

Urban Mobility Assessment

Salt Lake City



EXECUTIVE SUMMARY

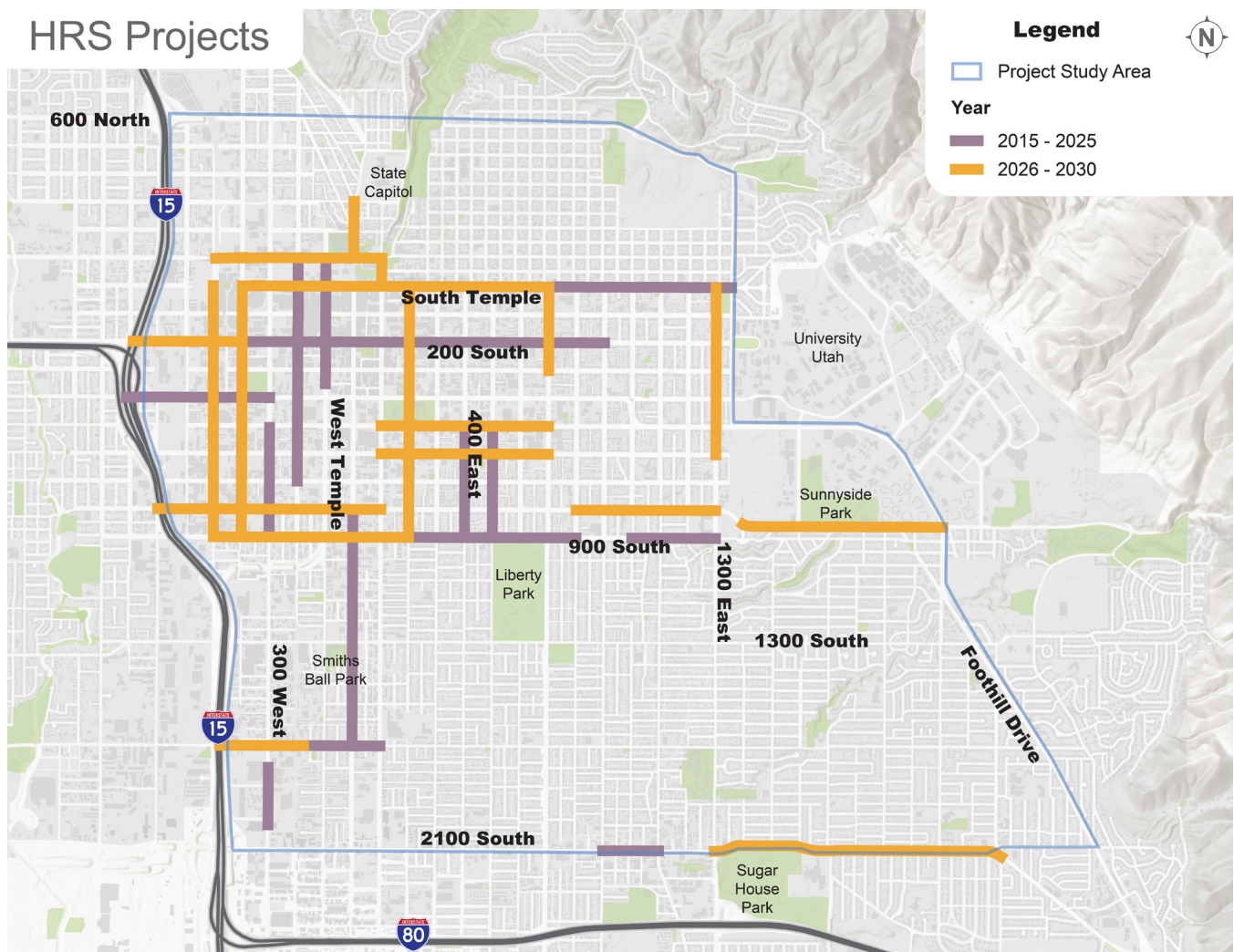


OCTOBER 2025

EXECUTIVE SUMMARY

INTRODUCTION

This executive summary provides an overview of the processes, results, and considerations of the Salt Lake City Urban Mobility Assessment prepared by the Utah Department of Transportation (UDOT) pursuant to Senate Bill 195 (2025). It highlights key findings related to vehicular mobility, environmental topics, and public engagement resulting from completed and future proposed highway reduction strategy (HRS) projects, meaning any projects that have the potential to permanently decrease the number of vehicles that can travel on an arterial or a collector highway.



