



# Planning for Peak: Data-Driven Mobility Strategies for FIFA World Cup 2026 in Houston

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# Agenda



1. Project Overview
2. FIFA World Cup 2026 Houston Schedule
3. Stakeholders Engagement
4. Scenario Modeling Results
5. Project Impact

# Project Team



**Jochen Floesser**

Director of Data Analytics and Research



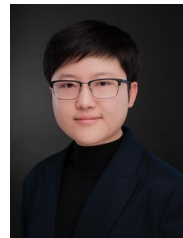
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Project Manager



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Assistant director of Data Analytics and Research



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Senior Data Analyst



**Heng Wang, PE, PTP**

Modeling Manager of Data Analytics and Research



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Project Manager



**Shashank Shekhar, PE**

Deputy Project Manager



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Lead Modeler



**Fengjiao Zou, Ph.D, PE**

Data Analyst

# H-GAC Scenario Planning Study Overview



- ❑ Support the region in successfully hosting FIFA World Cup 2026.
- ❑ Develop data-driven traffic scenarios and predictive models for event and background traffic.
- ❑ Provide insights and solutions to support agency planning and stakeholder coordination (with TranStar).
- ❑ Deliver post-event summary and create a tool/data management plan to support future large-scale event planning.



**Data Collection**

**Define Scenarios**

**Model Scenarios**

**Share Insights**

# FIFA World Cup 2026 Houston Schedule



Date	Match Type	Teams	Kickoff Time
Sunday June 14, 2026	Group Stage	Germany vs Curacao	12:00 PM CT
Wednesday June 17, 2026	Group Stage	Portugal vs DR Congo	12:00 PM CT
Saturday June 20, 2026	Group Stage	Netherlands vs Sweden	12:00 PM CT
Tuesday June 23, 2026	Group Stage	Portugal vs Uzbekistan	12:00 PM CT
Friday June 26, 2026	Group Stage	Cape Verde vs Saudi Arabia	7:00 PM CT
Monday June 29, 2026	Round of 32	TBD	12:00 PM CT
Saturday July 4, 2026	Round of 16	TBD	12:00 PM CT



# Stakeholder Engagement



## **One-on-One Stakeholder Meetings (Aug. 2025)**

- Collected model input and gathered concerns/data needs from stakeholders

## **1<sup>st</sup> Stakeholders Workshop (Oct. 2025)**

- Collected scenarios/drivers from group discussions

## **2<sup>nd</sup> Stakeholders Workshop (Dec. 2025)**

- Shared preliminary model results

## **One-on-One Stakeholder Meetings (Feb. 2026)**

- Shared model results, insights and strategies

## **Final Stakeholder Workshops (Mar. 2026)**

- Operational plans from key stakeholders

# Stakeholders



- ❖ Houston Host Committee
- ❖ Houston Airport System (HAS)
- ❖ Houston METRO
- ❖ Houston TranStar
- ❖ NRG Stadium
- ❖ FIFA
- ❖ TxDOT Houston District
- ❖ City of Houston
- ❖ Houston Police Department
- ❖ Harris County Sheriff's Office
- ❖ Harris County
- ❖ Fort Bend County
- ❖ Brazoria County
- ❖ Montgomery County
- ❖ The Woodlands Township
- ❖ City of Conroe
- ❖ Harris County Toll Road Authority
- ❖ City of Sugar Land
- ❖ Greater Houston Partnership
- ❖ Downtown Houston Management District
- ❖ East End District
- ❖ Uptown Houston District
- ❖ Port of Houston
- ❖ Pearland Emergency Management
- ❖ City of Lake Jackson
- ❖ Texas Medical Center
- ❖ Texas Trucking Association
- ❖ Private Sector (Uber and Lyft)
- ❖ H-GAC

# Stakeholder Workshops



# One-on-One Stakeholder Meetings





# Modeling Approach for Houston FIFA World Cup Transportation Scenario Planning

A four-part framework for evaluating game-day travel demand, simulating regional network performance, and translating model outputs into actionable operations strategy.

# Four-Layer Modeling Framework

1

## Layer Event Demand on Daily Demand

Evaluate World Cup travel demand on top of baseline daily traffic to reflect true combined network conditions — capturing both routine commuter loads and event-driven surges simultaneously.

2

## Weekend & Special Event Modeling

Develop dedicated weekend and game-day models to accurately capture non-weekday travel patterns, including shifted departure times, transit mode shifts, and venue-concentrated trip generation.

3

## Large-Scale Operational Evaluation

Deploy mesoscopic simulation to assess system-wide performance and test operational strategies across the network.

4

## Link Planning to Operations

Translate modeling outputs into actionable insights that support field coordination, incident response, and adaptive traffic management during event windows.

# From Travel Demand Model to Mesoscopic Model



## Regional Travel Demand Model

Evaluates travel demand, transit usage, and travel demand management strategies.

