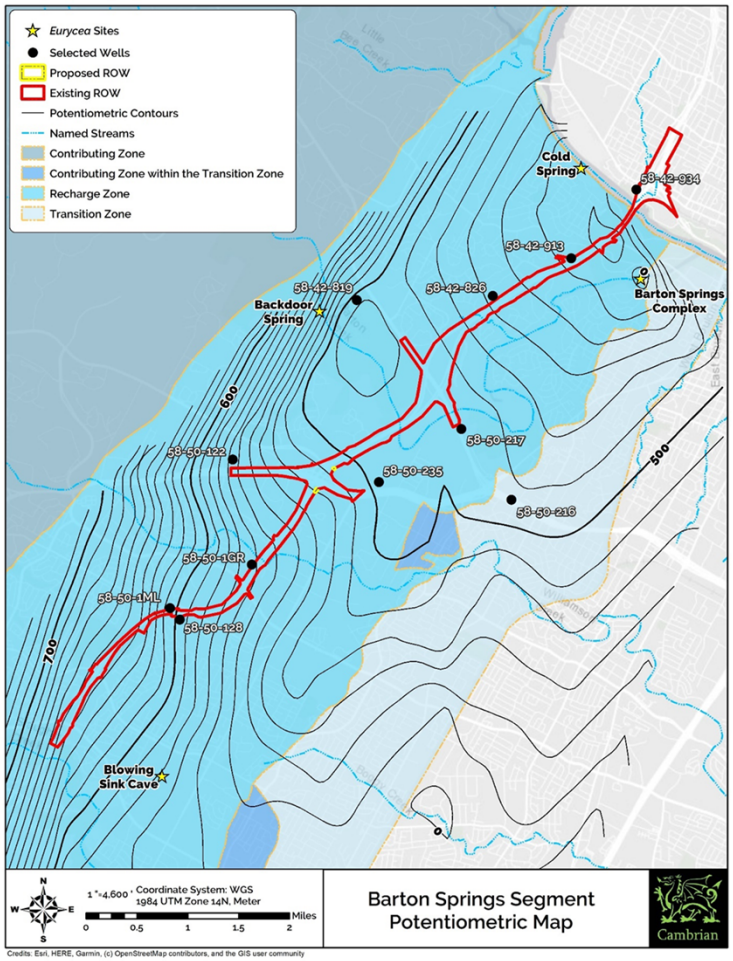
- Field Survey following TCEQ Instructions to Geologists
- 12 features with a karstic origin, 5 of which are sensitive to recharge
- 61 features by type
  - 1 sinkhole (Gaines Sink)
  - 11 solution cavities and solution enlarged fractures
  - 30 mapped faults
  - 12 closed depressions of non-karst origin
  - 7 other bedrock features (fractures in a cliff face)
- Literature review summarizing features outside the ROW
  - Numerous caves and other recharge features within 500 feet of ROW
  - Other sensitive features in waterways downstream of the project

Karst Invertebrate Habitat Approach

- **Review of listed species and other endemic troglobitic fauna known from southern Travis and northern Hays counties, including those identified as BCCP SOC and significant karst features <500 feet of the ROW**
- **Studies suggest biological diversity in the Balcones Escarpment follows patterns linked to fault zone structure**
  - **North of the Colorado River – listed species not expected to occur**
  - **Rollingwood karst fauna region – Bee Creek harvestman know to occur, not known to range south of Barton Creek**
  - **South Travis region – listed species not expected to occur, contains extensive habitat for non-listed karst species, including at least 2 SOC as identified under the BCCP**
- **Earlier karst investigations detected no habitat occupied by listed species in the ROW**

Groundwater Flow & Occupied Springs

- **Barton Springs Segment**
  - Groundwater discharges from Cold Springs and Barton Springs which contain habitat for *Eurycea* salamanders (BSS and ABS)
  - Water table conditions are well studied, approach focuses on high flow conditions (BSEACD)
  - Project area crosses 3 known groundwater basins: Cold Springs, Sunset Valley and Manchaca
  - *Eurycea* occurrence – absent at the surface within the ROW but present at Blowing Sink Cave, Back Door Spring, Cold Springs and Barton Springs