VEHICULAR MOBILITY

The following provides an overview of processes used to determine the potential impacts of HRS projects on vehicular mobility.

Methodology

- Identified HRS projects completed by Salt Lake City (SLC) between 2015 and 2025.



- Reviewed data provided by SLC for its projects including traffic modeling, safety analysis, and overall project documentation.
- Used historical data to measure traffic conditions before, during, and after construction of completed projects.
- Historical data sources:
 - » Automatic Traffic Signal Performance Metrics (ATSPM) data, which is collected continuously from the traffic signals using inputs such as vehicle detectors (radar, video and Lidar) and push buttons. ATSPM provide metrics such as traffic volumes, split failures, delay, and pedestrian activations.
 - » Performance Measurement System (PeMS) uses permanent counting equipment on freeways and ramps to count vehicles continuously all year. This data can show seasonal trends, and trends over time, although data is limited to the edge of the study area.
 - » Continuous Count Stations (CCS), similar to PeMS, provide continuous traffic counts on arterials. Three are located within the study area.
 - » ClearGuide data is passively collected by a third party from sources such as cell phones and connected vehicles that are aggregated to get travel times and speeds. This is a “sampling” of data, so only speeds and travel times are collected, but not traffic volumes.
 - » Construction data included the locations and durations of construction projects within the study area.
- Collected new data to validate historical data and models. Data sources include:
 - » Turning Movement Counts, which provide peak period traffic volumes at 16 intersections in 2025.
 - » Tube Counts, which provide mid-block volume, speed, and vehicle classifications were collected at eight locations in 2025.
 - » Intersection observations of queuing and other operating conditions during the peak travel periods.
- Performed Representative Day Analyses to understand better the nuance of varying traffic flows over course of the day, week, month, and year.
- Used the Wasatch Front Travel Demand Model (TDM) to create a 2015 model, a 2025 model without completed HRS projects, an existing 2025 model with completed HRS projects, a 2035 model without future HRS projects, and a 2035 model with future HRS projects.
 - » The TDM Traffic Analysis Zone (TAZ) structure and roadway network were refined to improve model calibration and allow for evaluation of all HRS projects.
 - » The models provided overall metrics such as delay and link speeds and were used to produce future volumes for microsimulation analysis, as well as provide intermediate inputs for the environmental analysis.
- Developed traffic models for completed and future HRS projects using VISSIM, Synchro, and Sidra software.
- Level of Service (LOS) and queuing were calculated based on Highway Capacity Manual (HCM) methods for future HRS projects using microsimulation tools.