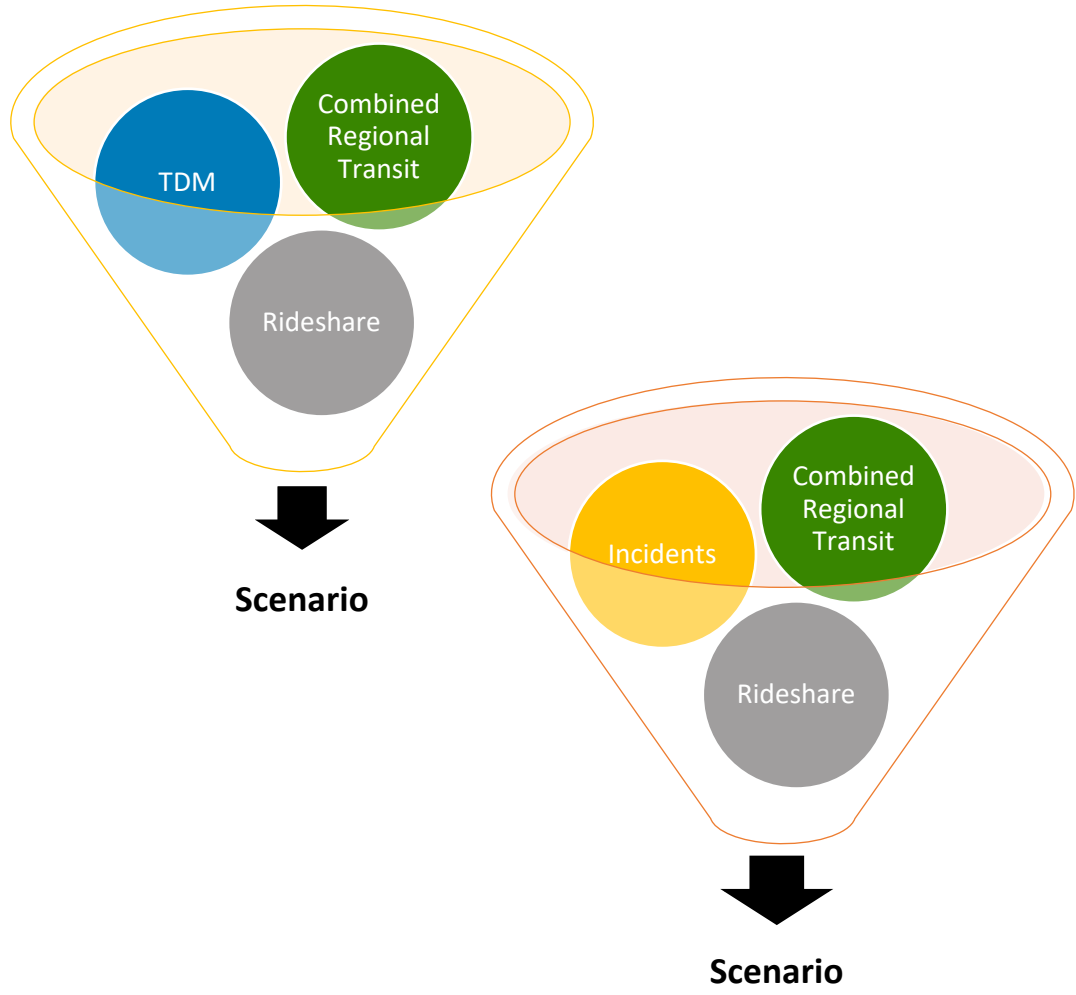
## Mesoscopic Model

Focuses on the supply side, assessing operational performance and network flow.



