Downtown Tucson
Traffic Study Summary
August 2016

Pima Association of Governments

CITY OF FOUNDED 1775 TUCSON

Why do a downtown traffic study?

- Downtown Tucson is experiencing infill development in many locations, not just one particular area. A comprehensive assessment is needed.
- Some downtown residents are concerned about future infill projects and traffic. Better coordination is needed to look at future impacts.
- The future completion of Downtown Links (Maclovio-Barraza Parkway) will change traffic patterns in downtown. How?
- Real vs. perceived traffic patterns and congestion. Let's take a closer look at the data before making assumptions.
- In late 2015, City staff met with PAG staff to discuss a scope of work for a downtown traffic study

Last 5 years of growth

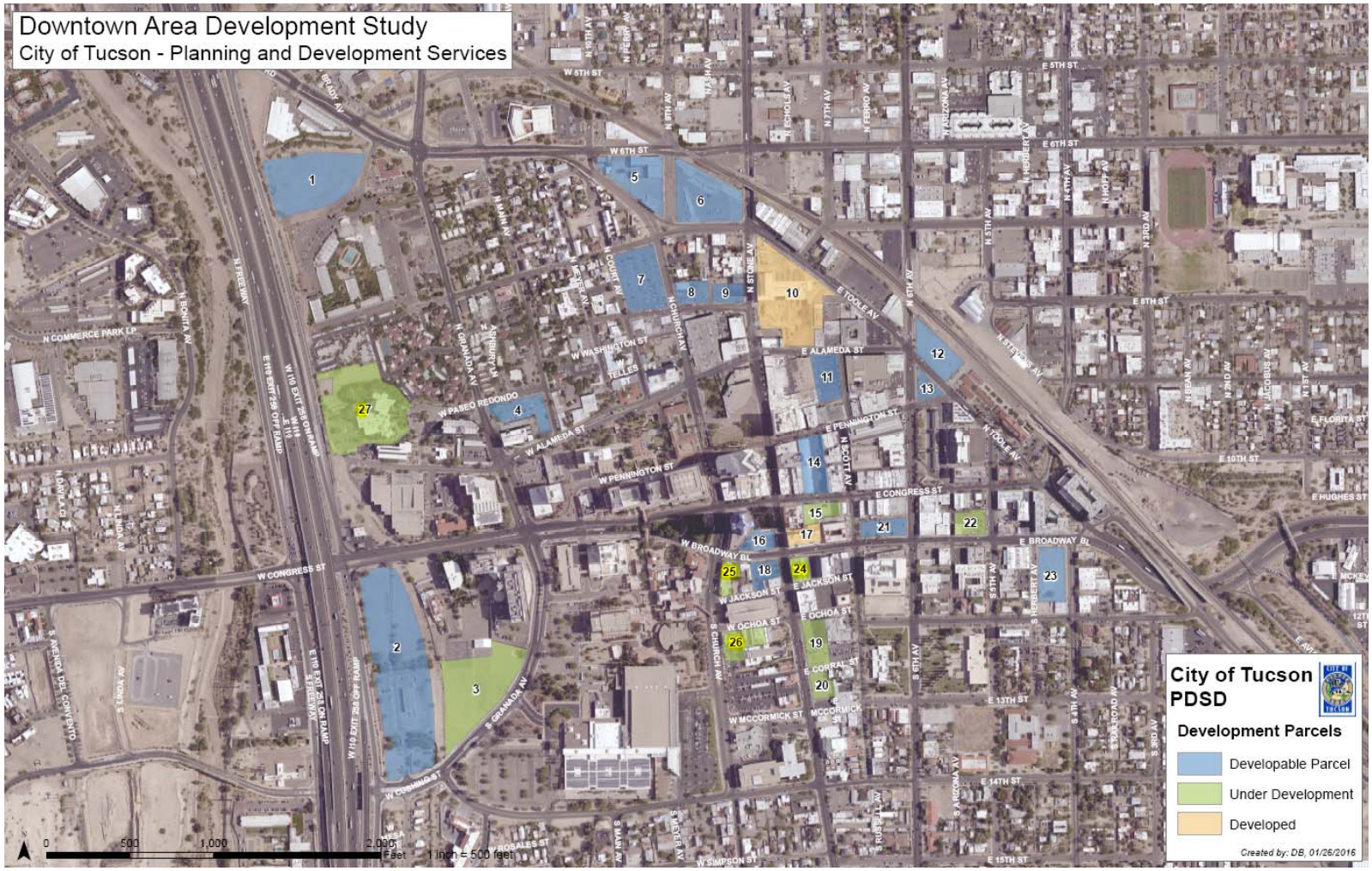
Streetcars, restaurants, bars, retail shops, offices, housing, and a whole lot of fun and excitement. Around $1 billion of investment in downtown Tucson.