Results

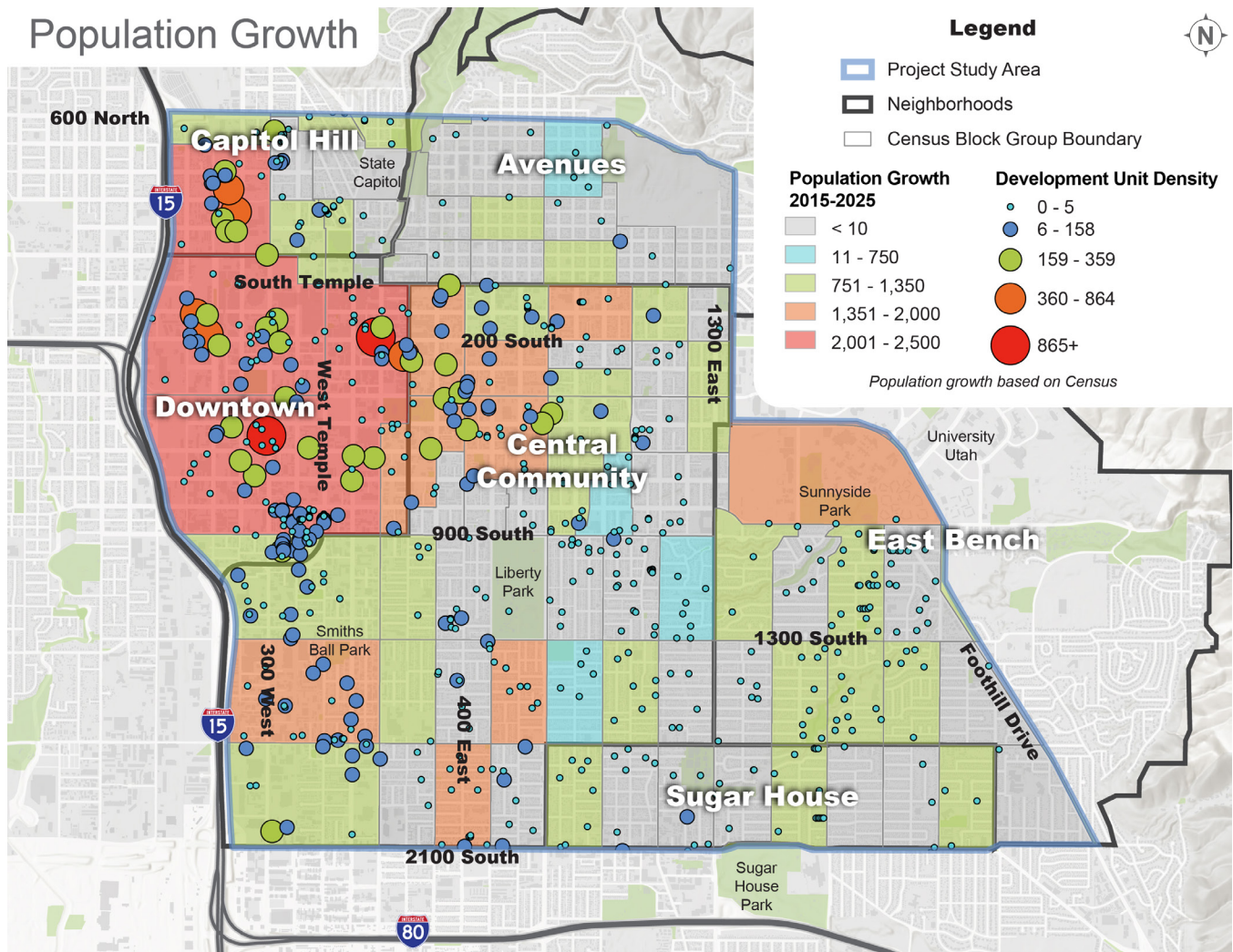
Completed HRS Projects with Lane Reductions

- Traffic operational metrics were evaluated for:
 - » each completed HRS corridor,
 - » influence area (0.75-mile buffer around the HRS corridor), and
 - » the study area.
- Traffic operational metrics evaluated include:
 - » **ATSPM Traffic Volumes:** Where traffic volumes were available, 57% were observed to have decreasing volumes while 43% remained at similar levels before and after the project was constructed.
 - » **ATSPM Split Failures¹:** 70% of HRS corridors had negligible changes in split failures, while 30% of locations showed an increase.
 - » **ATSPM Force Offs²:** 73% of HRS corridors had negligible changes in force offs while 27% of locations showed an increase.
 - » **ClearGuide Speeds:** 73% of HRS corridors had minimal changes to speeds before and after construction, while 9% of corridors had increases and the remaining 18% had decreases.
- Traffic metrics for HRS impacted corridors generally show negligible changes in traffic mobility (volumes, speeds, signal operations).
- Complicating factors include:
 - » **Construction impacts:** Mobility was impacted during construction of some of the HRS projects, and certainly noticed by roadway users. Drivers could construe construction impacts with long-term impacts, especially for more recently constructed projects.
 - » **Effects of the COVID-19 pandemic:** Traffic was significantly reduced during the pandemic, but has since rebounded to pre-pandemic levels. Roadway users have likely noticed this and might be attributing it to the impacts from HRS projects.
 - » **Signal timing:** Signal timing plays a significant role in how much delay is experienced by roadway users. Impacts to mobility caused by HRS projects could be hard to distinguish from impacts due to poor signal timing. Conversely, negative impacts to mobility due to HRS projects could potentially be mitigated with signal retiming.
 - » **Land use changes including residential and business growth:** SLC has experienced significant residential growth. Similar to the effects of the COVID-19 pandemic, some drivers may attribute this to the HRS projects.