2024 Technical Working Group: Cultural & Historic Resources

MoPac South
ENVIRONMENTAL STUDY

June 5, 2024

Cultural Resources Process

- **Regulatory Overview**
  - Federal - Section 106 of the National Historic Preservation Act
    - Requires federal agencies to consider the effect of federally funded projects on Historic Properties (National Register of Historic Places-listed or eligible)
    - Requires consultation with the State Historic Preservation Office (SHPO) or Texas Historical Commission (THC), Federally listed Tribes, and the public
    - Section 106 Process: identify Historic Properties, assess adverse effects to Historic Properties, resolve adverse effects through a Memorandum of Agreement
  - State - Antiquities Code of Texas
    - Requires state agencies and political subdivisions of the state to notify the THC of ground disturbing activities on public land
    - Requires a Texas Antiquities Permit issued by the THC to a qualified archeologist to conduct the investigation
  - TxDOT Process to satisfy these requirements is conducted under:
    - Section 106 Programmatic Agreement (between FHWA and TxDOT)
    - Memorandum of Understanding with the Texas Historical Commission (THC)

Cultural Resources Process

- **TxDOT Process and Requirements**

  - Archeological Resources
    - Archeological Background Study Report
    - Coordination with TxDOT ENV reviewer regarding Archeological Area of Potential Effect (APE) and survey recommendations
    - Complete Texas Antiquities Permit and Research Design, submit to ENV and THC for approval
    - Perform approved Archeological surveys
    - Complete Archeological Survey Report for approval by TxDOT ENV and THC

  - Historic Resources
    - Project Coordination Request (PCR) for Historic Studies
    - Coordination with TxDOT ENV reviewer regarding Historic Resources APE and Survey
    - Complete Research Design, submit for approval to TxDOT ENV
    - Perform Historic Resources Survey
    - Complete Historic Resources Survey Report TxDOT ENV and THC

2024 Technical Working Group: Schematic Safety & Operations

MoPac South
ENVIRONMENTAL STUDY

June 12, 2024

Operations & Safety Improvements

- **Bike/Ped Accommodations - Shared Use Path & Sidewalk**
  - Shared Use Path separated from vehicular traffic
  - Davis Lane SUP Crossing with raised median refuge
  - Convict Hill Road/Latta Drive intersection pedestrian ramp separation
  - Signal Controlled Pedestrian Crossing of Barton Springs Road at Zilker Park
  - Shared Use Path adjacent to SB Barton Springs crossing under MoPac; separation of the bike lane from the vehicular traffic
- **Improving Speed Change Lanes**
  - SB entrance-ramp from William Cannon Drive additional acceleration length prior to merge
- **Queue Mitigation**
  - SB Frontage Road at William Cannon Dr. intersection, additional storage mitigates traffic backups onto the general purpose Lanes
  - WB Loop 360 additional right turn lane onto MoPac NB Frontage Road reduces queue on WB Loop 360
  - MoPac Frontage Road SB to NB U-Turn at Loop 360, additional turn bay length to allow U-turn traffic

Operations & Safety Improvements

- **Roadway/Ramp Configuration - Reducing Existing Conflict Points**
  - NB Ramps: braided entrance & exit ramps north of William Cannon Drive to remove weaving section.
  - SB Ramps: Exit and Entrance ramp locations north of William Cannon Drive reversed to move weaving section to the lower speed facility.
  - WB US 290 to SB MoPac Direct Connector Ramp separated from SB Exit and Entrance Ramps to remove weaving
  - NB Ramp Reversal North of Loop 360 moves the weaving section to the lower speed facility and reduces the backup into the intersection
  - SB Entrance Ramps from Bee Cave Rd and Barton Skyway form a collector distributor road that is braided over the general purpose lanes and enters on the left side for access to Loop 360 EB eliminating the heavy weaving movements from the right entrance ramps to left exit ramp
  - Shift SB exist to Bee Cave Rd north to allow more weaving length for WB Bee Cave Rd
  - Barton Skyway SB to NB U-turn Bridge removes two the left turn movements at the Barton Skyway intersections
  - WB Lake Austin Blvd. loop ramp reduces the left turn movement at the intersection with Atlanta Street
- **Roadway/Ramp Configuration – Designing to Reduce Conflict Points**
  - NB Express Lane entrance from William Cannon Dr. braided over General Purpose eliminates merging and weaving conflicts to access the express lane
  - Express Lane Direct Connector from EB US 290 to NB MoPac & SB MoPac to WB US 290 removes weaving conflicts to access the express lane
  - Express Lane Wishbone Ramps allow access between the express lanes and Cesar Chavez St. without weaving across the general purpose lanes

Discussion

Thank You

Visit MoPacSouth.com for past materials and more information about the ongoing Environmental Study

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ENVIRONMENTAL STUDY