Next 10 years of growth

25 large infill projects in process, and ***2*** large projects recently completed. More housing, retail, offices, restaurants, hotels.

Next 10 years of growth

Next 10 years of growth



Next 10 years of growth

Downtown Area Development Study
City of Tucson - Planning and Development Services

Project #	Ownership Name	Development Type	Site Area (Acres)	Site Area (SF)	Private or Public Property	IID Sub-District	Zone	Land Use	Existing Parking	Hotel Rooms	Residential (Per Acre)	Office (SF)	Commercial (SF)	Civic (SF)
1	First Family Company	Developable Parcel	3.88	169,143	Private	Downtown Core Subdistrict	I-1	Mixed-Use	0	0	0	8,000	12,000	0
2	Rio Nuevo	Developable Parcel	8.39	365,613	Public	Downtown Core Subdistrict	OCR-2	Mixed-Use	334	0	0	17,000	26,000	0
3	Rio Nuevo	Under Development	4.10	178,687	Public	Downtown Core Subdistrict	C-3	Mixed-Use	350	0	0	0	34,000	15,000
4	City of Tucson	Developable Parcel	1.06	46,268	Public	Downtown Core Subdistrict	PAD-2	Residential	111	0	152	0	0	0
5	Town West	Developable Parcel	1.99	86,793	Private	Downtown Links Subdistrict	C-3	Office	72	0	15	1,150	66,311	0
6	City of Tucson	Developable Parcel	2.58	112,488	Public	Downtown Links Subdistrict	I-1	Mixed-Use	163	0	131	0	139,714	0
7	IDA	Developable Parcel	2.05	89,131	Public	Downtown Links Subdistrict	C-3	Mixed-Use	328	0	80	0	89,503	0
8	RION.	Developable Parcel	0.59	25,828	Public	Downtown Links Subdistrict	C-3	Mixed-Use	54	0	120	0	17,866	0
9	IDA	Developable Parcel	0.49	21,255	Public	Downtown Links Subdistrict	OCR-2	Mixed-Use	59	0	200	0	10,890	0
10	Pima County	Developed	4.25	185,176	Public	Downtown Core Subdistrict	OCR-2	Office / Institutional	700	0	0	221,314	6,984	0
11	US Parking Systems	Developable Parcel	0.99	42,969	Private	Downtown Core Subdistrict	OCR-2	Office	135	0	0	51,562	0	0
12	City of Tucson	Developable Parcel	1.21	52,687	Public	Downtown Core Subdistrict	OCR-2	Parking	132	0	0	0	0	0
13	City of Tucson	Developable Parcel	0.37	16,282	Public	Downtown Core Subdistrict	OCR-2	Parking	50	0	0	0	0	0
14	Pueblo Parking	Developable Parcel	1.19	51,807	Private	Downtown Core Subdistrict	C-1	Mixed-Use	165	0	35	10,000	5,000	0
15	Bourne	Under Development	0.51	22,035	Private	Downtown Core Subdistrict	OCR-2	Mixed-Use	63	0	116	14,729	15,564	0
16	Hub Properties	Developable Parcel	0.47	20,369	Private	Downtown Core Subdistrict	OCR-2	Mixed-Use	0	0	163	25,355	0	0
17	Pima Association of Governments	Developed	0.49	21,144	Public	Downtown Core Subdistrict	OCR-2	Mixed-Use	102	0	98	26,434	0	0
18	Caylor Development	Developable Parcel	0.52	22,447	Private	Downtown Core Subdistrict	C-3	Mixed-Use	57	0	79	539	4,429	0
19	Holualoa	Under Development	0.86	37,580	Private	Downtown Core Subdistrict	C-3	Residential	113	0	38	0	0	0
20	Holualoa	Under Development	0.44	19,349	Private	Downtown Core Subdistrict	C-3	Residential	61	0	38	0	0	0
21	Pima County	Developable Parcel	0.62	27,136	Public	Downtown Core Subdistrict	OCR-2	Mixed-Use	88	0	116	15,000	15,000	0
22	AC Hotel Broadway	Under Development	0.59	25,763	Private	Downtown Core Subdistrict	OCR-2	Hotel	75	136	0	26,700	0	0
23	Peach Properties	Developable Parcel	1.22	53,162	Private	Downtown Core Subdistrict	OCR-2; C-3	Mixed-Use	0	0	93	0	21,264	0
24	The Westerner	Under Development	0.38	16,375	Private	Downtown Core Subdistrict	OCR-2	Mixed-Use	0	0	114	0	12,500	0
25	Diocese	Under Development	0.44	18,700	Private	Downtown Core Subdistrict	OCR-2	Residential	0	0	10	0	0	0
26	Marist College	Under Development	0.85	3,600	Private	Downtown Core Subdistrict	C-3	Residential	0	0	132	0	0	0
27	El Rio Health	Under Development	5.07	220,855	Private	Downtown Core Subdistrict	PAD-2	Office	100	0	0	31,518	0	0