¹ ATSPM split failures indicate how often vehicles cannot pass through an intersection during a single phase; high split failures indicate there may be excessive queuing.

² Force-offs occur when the green split needs to end to serve the next phase despite additional demand; higher force offs indicate potentially more congestion.





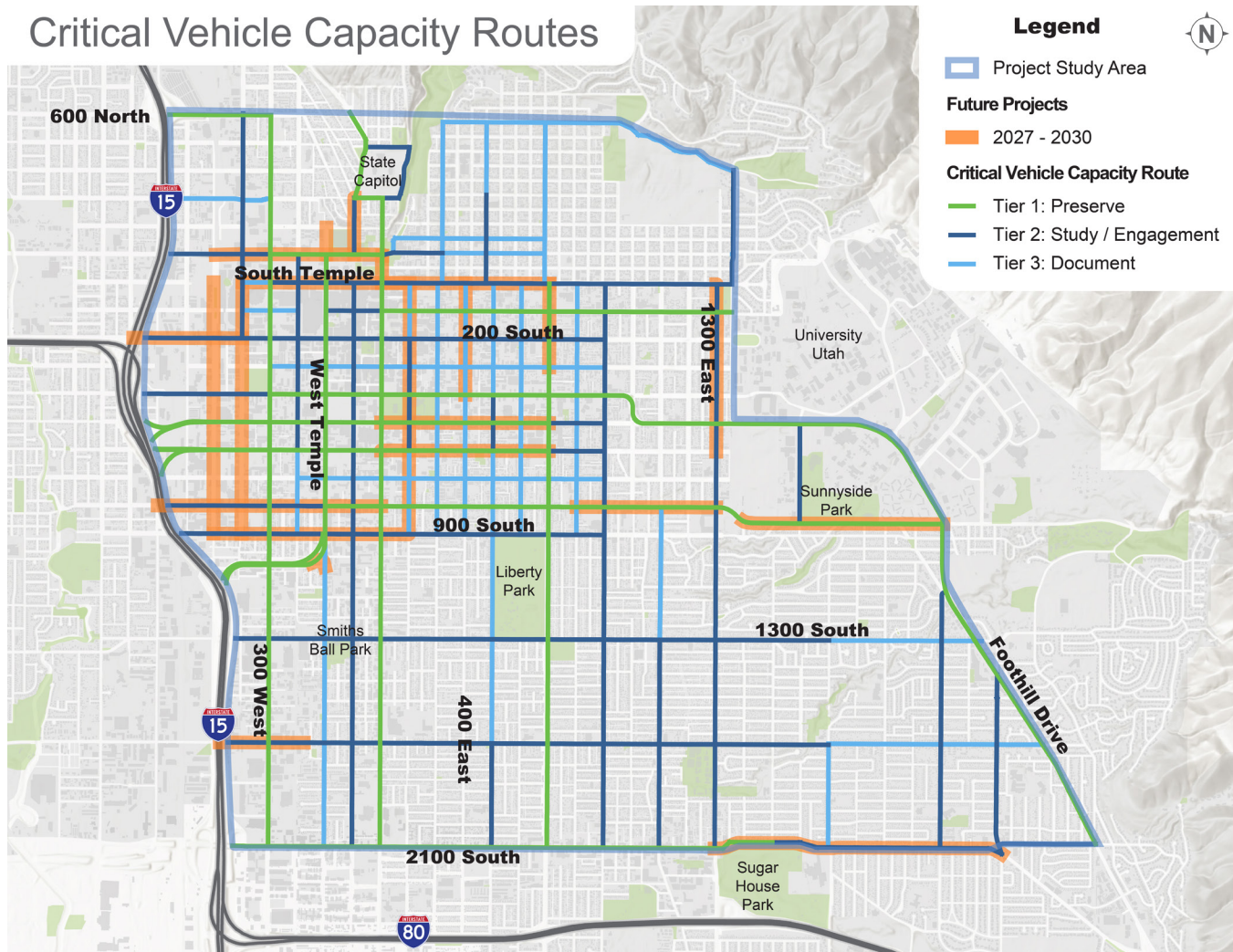
Completed HRS Projects without Lane Reductions

- Impacts to vehicle mobility on HRS projects that did not reduce lanes were found to be negligible.

