

East End

MOBILITY STUDY

Presentation to the City of Houston
Council Transportation, Technology
and Infrastructure Committee

October 2012

Report
Prepared for:



East End Mobility Study Overview

- Comprehensive, multi-modal mobility study looking at long-term land use, economic development, and transportation scenarios for the study area.
- Plan was developed with significant input from the Steering Committee and community stakeholders.

Steering Committee

Greater East End Management District - Project Sponsor

H-GAC - Project Sponsor

City of Houston Public Works Department

City of Houston Planning and Development Department

Gulf Coast Rail District

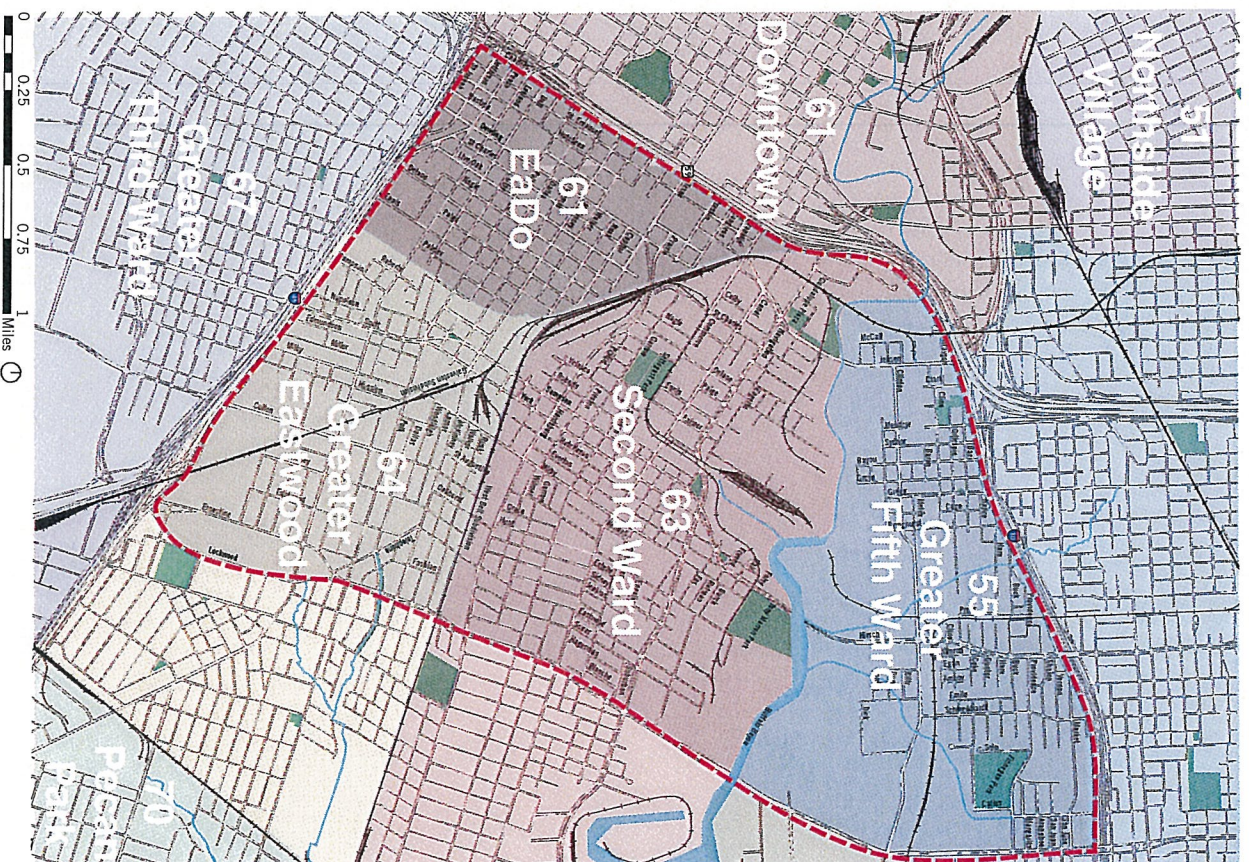
METRO

TxDOT

- Study defined major transportation improvement opportunities to support the projected growth in the study area through the year 2035.
- Significant investments in implementation already underway with additional opportunities needing continued support

Study Area

- Includes sections of four historic Super Neighborhoods
 - Greater Fifth Ward
 - Second Ward / Greater East End
 - Downtown (EaDo)
 - Greater Eastwood
- Bounded by:
 - North – IH-10
 - West – US 59
 - South – IH-45
 - East – Lockwood Drive



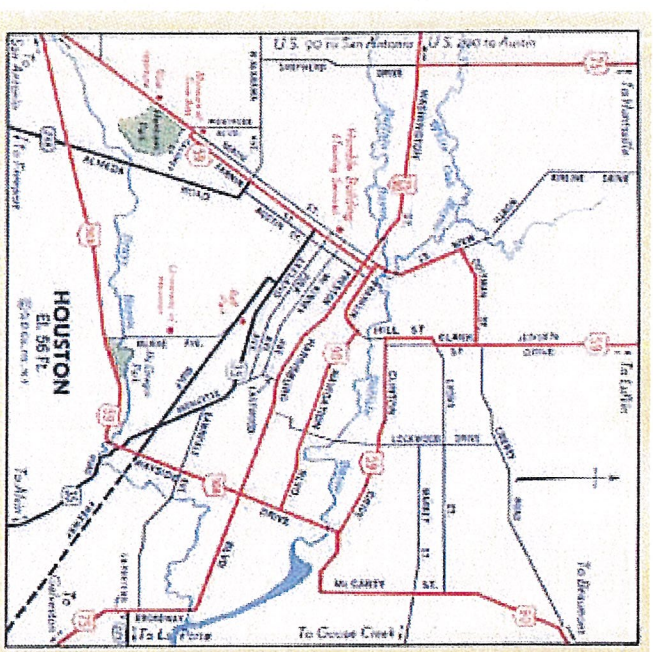
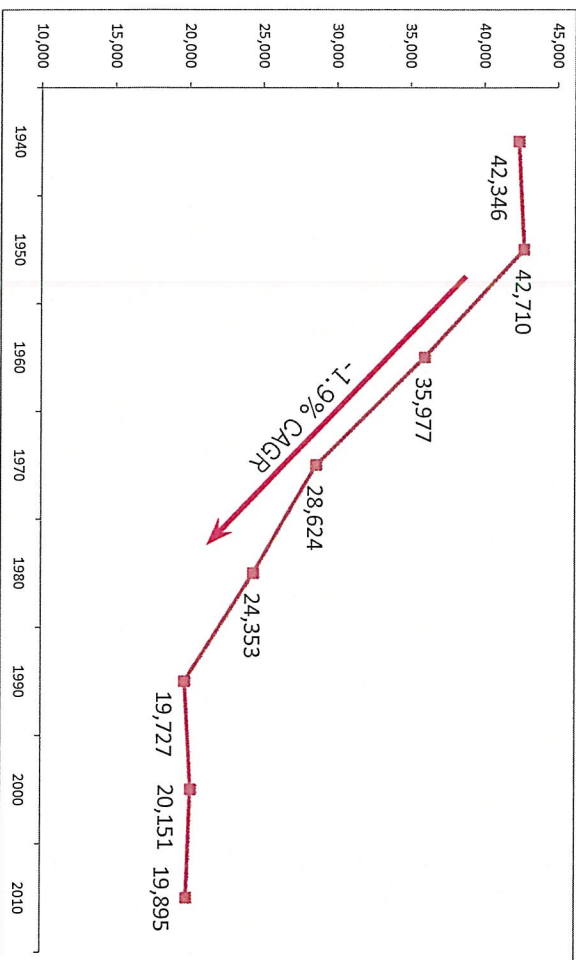
Goals for the East End Mobility Study

- 1. Address short and long term capacity constraints and opportunities** by assessing the traffic impacts of growth and development and developing recommendations
- 2. Address barriers to mobility and increase connectivity** between neighborhoods and major activity centers and destinations
- 3. Enhance multimodal trip alternatives** (e.g., walking, biking and transit) by providing improved transportation choices
- 4. Prioritize transportation infrastructure investments that support the development objectives** identified through previous neighborhood and regional plans
- 5. Reduce safety concerns** within study area for all travel modes