## Scenario Modeling

# Model Scenarios



**Scenario: Weekend Game (Baseline)**

**Scenario: Weekday Game (Baseline)**

**Scenario: Weekday Game + Major Crash on I-610**

**Scenario: Weekday Game + Major Crash on SH 288**

**Scenario: Weekday Game + Major Crash on I-610 Sidney Sherman Bridge**

**Scenario: All Aboard Transit (A Concept)**

**Scenario: Travel Demand Management / Telecommute**

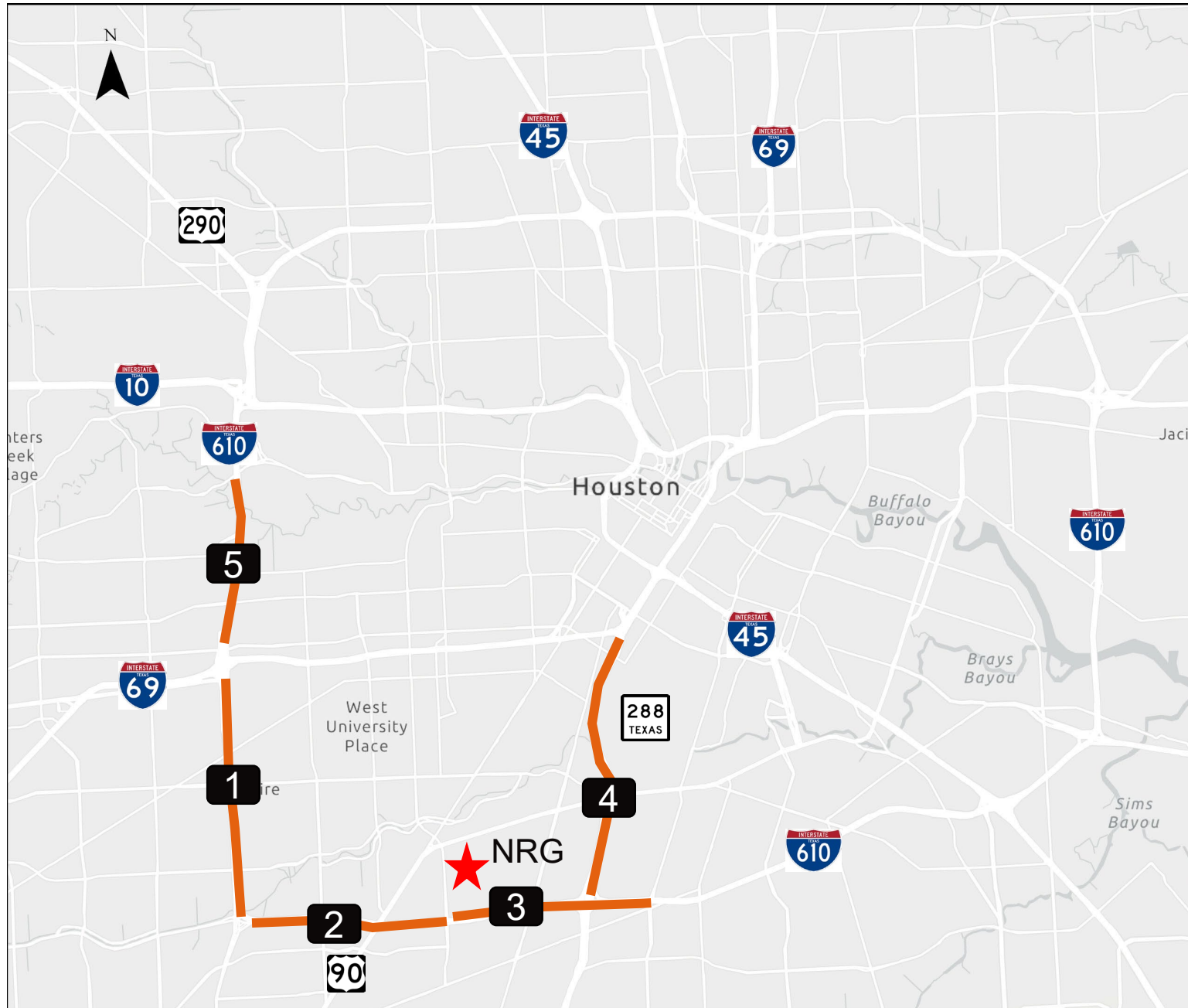
# Travel Demand Management

- **Modeled 20% reduction** in home-based work (HBW) trips inside BW 8 on FIFA game days