Future Proposed HRS Projects with Lane Reductions

- Generally, there were few differences between no-build and build (HRS) conditions, although some LOS deterioration was estimated.





Considerations

- SLC and UDOT should update signal timing across the network, as the last comprehensive signal timing update occurred in 2018. Uncoordinated signal timing can have a large impact to delay. Significant growth and changes to travel patterns have occurred since 2018 and a comprehensive update to signal timing would be beneficial.
- While the network grid provides redundant routes, comprehensive analyses of impacts to subject corridors, particularly those on critical capacity routes, and nearby corridors should be undertaken to ensure diverted traffic has a reasonable detour route without causing unintended operational issues off-corridor.
- A framework should be identified to guide appropriate traffic analyses of future HRS projects including consideration of utilizing currently existing UDOT Traffic Analysis Guidelines.
- Although a useful tool in evaluating regional impacts to traffic, the TDM lacks sufficient granularity to accurately represent conditions in downtown SLC. Care should be taken when using it to evaluate future impacts.

ENVIRONMENTAL

Methodology

The following provides the environmental topics and the process used to determine projected impacts:

- **Economics:** Applied the Wasatch Front Regional Council (WFRC) TDM to generate vehicle speeds, percentage of truck traffic, and truck vehicles miles traveled for use in IMPLAN, which estimated the direct, indirect, and induced effects of HRS projects on the local economy.
- **Air Quality:** Applied WFRC TDM vehicle speeds and truck traffic percentages to the U.S. Environmental Protection Agency's MOVES Model to quantify annual emissions for criteria pollutants and mobile source air toxics (MSATs).
- **Emergency Response:** Used the WFRC TDM PM peak travel times in ArcGIS's isochrone mapping function to show areas of equal travel time from a specific point.
- **Public Health:** Developed a qualitative assessment based on recent studies that correlate walking and health outcome, local hospitals' health assessments of the local area, and data on pedestrian call button and transit usage as available.
- **On-street Parking:** Documented parking changes through manual counts of aerial imagery from 2015 to 2025 for each completed and future HRS project.
- **Vehicular and Pedestrian Safety:** Analyzed Utah Transportation and Public Safety (UTAPS) crash data to identify before-and-after trends in crash type, severity, and frequency.
- **Active Transportation:** Applied the HCM methodology to determine changes in bicycle and pedestrian LOS.
- **Transit:** Analyzed Utah Transit Authority (UTA) Automated Passenger Count and archived General Transit Feed Specification data to identify before-and-after HRS trends, and used Federal Transit Administration Simplified-Trips-on-Project Software to estimate future ridership.
- **Operations and Maintenance:** Interviewed SLC, UDOT, and UTA maintenance and operations personnel to identify common concerns related to HRS projects.

Results

- **Economics:** Projected job losses would be negligible. Economic and fiscal impacts are expected to increase over time but would remain minimal relative to overall economic output.
- **Air Quality:** Air quality is expected to improve over time, with only negligible pollutant increases attributable to HRS projects.
- **Emergency Response:** HRS projects and growth have had a negative effect on fire/EMS and hospital response time requiring additional resources to be deployed in order to maintain contracted response times.
- **Public Health:** HRS projects increased pedestrian activity and overall walking distances, resulting in a modest improvement in public health. Future HRS projects are expected to continue this trend.
- **On-street Parking:** A cumulative 6% decrease in parking observed on past HRS corridors; when including adjacent streets within one block, the decrease drops to 2%.
- **Vehicular and Pedestrian Crashes:** No evidence of an increasing trend in severe or fatal crashes was found on completed HRS corridors. Historical data and predictive analyses revealed minimal changes consistent with overall study area trends.



- **Active Transportation:** Changes in bicycle and pedestrian LOS when analyzed using the Highway Capacity Manual methodologies are negligible; most corridors in the area would provide LOS A or B.
- **Transit:** Changes in ridership and travel time are negligible or slightly better.
- **Operations and Maintenance:** Aspects of HRS projects (e.g., narrow lanes, raised curbs, bulb outs, green pavement paint, etc.) complicate routine maintenance tasks.