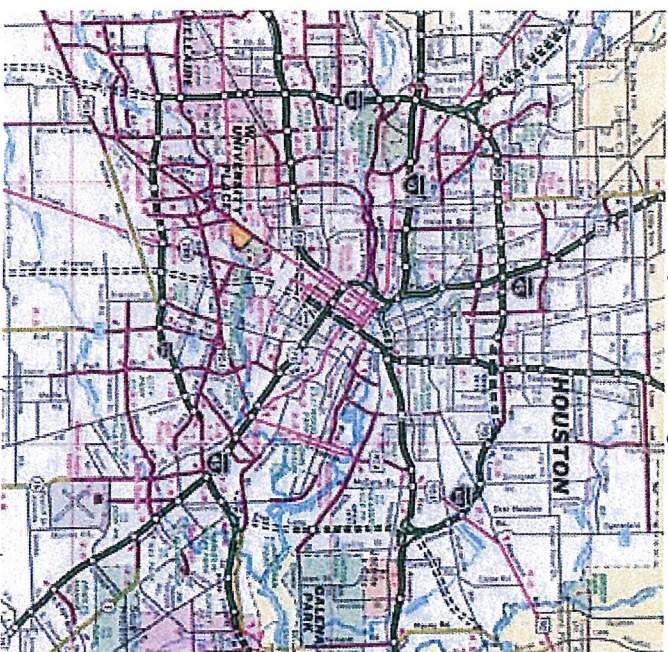
History

- Experienced significant population decline since peak in 1950's; stabilized in 1990s
- 1950 - 1990 Annual growth Rates
 - Study Area: **-1.9%**
 - Inside Loop 610: **-0.4%**
 - City of Houston: **2.5%**
- Rail and Buffalo Bayou supported industrial activity though industrial uses are declining
- Population decline coincided with development of the interstate highway system and Ship Channel growth

Study Area Population - Census



Major Roadway Network (1950)



Major Roadway Network (1970)

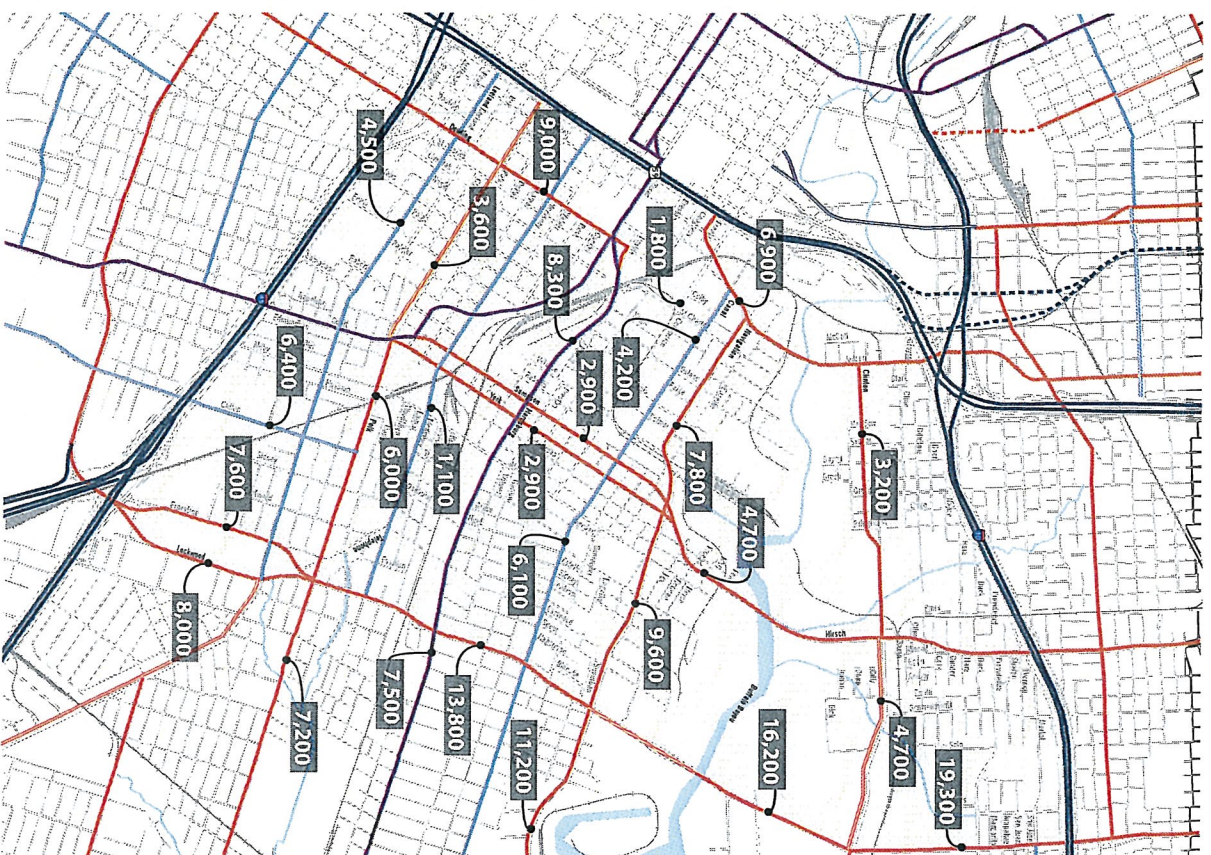
Existing Roadway Networks

- Overall traffic volumes in the study area are relatively low with only Lockwood Drive carrying over 10,000 ADT.

- Traffic volumes on east-west streets decline closer to Downtown as motorists use north-south corridors to access freeway system.

Designated roadways on the MTFP include:

- Transit Corridor Streets**
 - Harrisburg Boulevard
 - Scott Street
 - Texas Avenue
- Principal Thoroughfare**
 - Lockwood Drive
 - Navigation Boulevard
- Major Thoroughfares**
 - Clinton Drive
 - Dowling Street
 - Jensen Drive
 - Polk Street
 - Sampson Street
 - York Street
- Major Collectors**
 - Canal Street
 - Cullen Street
 - Leeland Avenue
 - McKinney Street