Source: PDSD Permitting System- 2016

Traffic Study Framework

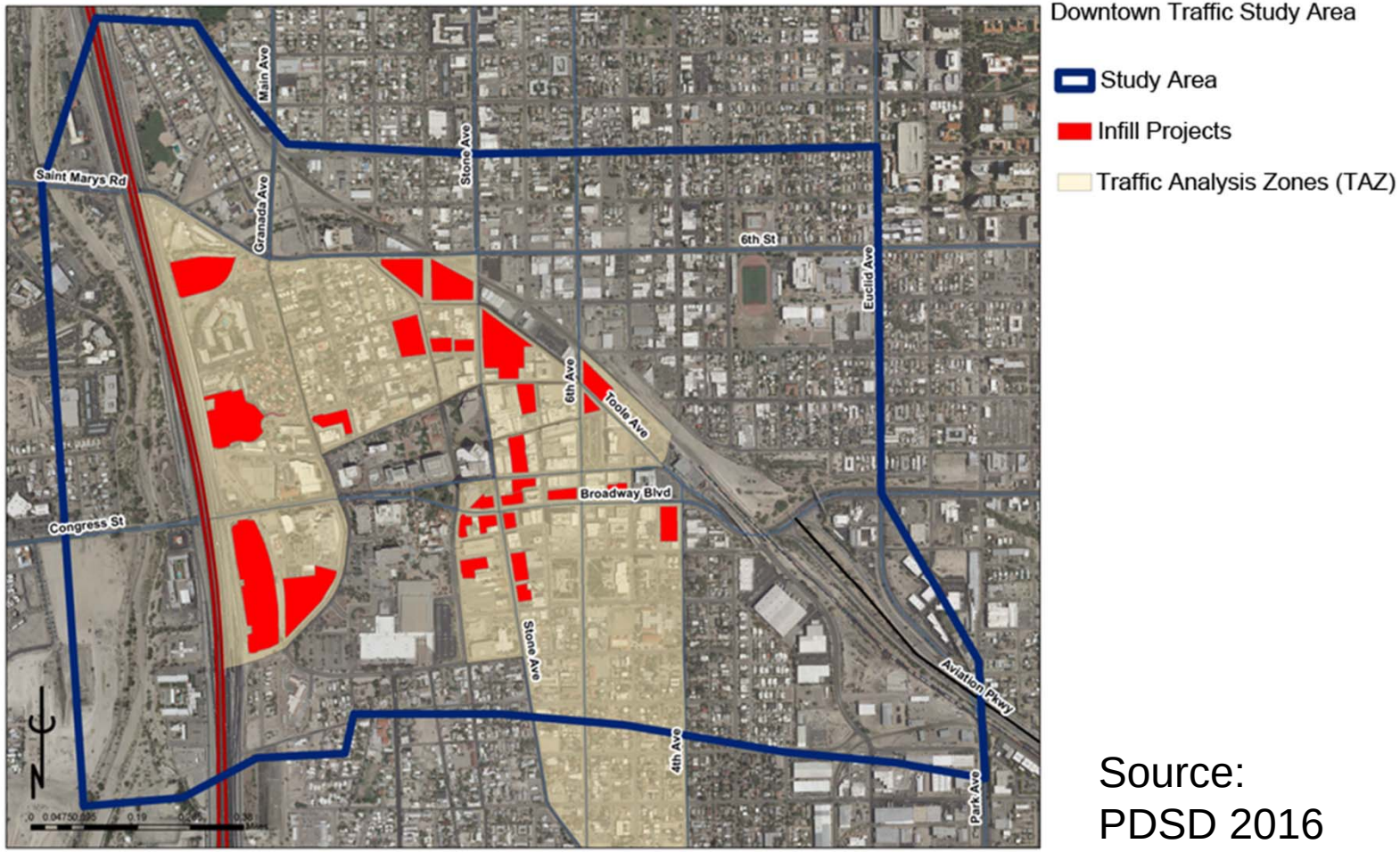
What do we want to know?

- How much traffic will these future downtown infill projects generate?
- If there is a significant increase in traffic, what will happen and where?
- What are the recommendations for managing additional traffic in downtown?

Data Inputs

1. PDSD provided data on the 27 infill projects. Data is based on full build-out of properties using the Infill Incentive District (IID) zoning.
   - Location, type of development, size/scale, number of people, number of parking spaces
2. TDOT identified specific downtown transportation projects that will be completed in the next several years.
   - Downtown Links corridor, Church Avenue road diet project, some smaller changes to local streets
3. Pima Association of Governments (PAG) conducted the traffic study using the base regional traffic model data plus the 27 infill projects data.