Considerations

- Before removing on-street parking, conduct a parking study to assess potential effects on businesses and residents. The study must inventory all available parking (on-street, off street, public, and private) within a reasonable walking distance, anticipate future parking needs through coordination with city planning organizations, and include stakeholder input.
- Engage maintenance and traffic staff during planning and design phases to identify and address potential operational concerns.
- Obtain input from emergency service providers during planning and design phases to ensure future HRS projects do not adversely affect emergency response times.

PUBLIC ENGAGEMENT

Methodology

Stakeholder engagement included a public survey, stakeholder interviews, service provider meetings, email input, and economic impact interviews. The goal was to provide a transparent and comprehensive view of if and how HRS projects in SLC have affected residents, businesses, commuters, institutions, and service providers. This data reflects both the breadth of public sentiment and the depth of stakeholder experience.

Qualitative datasets include:

- **Survey:** 3,800+ responses with 2,500 + usable, open-ended comments from residents, commuters, and businesses.
- **Service Provider Meetings:** Notes and transcripts from EMS, freight, venues, operations, and maintenance providers.
- **Stakeholder 1x1 Interviews:** Institutional leaders including universities, retail centers, and cultural venues.
- **Email Input:** Twelve long-form submissions from residents and stakeholders.
- **Economic Impact Interviews:** Focused discussions on operational costs, retail viability, and resilience with large and small businesses and chambers of commerce.

In addition, a Stakeholder Committee was convened to provide input, share the survey with their networks, and participate in a data collection review meeting to understand what data would be used for the study and how it would be analyzed and reported.

Results

Post-project recovery is ongoing for many stakeholders, and the complete picture of changes and impacts is currently unknown. Anecdotally, businesses report that it takes about two years to recover from a significant project or impact, such as construction or the COVID-19 pandemic. Future study may be needed to understand the full spectrum of impacts. The qualitative analysis reflects what is known now and indicates both support and frustration:

- Many respondents appreciated improvements in walkability, safety, and vibrancy.

- Others were concerned about disruption, emergency delays, freight challenges, and parking loss.
- Service providers and institutions noted resilience but also hidden operating costs.

Across all sources, one consistent theme stands out – the success of projects is determined less by the projects themselves and more so by how they are delivered. When projects are well communicated, access is maintained, and emergency and freight needs are integrated into design, they are generally seen as successful and impacts are better tolerated both during and after construction. When these elements are missing, frustration grows and trust erodes.

To aid analysis of the survey and the large qualitative dataset that resulted from almost 4,000 responses, advanced data processing tools were used to systematically summarize and categorize data for clarity and efficiency. Output was reviewed and verified by members of the project team.

CONSIDERATIONS

Emergency & Safety

- Coordinate with EMS during design to ensure final roadway appropriately accommodates access and maneuverability.
- Coordinate with EMS during planning and design phases to determine appropriate secondary routes during construction.

Logistics & Freight

- Engage freight providers and those they serve early in design so loading zones are placed where they are needed and appropriate curb management can occur.
- Incorporate turning radii, loading/delivery needs, and staging areas for large trucks into design standards.

Venues & Patron Access

- Protect Americans with Disabilities Act (ADA) parking stalls during and after construction.
- Maintain visibility and access for retail tenants to support customer traffic, including enhanced wayfinding signage where appropriate during construction.

City Operations & Maintenance

- Budget for ongoing maintenance of bollards, planters, irrigation, and landscaping, etc.
- Include operations staff in design reviews before finalizing new features to ensure maintainability and siting to reduce damage.
- Account for snowplow and street sweeper access when designing new features.

Construction Management

- Coordinate projects (roadway, utilities, etc.) that affect the same area to minimize extended impacts, or rolling impacts for different work.
- Ensure portable/movable traffic control devices, such as cones and barricades, are removed when work has been completed.
- Provide mitigation strategies for small businesses when access is blocked beyond timelines.
- Enforce construction timelines and use contractor incentives/penalties tied to minimizing disruption.