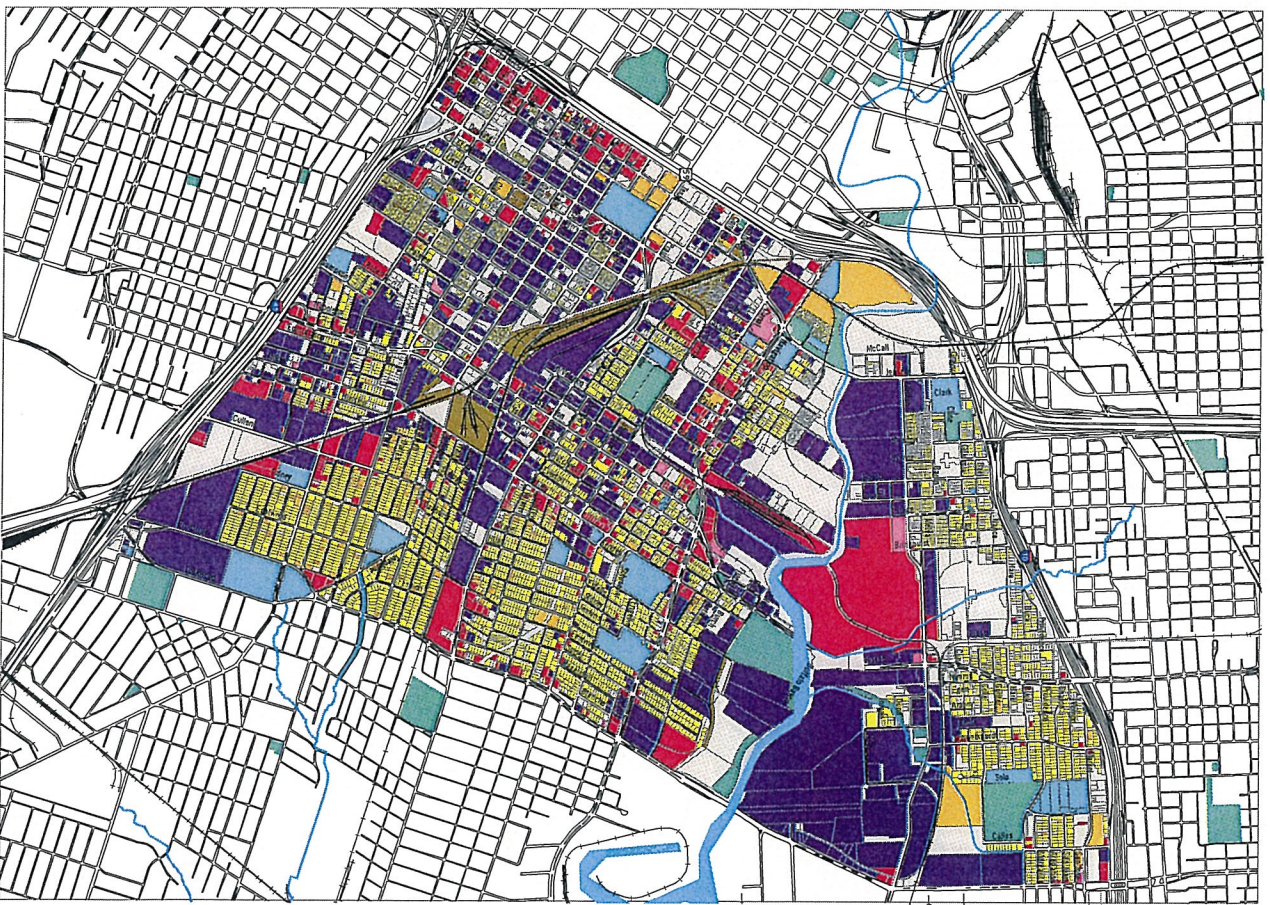
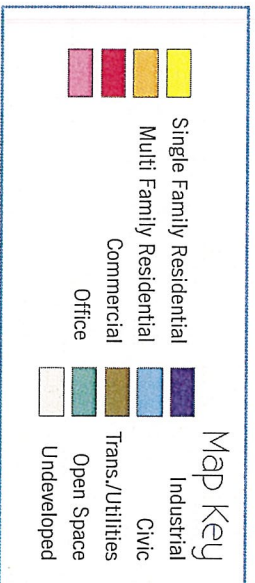


City of Houston MTFP and Traffic Volumes

Land Use

Land Use	2011 HCAD	
	SF (MM)	%
Single-Family Residential	20.3	18.8%
Multi-Family Residential	3.4	3.1%
Commercial	11.6	10.7%
Office	0.7	0.6%
Industrial	34.6	32.0%
Civic (Gov't./Medical/Education)	6.4	5.9%
Transportation/Utilities	2.2	2.1%
Parks/Open Space	2.1	2.0%
Undeveloped	26.8	24.8%
Total	108.1	100%

- Industrial (32%) and Undeveloped (24.8%) make up over 1/2 of the study area.
- Significant potential redevelopment opportunities.
- Single-family residential neighborhoods in Eastwood, Second Ward and Fifth Ward.
- Limited multi-family, open space and office



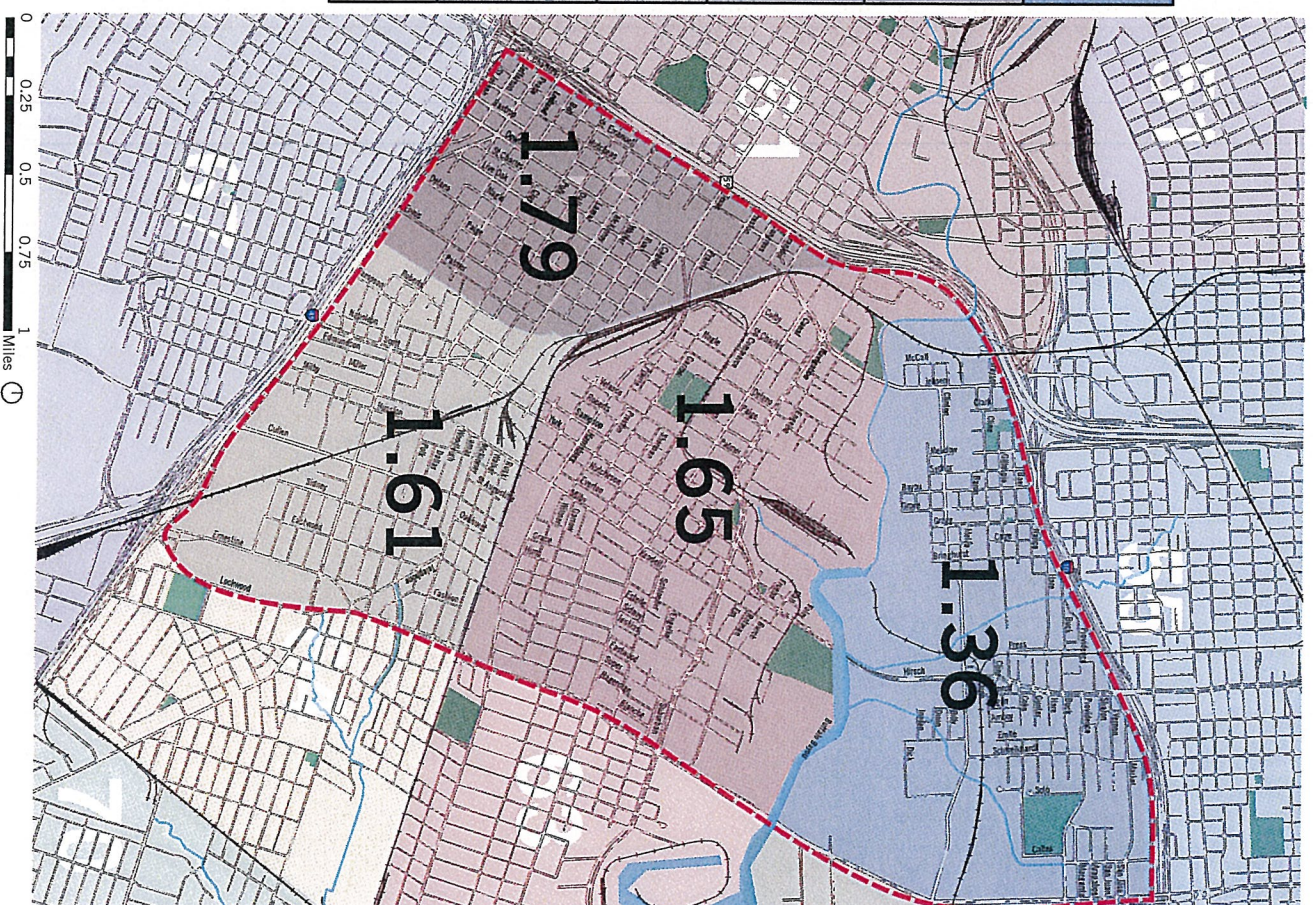
Existing Land Use Map - 2011

Study Area Connectivity

East End Study Area Connectivity Metrics

Region	Intersection Density	Link-Node Ratio	Lane Mile Density
SN 55 - Greater Fifth Ward	109.3	1.36	51.6
SN 61 - Downtown/ Eado	218.9	1.79	99.6
SN 65 - Second Ward	161.2	1.65	57.2
SN 64 - Greater Eastwood	161.0	1.61	72.0
Total Study Area	155.2	1.61	65.2

While individual neighborhoods show a high degree of connectivity, significant barriers from the railroads, freeways and Buffalo Bayou make movement between neighborhoods challenging