Downtown Traffic Study Area



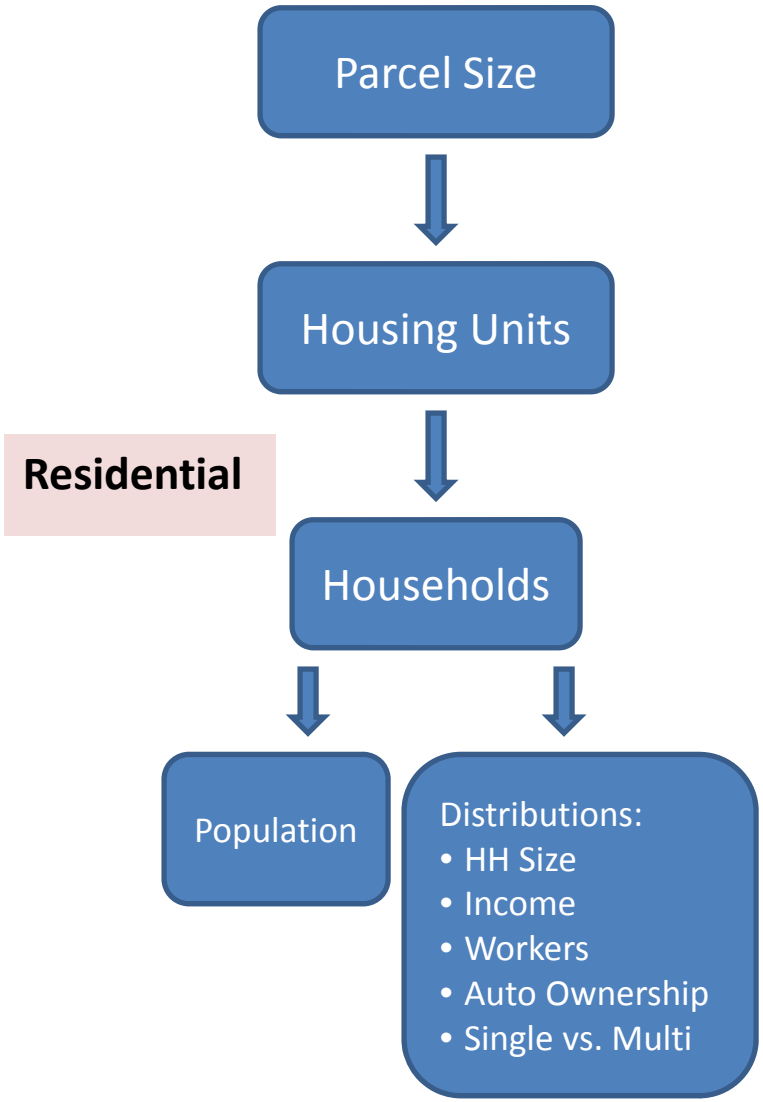
Source:
PDSD 2016

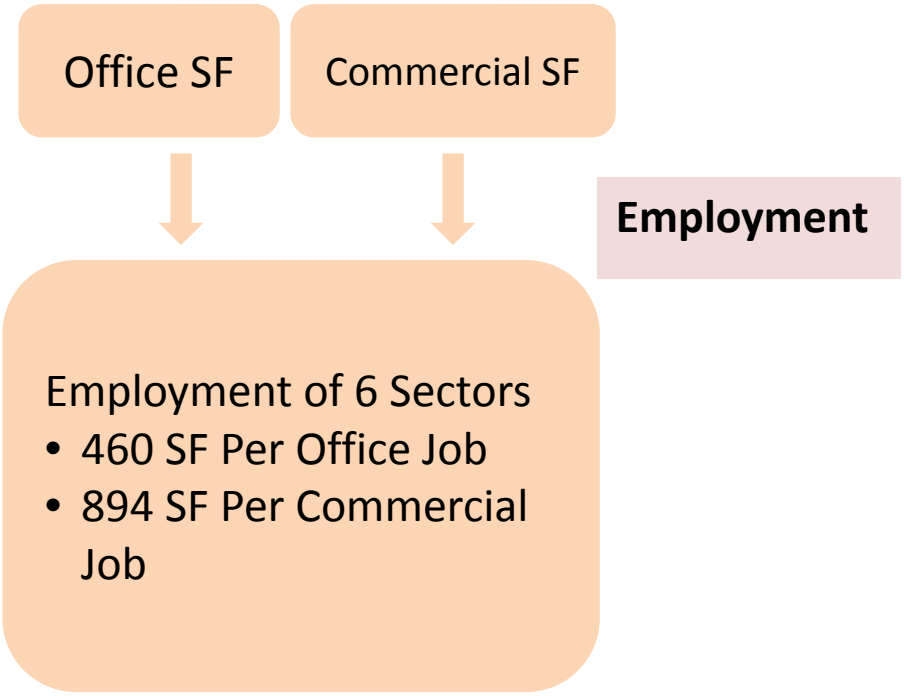
Data Inputs

# of Infill Projects	Total Residential (HU)	Total Office (SF)	Total Commercial (SF)	Total Civic (SF)	Total Hotel Rooms
27	1,499	449,301	477,025	15,000	136