Engagement & Communication

- Move from “inform only” to true consultation: engage stakeholders early in design.
- Share information across agencies, utilities, and other interested groups to avoid silos.
- Develop a comprehensive communications plan including stakeholders impacted on and off corridor, regular stakeholder briefings or updates, coordination with industry and stakeholder networks to help distribute information, etc.

Mobility & Community Safety

- Expand participation in Zero Fatalities and Safe Routes to School programs.
- Ensure projects balance continued vehicle access with multimodal infrastructure, including appropriate signage and wayfinding.
- Evaluate before/after crash data to validate crash reduction outcomes.

Economic & Business

- Partner with major employers/institutions on commute planning during construction.
- Talk to businesses, delivery vendors, and emergency responders to understand and mitigate potential operational impacts.
- Provide data transparency on traffic counts so businesses understand trade-offs.
- Maintain signage and line of sight visibility for retail tenants to retain local customers and national chains.
- Coordinate business-access planning early in design to avoid surprises.

SUMMARY

UDOT measured impacts to mobility, traffic flow, pedestrian and nonmotorized vehicle flow, the economy, public health, quality of life, air quality, and maintenance and operations. More than 88 billion traffic records were analyzed along with conducting hundreds of hours of surveys, interviews and coordination with stakeholders, community members, commuters, business owners, emergency services providers and transportation system operators.

The analysis shows the following:

- Traffic trends have varied over the 10-year timeframe from 2015 to 2025, showing impacts from population growth, the effects of COVID-19, development patterns, and the changes to the transportation system. Notably, the impacts of COVID-19 lowered transportation delay and eased negative impact to the system. This period of transportation system improvement provided an exaggerated sense of negative change to the transportation system performance as traffic returned to pre-Covid conditions. Comparative analyses of transportation metrics from the period of 2015 to 2019 to the period from 2022 to 2025 shows a slight change in system performance across the entire study area normally associated with growth and system variability.
- Economic, public health, quality of life, and air quality information present a similar picture. Transportation system changes related to the HRS projects show negligible impacts

LANE MILES REDUCTION

690 total lane miles in the project study area

Reduction of 23 lane miles between 2015–2025 resulting in a 3 percent reduction in total lane miles

Planned reduction of 15 lane miles between 2025–2035 resulting in a 2 percent planned reduction in total lane miles



when looked at as a whole. For example on 200 South there was a loss of 114 parking spaces, while 1700 South added 93 parking spaces so while the overall study area impacts were more balanced on parking spaces lost, individual corridors experienced more site specific impacts. Emergency response impacts were found during the interview process where Gold Cross Ambulance had to increase the number of on-call ambulances from 5 to 8 in order to meet contracted response times due to travel time impacts resulting from HRS projects and traffic growth. Active transportation saw improvements in areas with new facilities such as 900 South and 300 West but the overall study area impact did not see an impact that moved it beyond negligible cumulative impacts. Vehicular and Pedestrian safety saw increases and decreases in overall crash numbers depending on the area but overall the change was negligible. A qualitative assessment of construction-related impacts showed that businesses on past HRS corridors were adversely affected. The quantitative analysis, which looked at changes in truck travel times, showed that the implementation of all HRS projects would have a negligible effect on jobs and overall economic output (for example, about 0.01 percent of jobs would be lost). Transit ridership increased on 900 South but the overall study area did not experience similar growth. Maintenance and operations related to the transportation system have seen increased challenges, specifically in regards to snow removal, lane striping, and sweeping operations. As new design details are integrated in the field, coordination with maintenance personnel regarding designs and modifications to standard practices will need to be resolved.

- Public and stakeholder input shows a more complex and varied picture. Sentiment surrounding construction impacts was consistently negative and provides indications of potential improvements. While most groups and individuals acknowledge hearing about changes to the transportation system, consensus is that the projects provide information but don't listen to the input these groups provide.

The transportation system within the study area has the capacity to absorb changes in travel patterns brought on by the currently completed HRS projects, however future needed capacity is being removed without knowing what will be required to maintain current levels of service. Further coordination and study will be needed to identify the tipping point at which similar changes will result in more measurable roadway capacity impacts.

PARKING REDUCTION

2,105 parking stalls before HRS projects

1,988 parking stalls after HRS projects

A 6 percent reduction in parking stalls in the project study area