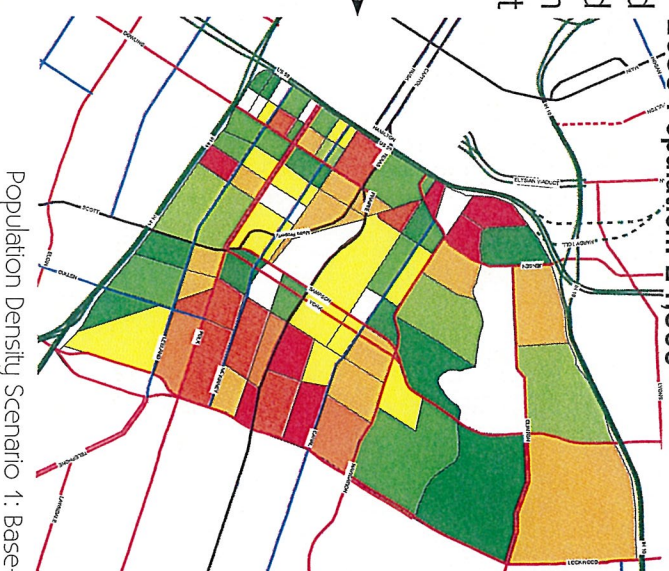


Link-Node Ratio by Super Neighborhood

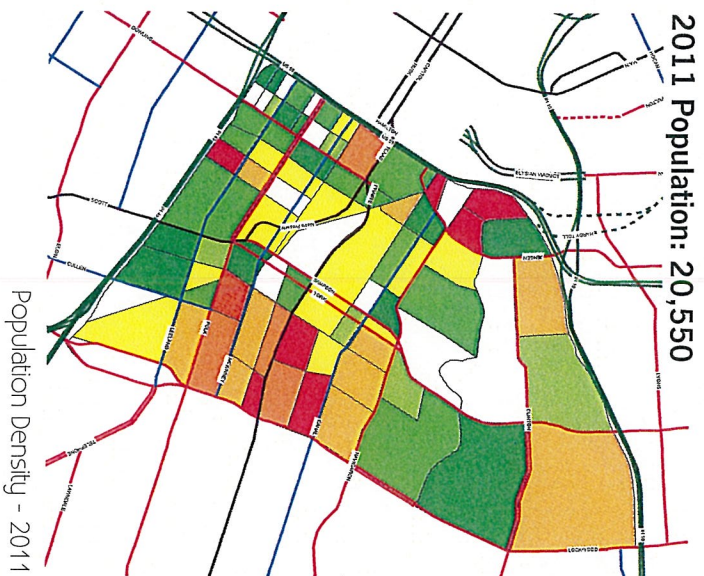
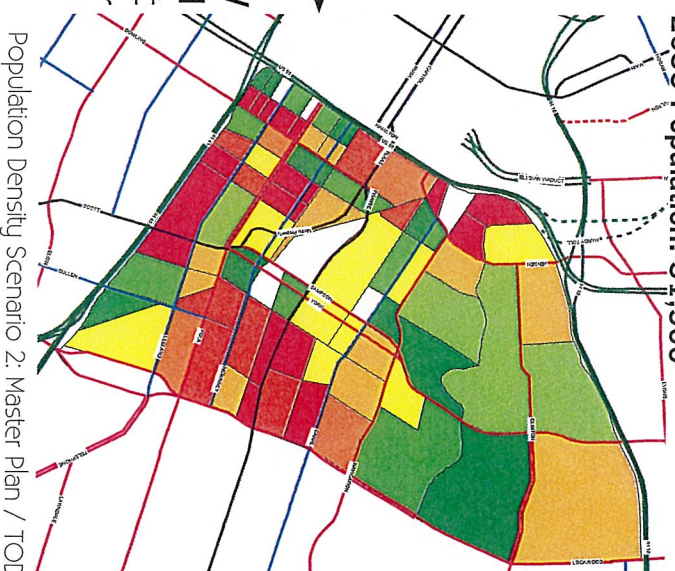
Two Development Scenarios for the East End

Scenario 1: Base+ included trend information and known development from building permits and replat information.

2035 Population: 24,500



2035 Population: 31,500



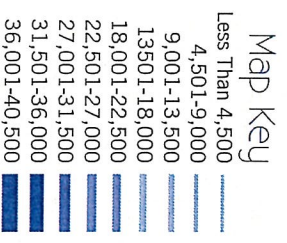
Map Key
Person per Acre

1-2	11-15
3-5	15-17
5-8	17-21
8-11	21+

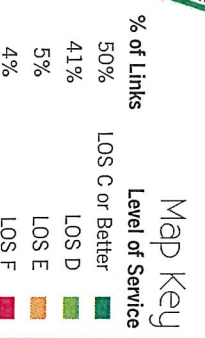
Roadway Volume and Capacity (Scenario 2: Master Plan / TOD - 2035)

2035 Scenario 2 represents the peak estimated roadway volumes projected in the study area for the design year

Travel Demand Model -
 2035 Scenario 2: Master Plan / TOD
 Roadway Volumes

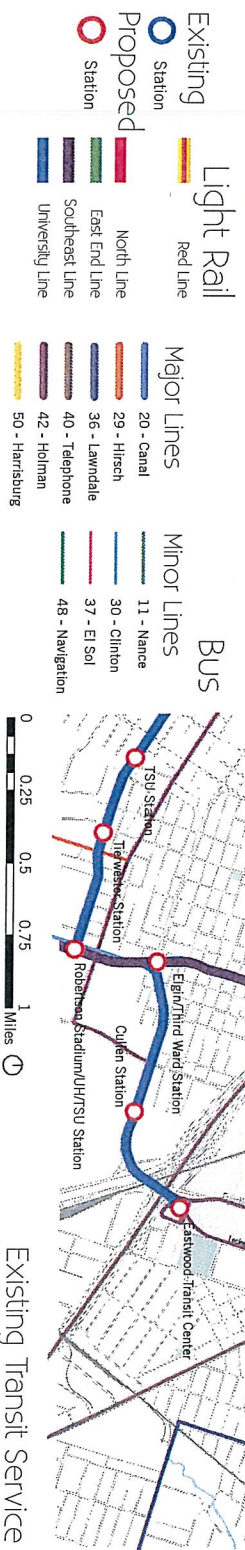


Travel Demand Model -
 2035 Scenario 2: Master Plan / TOD
 Level of Service Estimates



Overall Transit Coverage will Improve with LRT Opening

- 10 METRO bus lines provide service to the study area
- Two light rail lines under construction (East End and Southeast) with a third (University Line) that will connect to study area when built
- East End Alternatives Analysis will look at Urban Circulator for Greater East End, north of the East End Line



Summary of Improvement Opportunities

ROADWAY & INTERSECTION

- R1:** Improve key intersection operations (e.g., Navigation at Sampson / York, Jensen/Runnels, and Canal; Dowling at IH-45 / Pease)
- R2:** Improve connectivity for all modes between the Second Ward / Fifth Ward neighborhoods and Eado / Downtown
- R3:** Assess multi-modal mobility impacts of East End Master Plan recommendations on Navigation Boulevard and adjacent roadway network
- R4:** Assess Sampson/York one-way pair multi-modal operations including potential benefits and challenges of conversion to two-way operations
- R5:** Improve Chartres Street as both a gateway to the East End and Downtown and as a barrier to mobility