Source: PAG 2016

Data Conversion





Source: PAG 2016

Future Population & Employment Scenarios

Scenario A = PAG LUM with base forecasted growth of Population & Employment in downtown area

Scenario B = PAG LUM with base forecasted growth (**A**) + the 27 downtown infill projects

Final growth determination:

- If **A >= B** then **A**
- If **B > A** then **B**; (**B-A**) will be subtracted from the other areas proportionally to ensure the regional total remain the same

Source: PAG 2016

Future Population & Employment Growth in Downtown

	Households	Population	Jobs
2015	2,789	4,445	14,671
Scenario A: 2025 PAG LUM Base Growth	3,068	4,963	16,966
Scenario B: 2025 PAG LUM Base Growth plus Infill Projects	4,301	6,627	17,415

Source: PAG 2016

PAG Roadway System Modeling

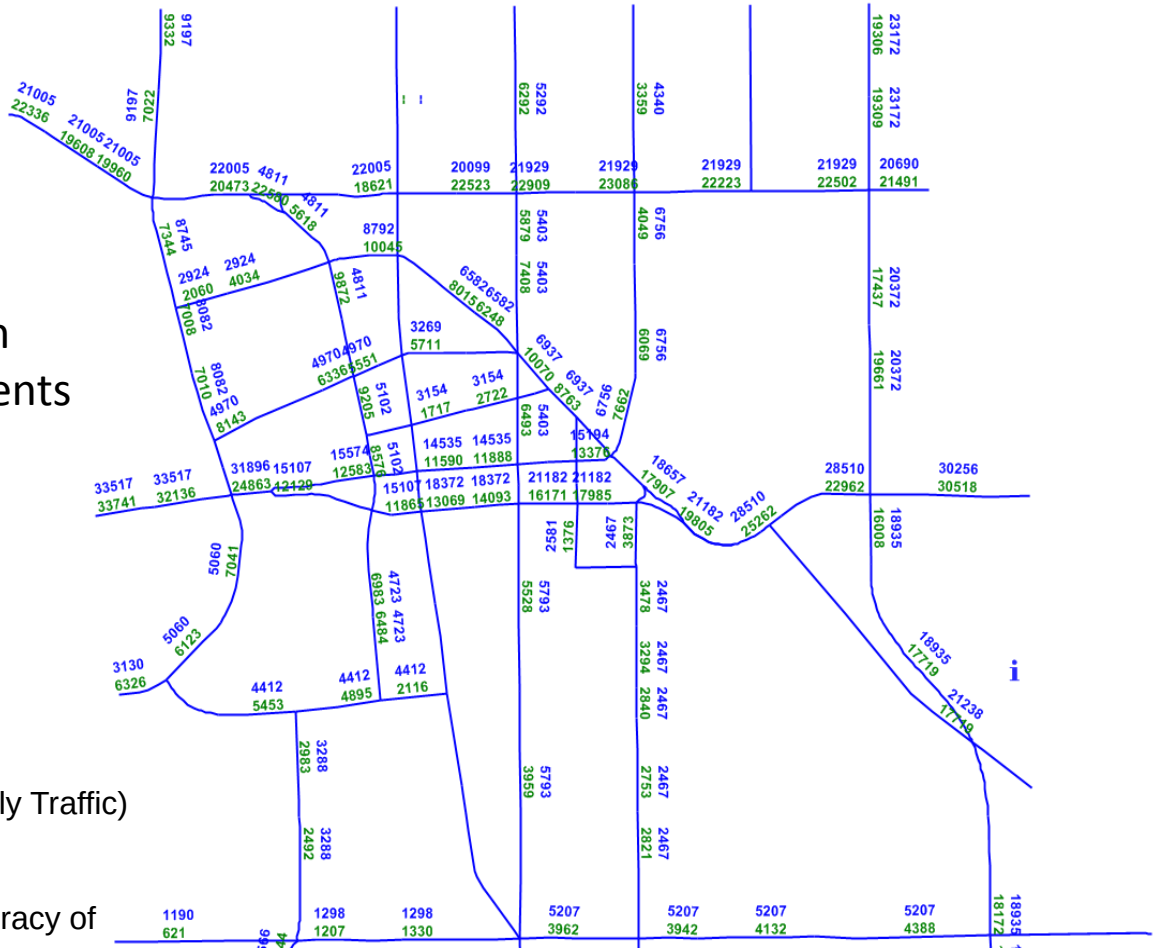
Regional to Local Analysis

- Full network modeling with TransCAD
  - Includes alternate modes: walk, bike, transit
- Sub-area modeling (downtown area)
  - Vehicular traffic only
- Origin-Destination Matrix Estimation
  - Adjustment of sub-area demand to match traffic counts
- DTA to model traffic operations
  - Mesoscopic Dynamic Traffic Assignment model

PAG Sub-area System Modeling

Analysis includes:

- Traffic Signalization
- Permitted movements
- Generation links (origins)