- Model scenario included background traffic and FIFA stadium plus Fan Festival trips
- Average **travel time improvements of 9% in AM** period (6 AM – 9 AM) and **6% in PM** period (3 PM – 7 PM)
- For peak hour and for severely congested routes the **travel time savings can be as high as 25%**



*\* Images generated using AI. For illustration only.*

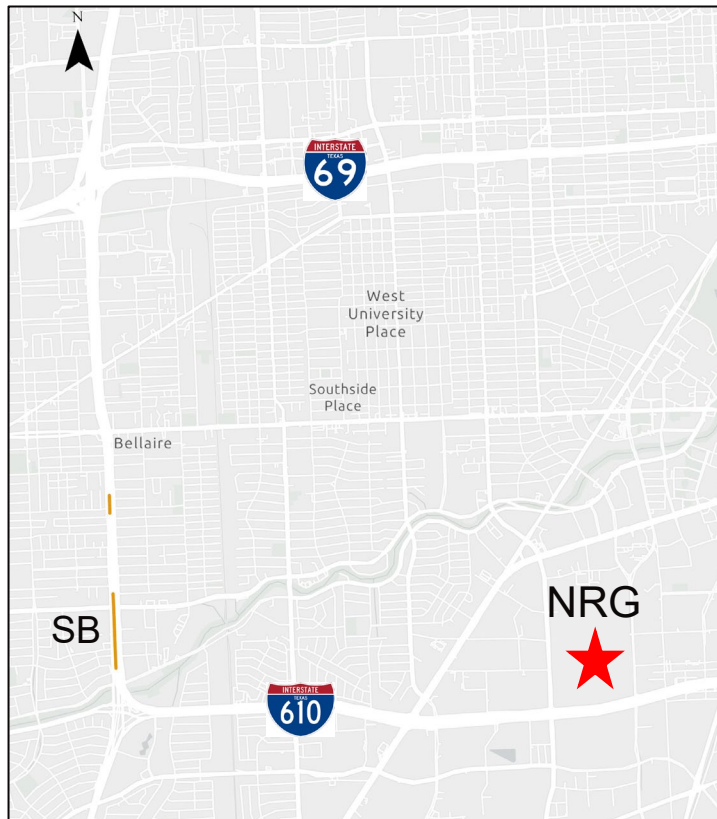
# Key Freeways for Game Day



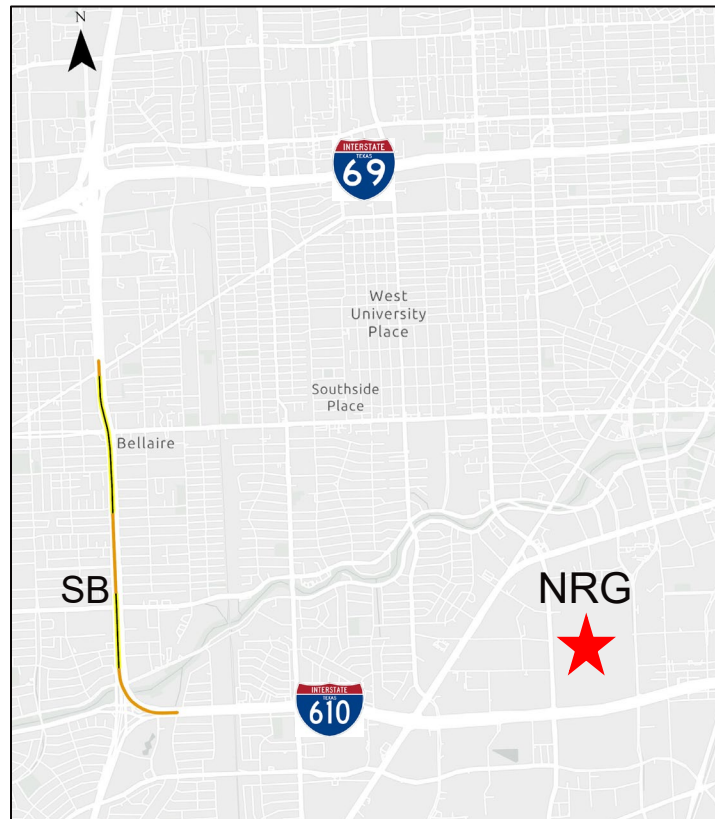
## Key Freeways:

1. I-610 West Loop (I-69 to S Post Oak Rd)
2. I-610 South Loop (S Post Oak Rd to Kirby Dr)
3. I-610 South Loop (Kirby Dr to Scott St)
4. SH 288 (I-610 South Loop to I-69)
5. I-610 West Loop (I-69 to Woodway Dr)

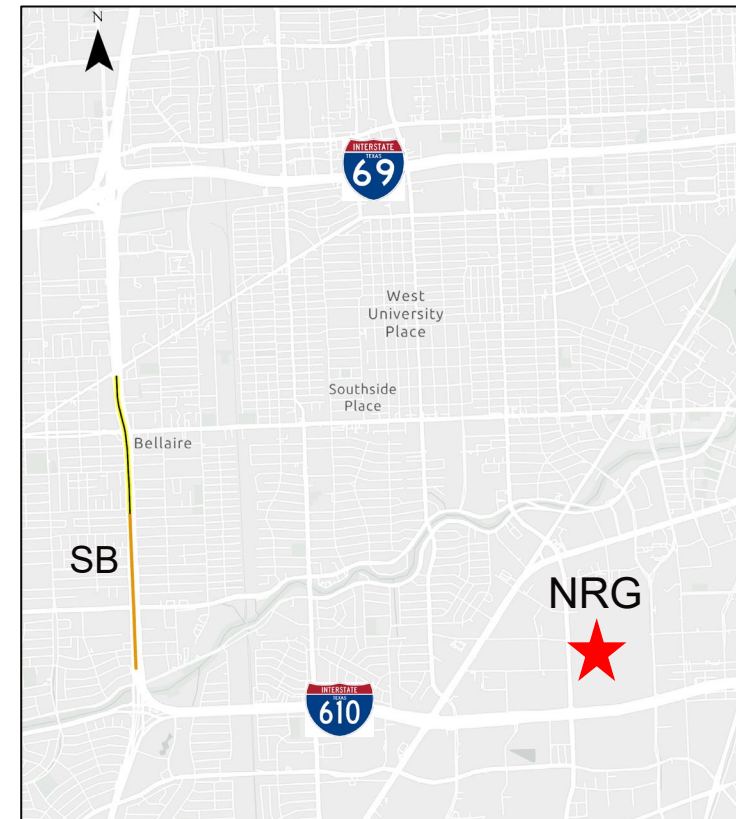
# 1. I-610 West Loop (I-69 to S Post Oak Rd) - AM



9:00 -10:00 AM






10:00 -11:00 AM



11:00 AM -12:00 PM

## Legend

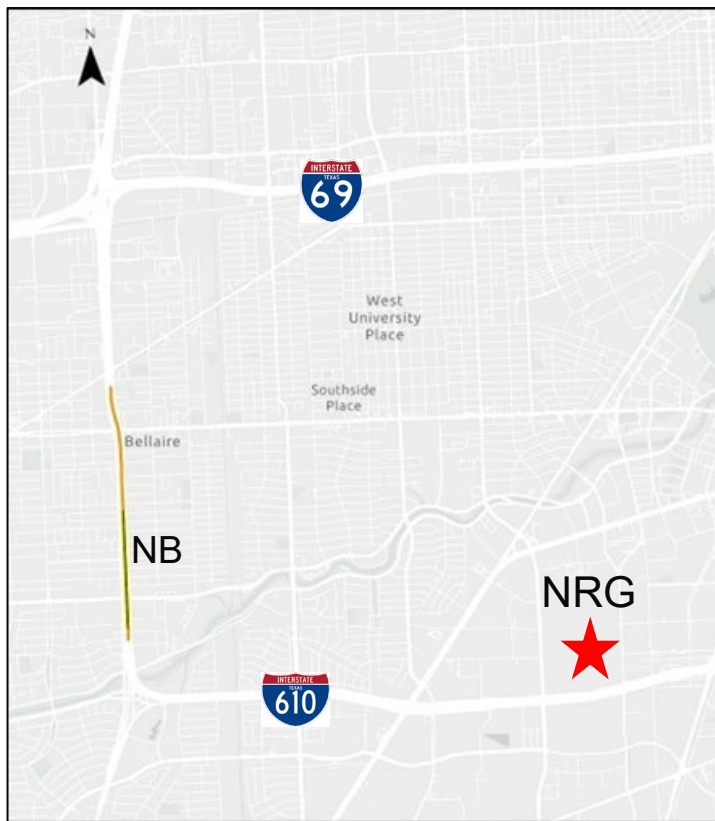
-  Bottlenecks on both game day and typical weekday
-  Additional bottlenecks on game day only
-  Additional slowdowns on game day only