TRANSIT

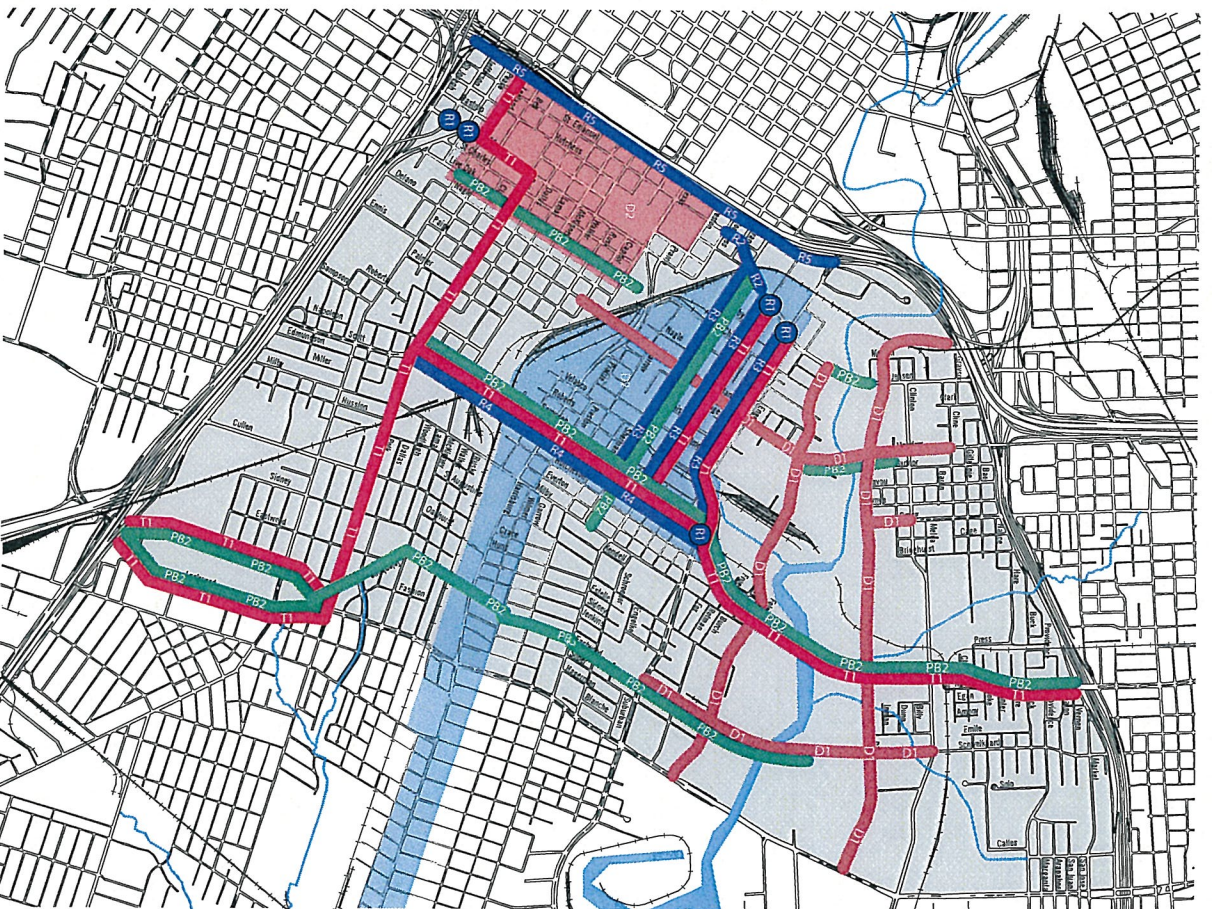
- T1:** Develop Enhanced Transit Corridors for both east-west and north-south travel
- T2:** Identify mobility improvements that would support and integrate with East End Urban Circulator implementation

PEDESTRIAN & BICYCLING

- PB1:** Pedestrian improvements to support transit, address barriers and encourage more walking trips
- PB2:** Comprehensive area bicycle improvements that connect the Columbia Tap, MKT, Harrisburg and Buffalo Bayou Trails and Major Destinations
- PB3:** Implement a regional wayfinding system targeting pedestrian-bicyclist connections as well as automobiles

DEVELOPMENT

- D1:** Support high level of connectivity in future roadway network (e.g., new collectors for thoroughfare plan)
- D2:** Develop parking management approach for activity centers



Map Key

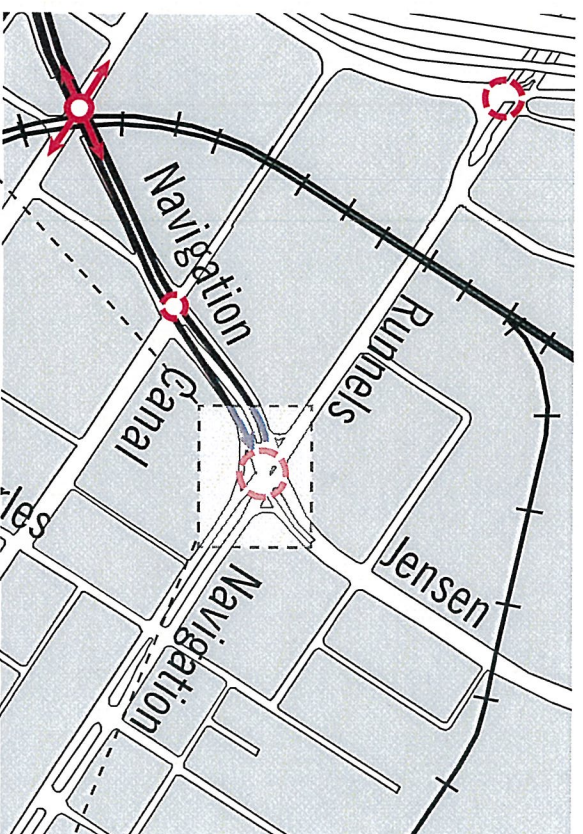
Corridor Improvement

Intersection Improvement

R1: Improve key intersection operations

Potential Improvements

- **Navigation Boulevard at Jensen / Runnels**
Potential roundabout in existing R.O.W.; East End gateway
- **Navigation Boulevard at Canal Street** - roundabout or improved signal design
- **Navigation Boulevard at Sampson / York**
(See Improvement R4) - Two-way operations on York Street would improve intersection operations; potential roundabout or simplified signal design
- **IH-45 Frontage / Pease Street at Dowling** - Address westbound Pease Street approach to eliminate conflict with IH-45 frontage road traffic
- **Chartres/IH-10 on-ramp at Runnels Street**
(See Improvement R5) - Improved traffic control and northbound approach geometry.

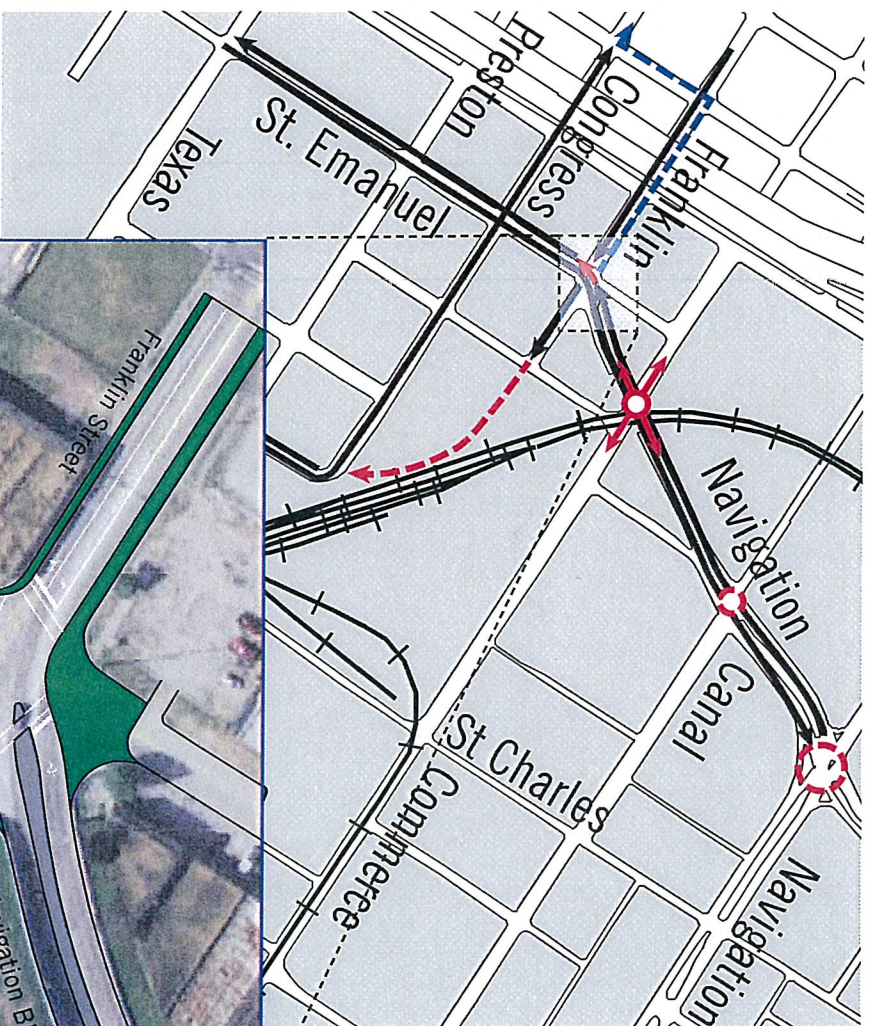


Conceptual Plan for Navigation Boulevard at Jensen / Runnels Street Roundabout

R2. Improve connectivity for all modes between the Second Ward and Fifth Ward neighborhoods to Eado and Downtown