- Destination nodes
- Speed limits



Blue = actual ADT (Average Daily Traffic)
Green = estimated ADT

Estimated ADT within 95% accuracy of actual ADT

PAG Traffic Modeling Results

Demographic & socio-economic statistics for the downtown study area that will receive additional residential infill projects

	Household Size	Car Ownership	Mean HH Income (2008 $)	Workers/HH
2015	1.47	1.21	37,391	0.62
2025 with Additional Residential Infill Projects	1.45	1.22	43,959	0.63
2025 Regional Average	2.43	1.71	61,463	0.97

PAG Traffic Modeling Results

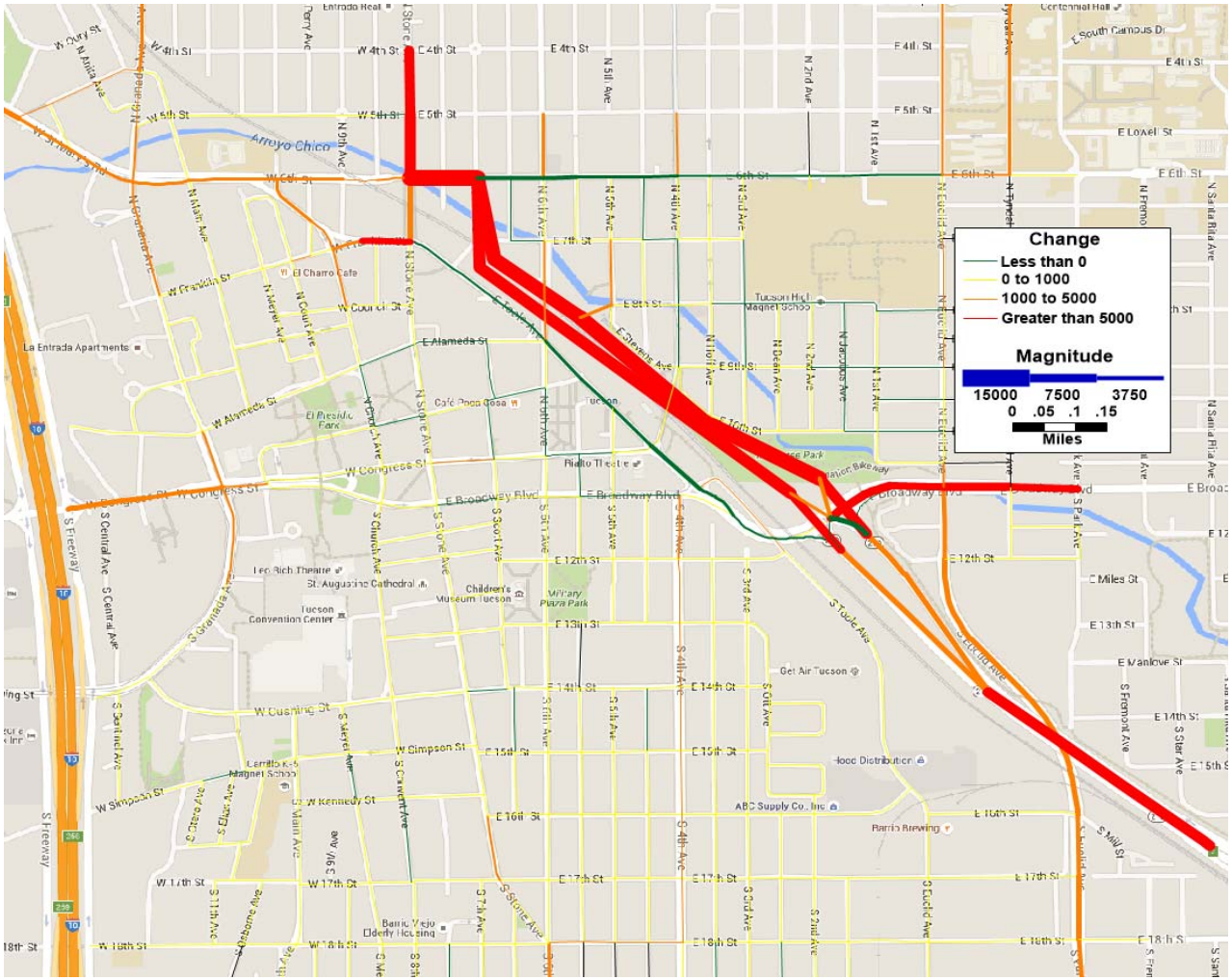
Projected Daily Traffic Operations in Downtown Area