## \*Note

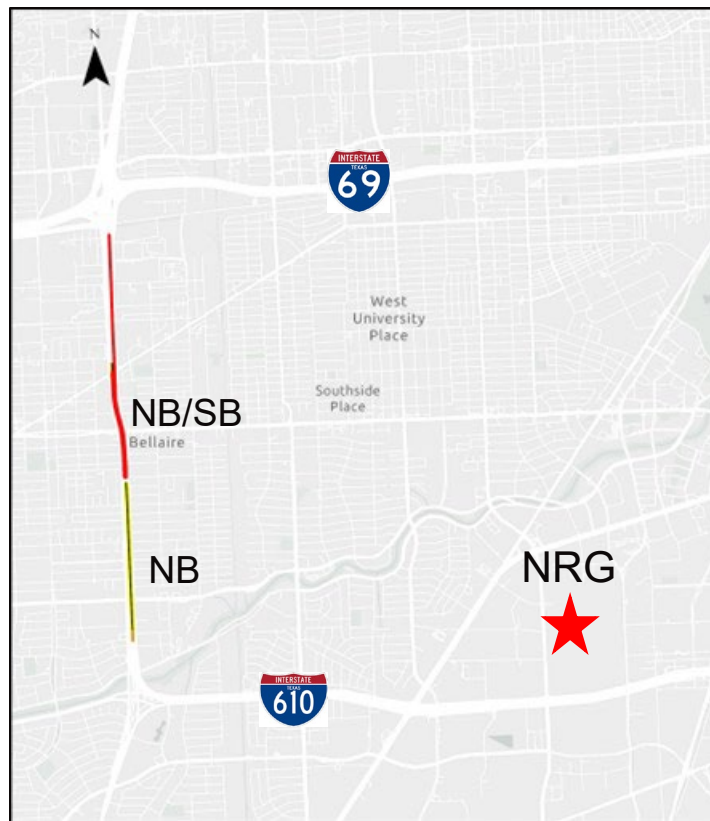
Bottleneck: speed  $\leq$  25 mph

Slowdown: speed  $>$  25 mph & speed reduction  $>$ 20%

# 1. I-610 West Loop (I-69 to S Post Oak Rd) - PM



2:00 - 3:00 PM






3:00 - 4:00 PM



4:00 - 5:00 PM

**Legend**

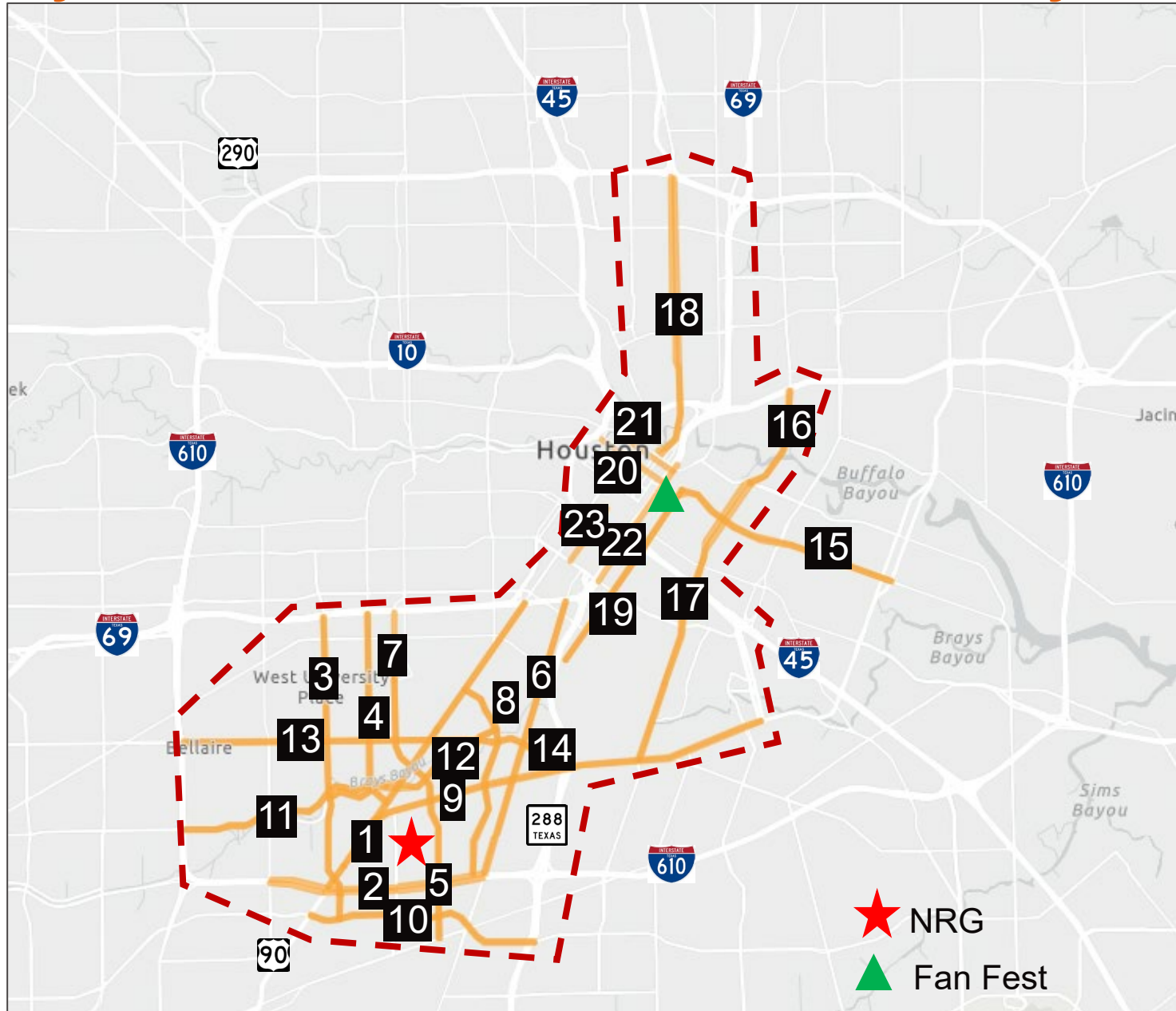
-  Bottlenecks on both game day and typical weekday
-  Additional bottlenecks on game day only
-  Additional slowdowns on game day only