Potential Improvements

- Redesign Navigation Boulevard/ St. Emanuel Street/ Franklin Street intersection
- Create continuous north/south corridor from IH-10 to IH-45
- Support West Belt grade separation of Navigation and Commerce intersection
- Eliminate two-way portion of Franklin Street
- Extend Franklin Street east to intersection of Dowling Street and Congress Street



Existing Southbound approach to St. Emanuel Street at Navigation and Franklin



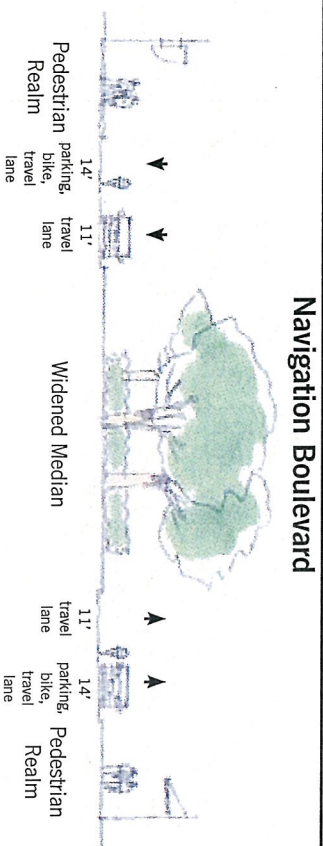
R3. Assess multi-modal mobility impacts of East End Master Plan recommendations on Navigation Boulevard and adjacent roadway network

Potential Improvements

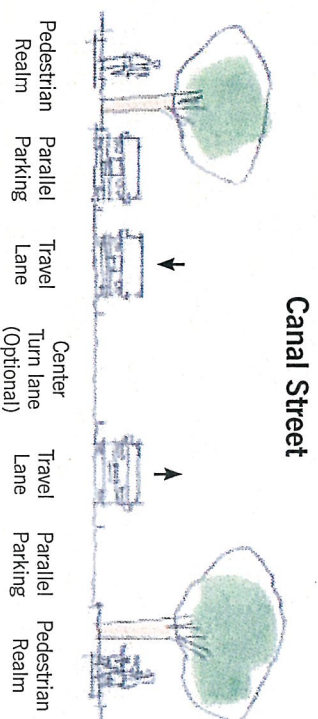
- Redesign roadways to optimize right of way with a cross section to:
 - Maintain acceptable or better vehicle capacity
 - Support multimodal mobility and connectivity
 - Support increased economic development



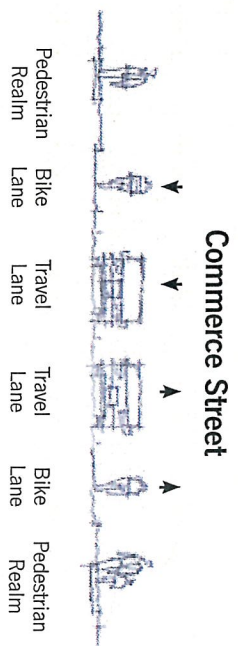
Santana Row Shopping District Activated Median
San Jose, CA



Navigation Boulevard (120' ROW): four-lane boulevard section with median design to allow for both greater activation (St. Charles Street to Delano Street) and angled parking (Delano Street to Palmer Street).



Canal Street (65' ROW): two or three-lane roadway with parallel on-street parking to support increased commercial development.



Commerce Street (60' ROW): two-lane roadway with bicycle lanes on both sides of the road providing dedicated, direct connection from downtown to the Harrisburg shared use trail.

R4: Assess multimodal operations Sampson/York one-way pair including potential benefits and challenges of conversion to two way-operations

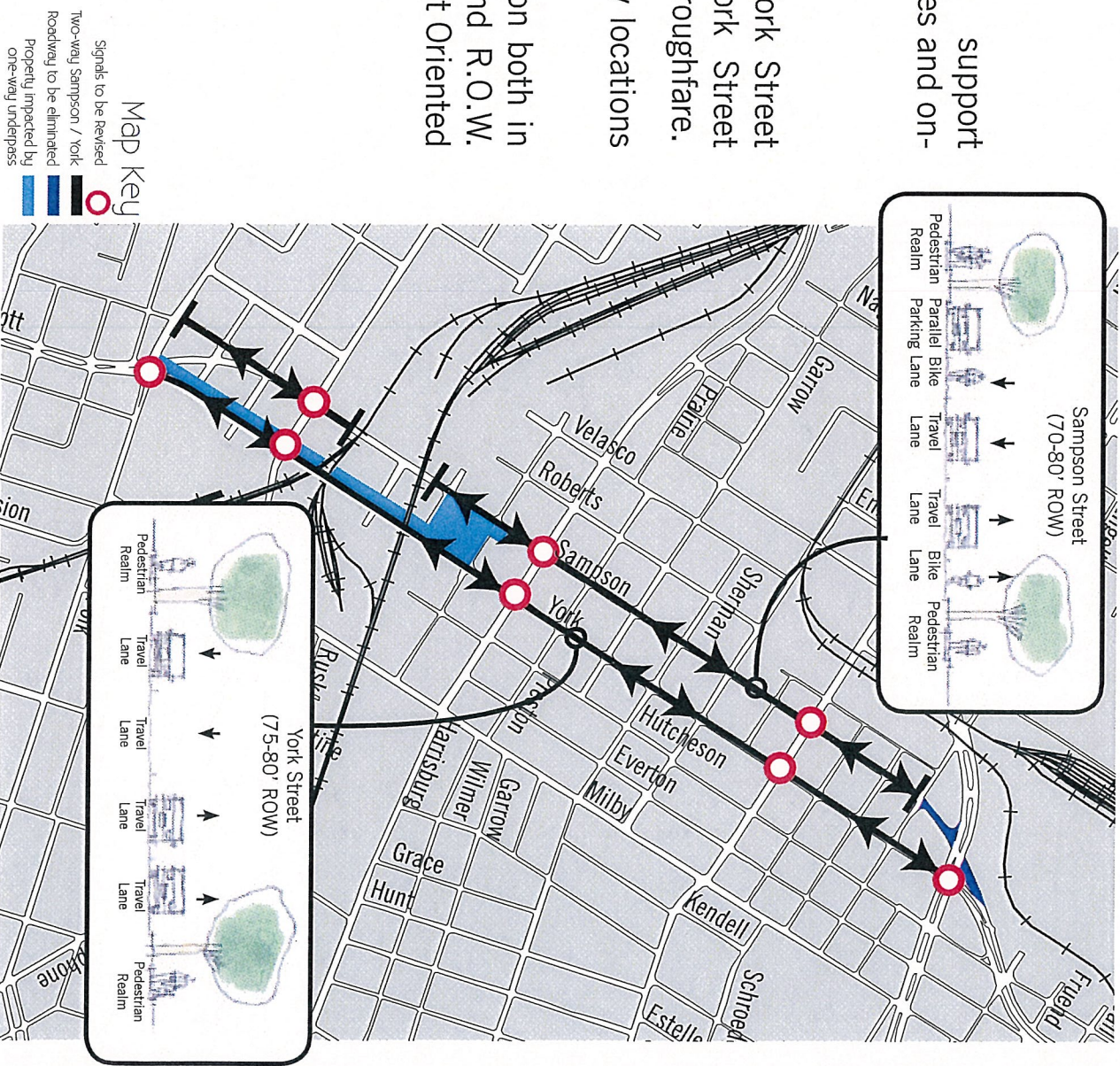
Potential Improvements

Short Term

- Revise roadway striping to support multimodal transportation choices and on-street parking.