	Total VMT	Total VHT	Total Delay	Delay/ Vehicle	Avg. Speed
2015	241,052	13,714	3,416 hr	1.2 min	17.6
2025 PAG LUM Base Growth	284,339	18,724	5,416 hr	1.6 min	15.2
2025 PAG LUM Base Growth plus Infill Projects	289,909	19,989	6,298 hr	1.8 min	14.5

VMT = Vehicle Miles Traveled
VHT = Vehicle Hours Traveled

PAG Traffic Modeling Results

2015 to 2025 daily traffic volumes with Infill Projects



PAG Traffic Modeling Results

Street segments that may receive more traffic with 27 infill projects

Street Segment	Traffic Increase (Yr 2015 – Yr2025 in Vehs/Day)*
Franklin St – Stone Ave to Church Ave	2600 - 5700
Stone Ave – 6th St to Toole Ave	4400
6th St – Granada Ave to Stone Ave	1100– 2900
Church Ave – Council St to 6th St	1400 - 2700
Granada Ave – Cushing St to 6th St	600 - 1900
4th Ave – 18th St to Broadway Blvd	1000 – 1500
Stone Ave – Broadway Blvd to 18th St	400 - 1400
Congress St (WB) – Scott Ave to Granada Ave	600 - 1200
Toole Ave – Broadway Blvd to 16th St	400 - 1200
*Entries with a range of values are for multiple contiguous street segments with large increases in traffic volumes	

Summary Results

PAG Conclusions

- Net traffic impact of the 27 infill projects is relatively small
  - 20% increase in traffic in study area from 2015 to 2025, but is not entirely attributable to infill projects
  - 14% growth on average region-wide
  - Future Downtown Links segment will carry 30% total traffic increase in study area

PAG Recommendations

- No evidence has been found to warrant any major roadway improvements in the downtown street network due to the infill projects
- Signal timing may need to be adjusted to facilitate changes in traffic flow due to the future Downtown Links Corridor

TDOT Recommendations

- Continue to request that infill projects conduct a Traffic Impact Analysis, when needed
- Monitor traffic flows and volumes on a regular basis as infill projects are completed
- Implement basic traffic management strategies to improve traffic flow and locations
- Continue to encourage transit, bike, and ped trips

More Information

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