**\*Note**

Bottleneck: speed  $\leq$  25 mph

Slowdown: speed  $>$  25 mph & speed reduction  $>$  20%

# Key Focus Area and Arterials on Game Day



## Top Priority Corridors:

1. Main St
2. I-610 South Loop Frontage Rd
3. Buffalo Speedway
4. Kirby Dr
5. Fannin St
6. Alameda Road
7. Greenbriar Dr
8. Cambridge St
9. Old Spanish Trl
10. W Bellfort Ave
11. N Braeswood Blvd
12. S Braeswood Blvd
13. Bellaire Blvd/ W Holcombe Blvd
14. Holcombe Blvd
15. Harrisburg Blvd
16. Hirsch Rd
17. Scott St/York St
18. Elysian St
19. Emancipation Ave
20. Texas Ave
21. Congress St
22. Chartres St
23. Caroline St

# Incident Heatmap

Incidents Heatmap, Jun 2025

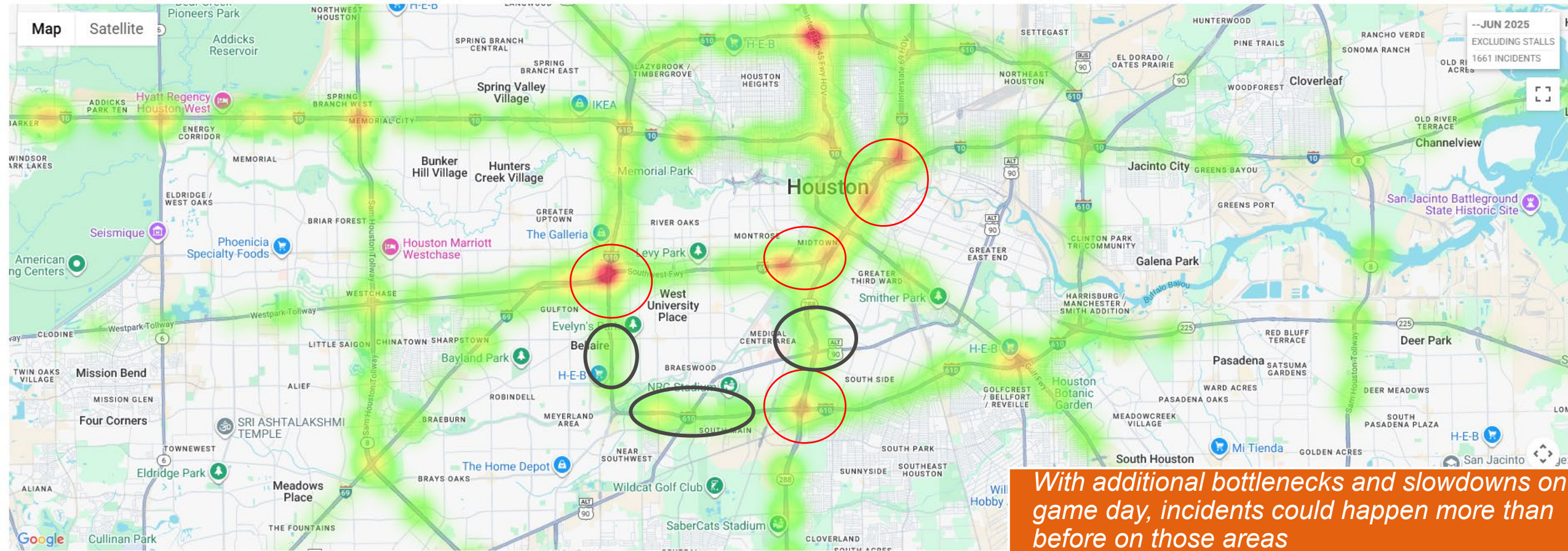


- HOME
- TRAFFIC CONDITIONS
- EMERGENCY INFO
- TRANSIT INFO
- ROAD SAFETY
- ABOUT

- Historical Incident Hotspot
- Projected Bottleneck/Slowdown

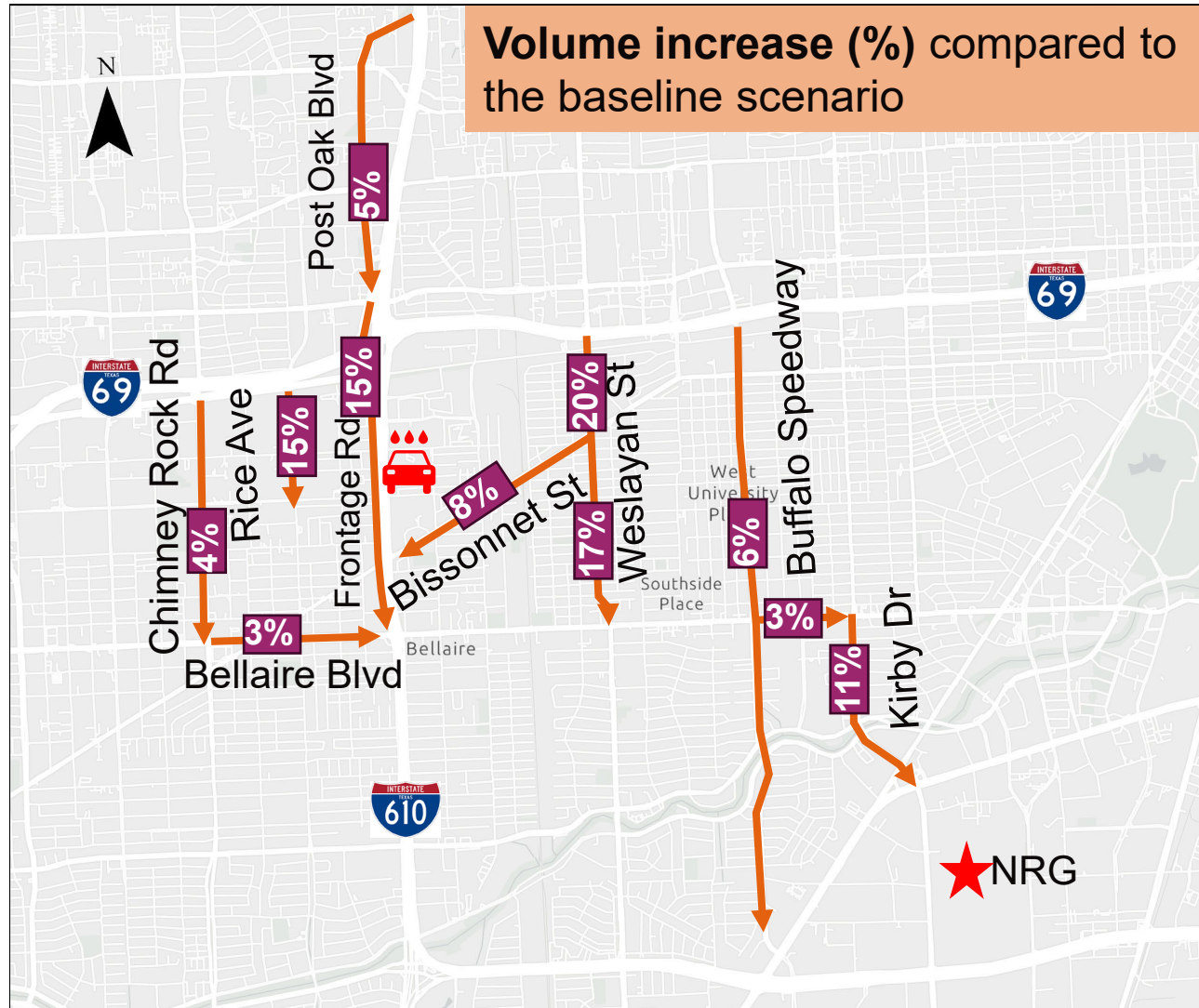
INCIDENT HEAT MAP

--Jun 2025 | All Incidents | Heavy Trucks Only | Accidents Only (Exclude Stalls) | Fatalities | High Water | 2+ Hour Clearance Time



*With additional bottlenecks and slowdowns on game day, incidents could happen more than before on those areas*

# Increased Traffic Volume On Diverted Routes



## Incident scenario 1:

- I-610 SB, south of I-69
- Partial lane closures: 60% capacity reduction
- Closure duration: 10:00 AM – 12:00 PM

# Project Impact - Three Key Areas



# Project Impact - TDM - H-GAC Commute Solutions





**Commute Solutions**






















## YOUR COMMUTE, YOUR GAME PLAN!

Scout high-traffic days,  
anticipate congestion,  
& pick the winning  
route using flexible  
commute alternatives.



[CommuteGamePlan.com](http://CommuteGamePlan.com)