Long Term

- Convert Sampson Street and York Street to two-way operations with York Street operating as four-lane major thoroughfare.
- Improve signal operations at key locations to support two way traffic.
- Limits impact of grade separation both in terms of infrastructure costs and R.O.W. acquisition on blocks with Transit Oriented Development potential.



R5. Improve Chartres Street as both a gateway to the East End and Downtown, and a barrier to mobility

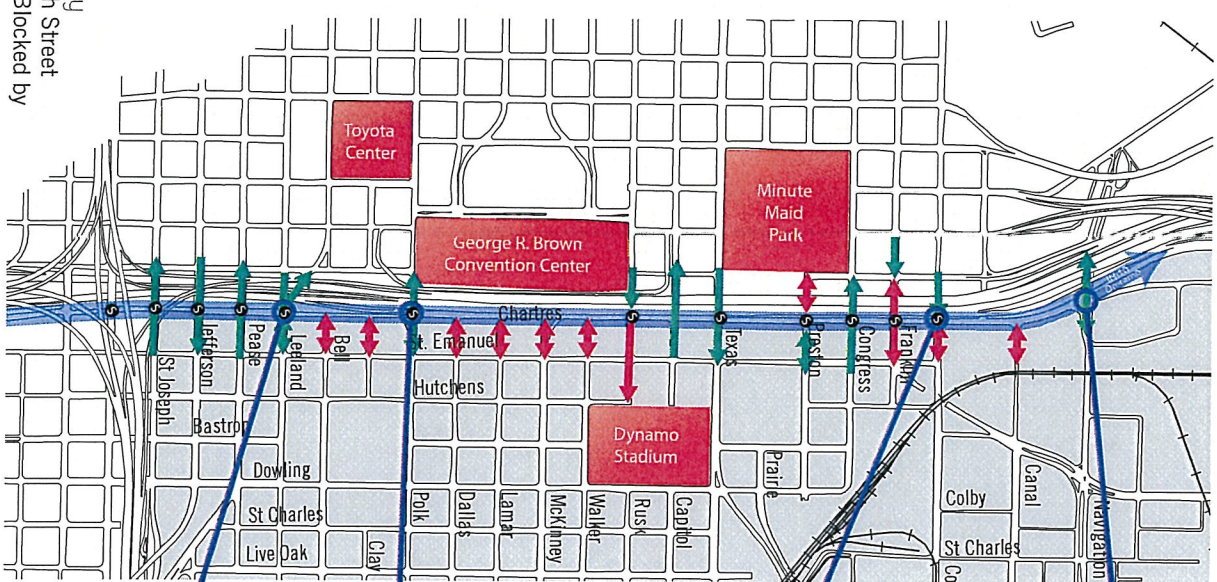
Potential Improvements

Short Term

- Improved wayfinding and signing for major destinations and roadway directions (one-way Vs. two-way)
- Targeted improvements to key pedestrian crossing points and crash locations
- Improved traffic control at Chartres Street at Runnels Street (e.g., roundabout)

Long Term

- Complete redesign of Chartres Street as gateway to Downtown, East End and the East End



Chartres at Runnels



Chartres at Congress

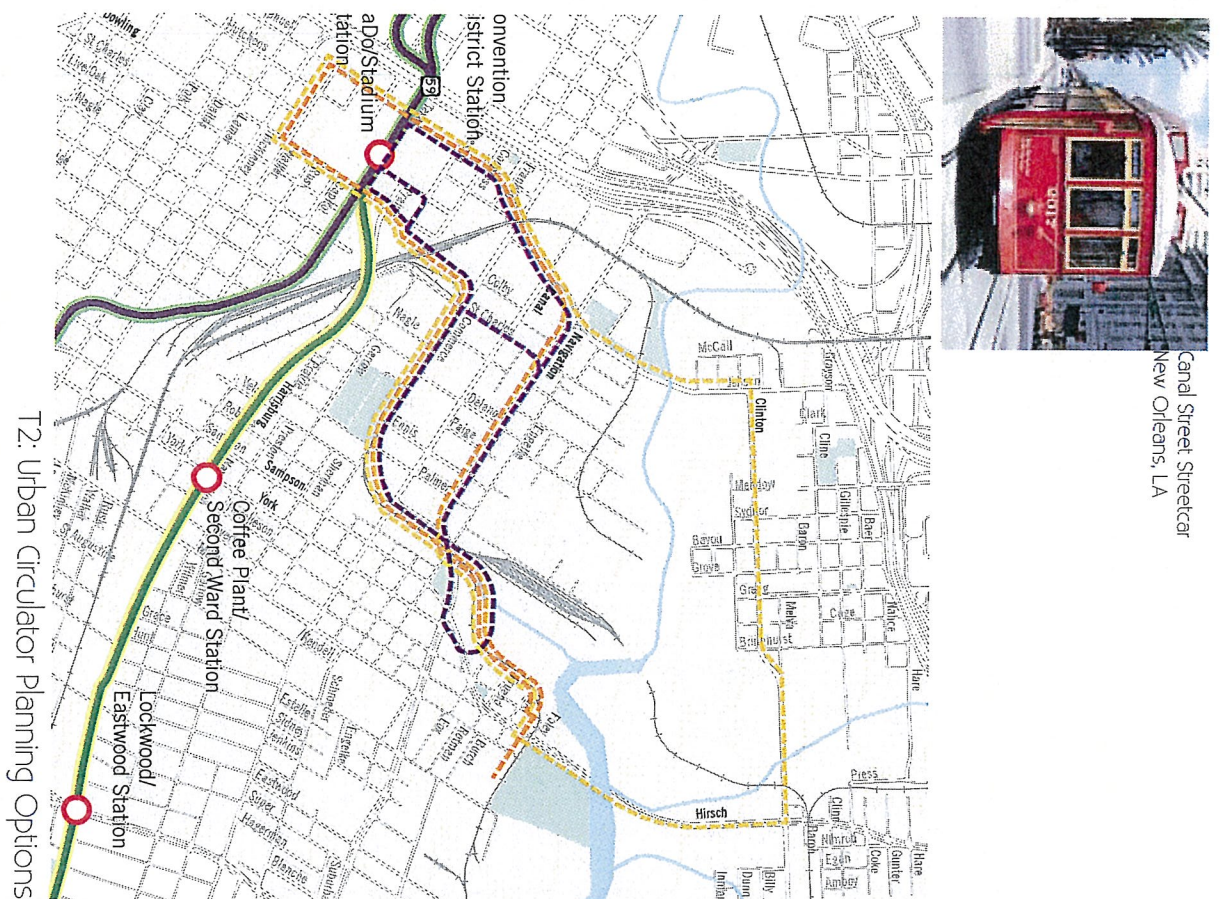
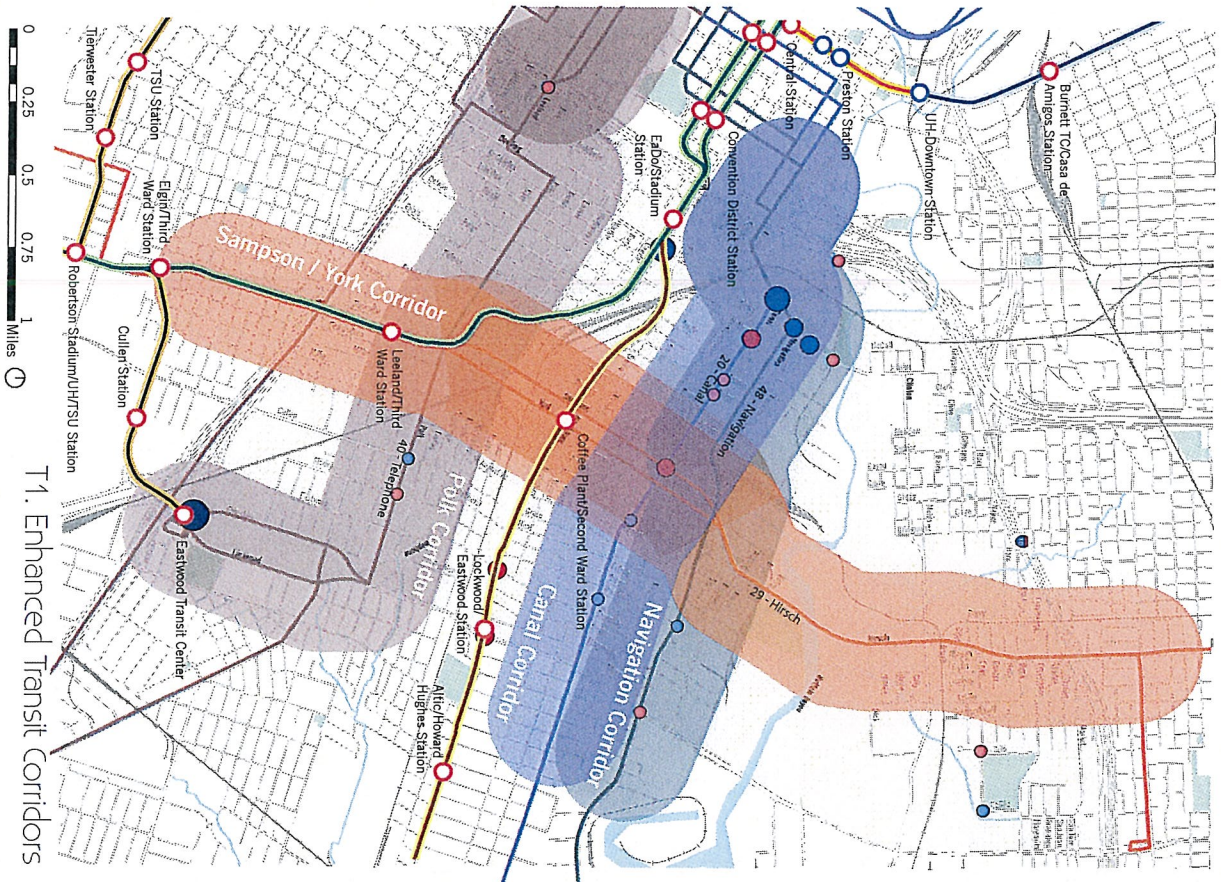