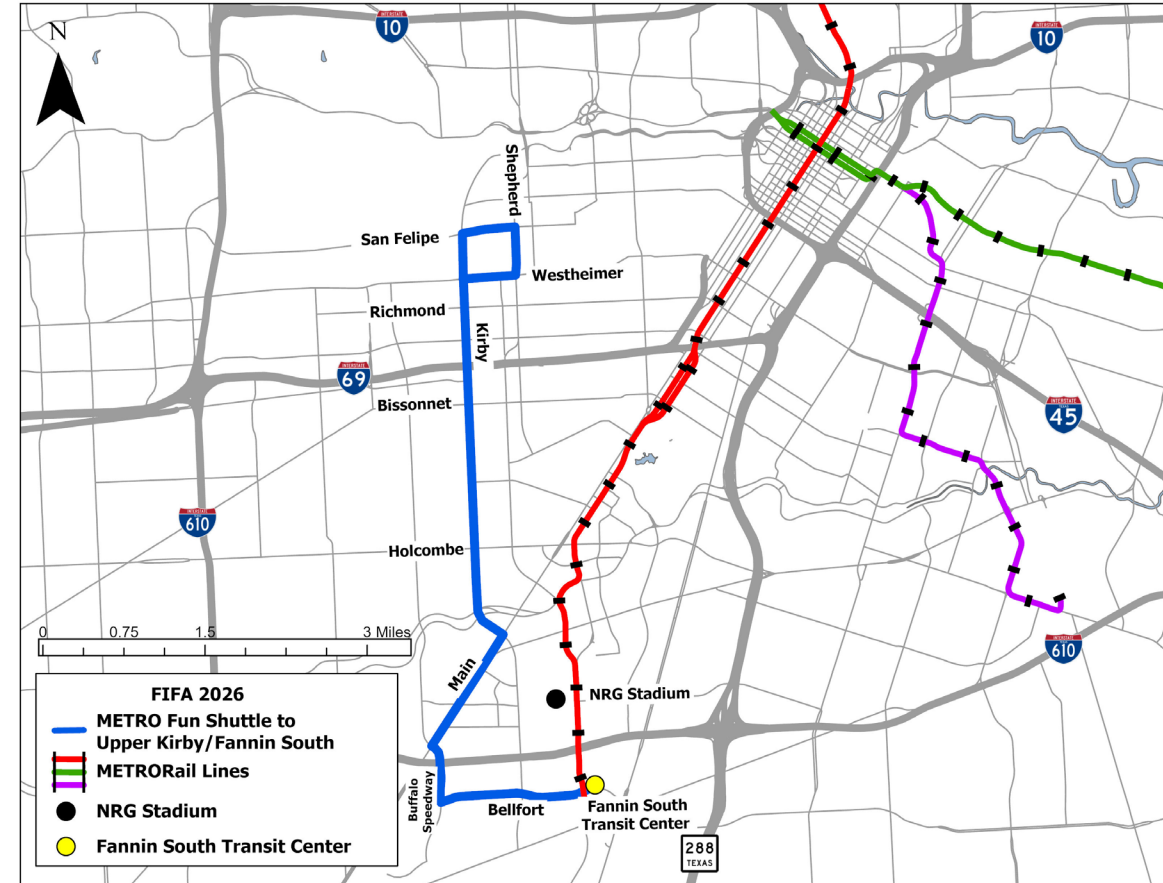
## CommuteGamePlan.com

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>JUNE 07</b>  Astros Home Game TBD	<b>JUNE 08</b>	<b>JUNE 09</b>	<b>JUNE 10</b>	<b>JUNE 11</b>  Watch Party Mexico vs. South Africa 2 P.M. CT	<b>JUNE 12</b>  Watch Party USA vs Paraguay 8 P.M. CT	<b>JUNE 13</b>
				Fan Fest	Fan Fest	Fan Fest
<b>JUNE 14</b>  Germany vs Curacao 12:00 P.M. CT	<b>JUNE 15</b>  Home Game	<b>JUNE 16</b>  Home Game	<b>JUNE 17</b>  Portugal vs FIFA Playoff 1 12 P.M. CT  Home Game	<b>JUNE 18</b>  Watch Party Mexico vs South Korea 8 P.M. CT  GRB Houston Energy Convention	<b>JUNE 19</b>  Watch Party USA vs Austrailia 2 P.M. CT  Home Game	<b>JUNE 20</b>  Netherlands vs UEFA Playoff B 12 P.M. CT  Home Game
Fan Fest	Fan Fest	Fan Fest	Fan Fest	Fan Fest	Fan Fest	Fan Fest
<b>JUNE 21</b>  Home Game	<b>JUNE 22</b>	<b>JUNE 23</b>  Portugal vs Uzbekistan 12 P.M. CT  Concert 8:00 P.M. CT	<b>JUNE 24</b>  Watch Party Mexico vs UEFA Playoff D 8 P.M. CT	<b>JUNE 25</b>  Watch Party USA vs UEFA Playoff C 9 P.M. CT	<b>JUNE 26</b>  Cabo Verde vs Saudi Arabia 7 P.M. CT	<b>JUNE 27</b>
Fan Fest	Fan Fest	Fan Fest	Fan Fest	Fan Fest	Fan Fest	Fan Fest
<b>JUNE 28</b>	<b>JUNE 29</b>  Group C Winner vs. Group F Second Place 12 P.M. CT  Home Game	<b>JUNE 30</b>  Home Game	<b>JULY 01</b>  Home Game	<b>JULY 02</b>	<b>JULY 03</b>  Home Game	<b>JULY 04</b>  Round of 16 TBD vs TBD 12 P.M. CT  Home Game  July 4 Celebration



# Project Impact - Transit - METRO Service

- **Airport Service:** Route 500 Downtown Direct
- **Enhanced Rail Service:** Red Line, Green / Purple Lines
- **Enhanced Park & Ride Service:** Provide fast connection from suburbs to Rail line stations in Downtown
- **Enhanced Local Route Service:** Increase frequency and/or span of service for select local routes
- **Stand-by Buses:** Stage buses at key locations in Downtown and near NRG Park before and after the games
- **Fun Shuttle:** Rice Village, Heights, Kirby (TBD)



# Project Impact - Operations

## Arterial Management



- ✓ Implementing signal timing and operation improvements on the corridors identified from **H-GAC FIFA World Cup 2026 Scenario Planning Study**
  - ❖ **Almeda Road (Alabama Rd. to Holcombe Blvd.)** - install detection video cameras and optimize the corridor.
  - ❖ **Bellaire Blvd / Holcombe Blvd (Buffalo Speedway to SH-288)** - install detection cameras and optimize the corridor.
  - ❖ **West Bellfort Ave.** - optimize the corridor, 10 intersections.
  - ❖ **N & S Braeswood Blvd.** - optimize the corridor, 18 intersections.
  - ❖ City is **evaluating Synchro Green adaptive system** for recommended corridors.



# Project Impact - Operations

## Freeway Management



- ❖ Targeted Staging
- ❖ Incident Management
- ❖ ICM Lite - Frontage & Arterials
- ❖ Focused Bottlenecks and Slowdowns







## Contact us



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