Chartres at Polk



Chartres at Leeland/Bell

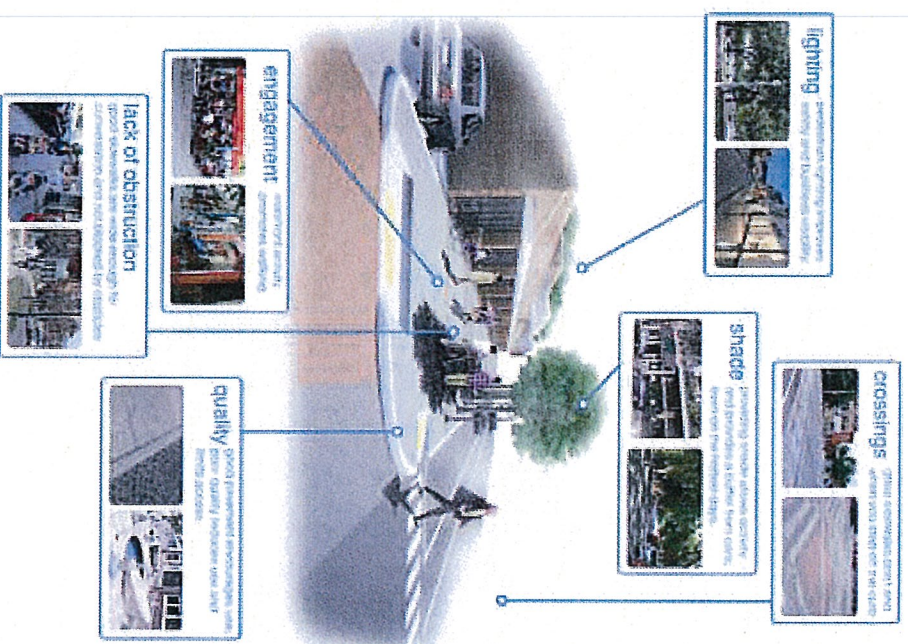
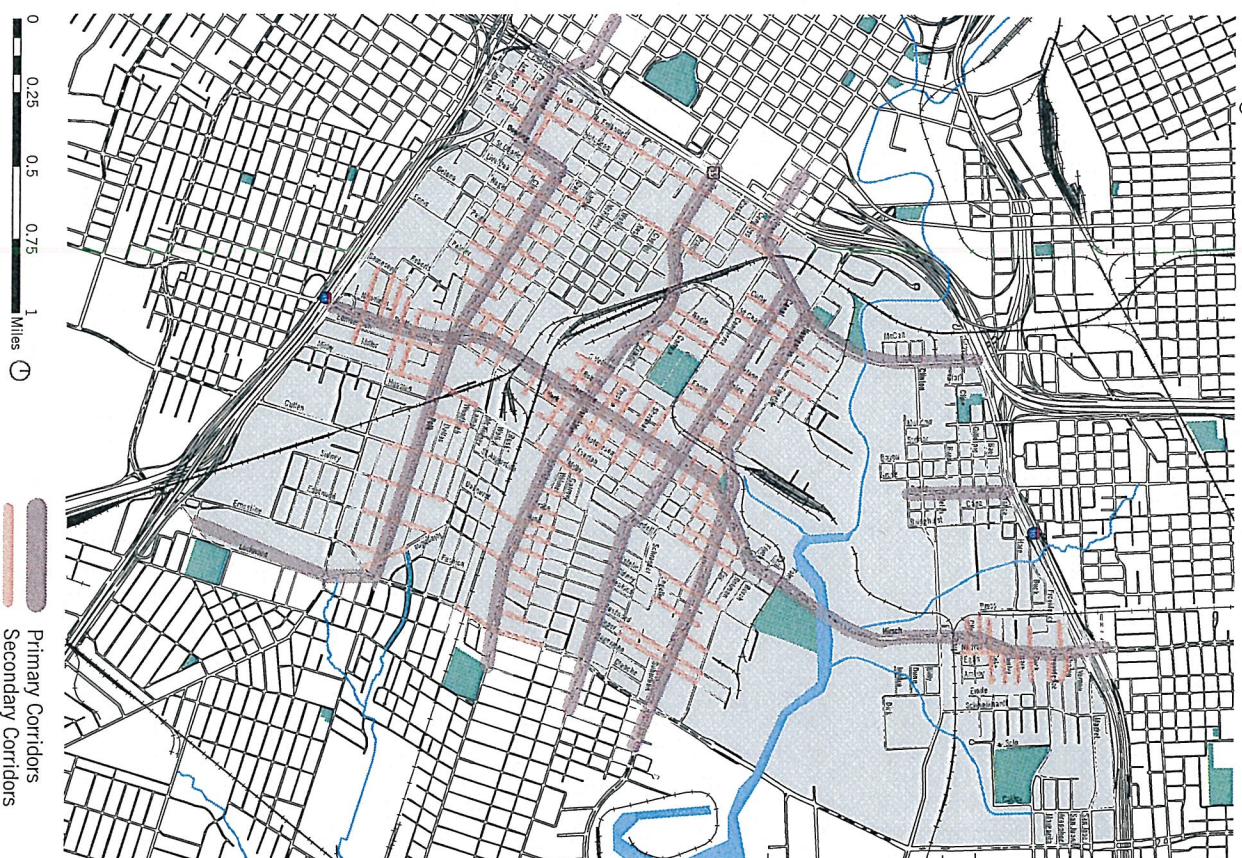
T1 & T2: Transit Improvements



Canal Street Streetcar
New Orleans, LA

PB1: Develop pedestrian improvements to support transit, address barriers and encourage increase in walking trips

Priority Pedestrian Corridors



Potential Improvements

1. Build on current success
2. Sidewalk Standards (COH Transit Corridors)
3. Signal improvements and crossings
4. Lighting (Underpasses & Transit Stops)
5. Major Barrier Crossings (Rail, Freeway, Bayou)