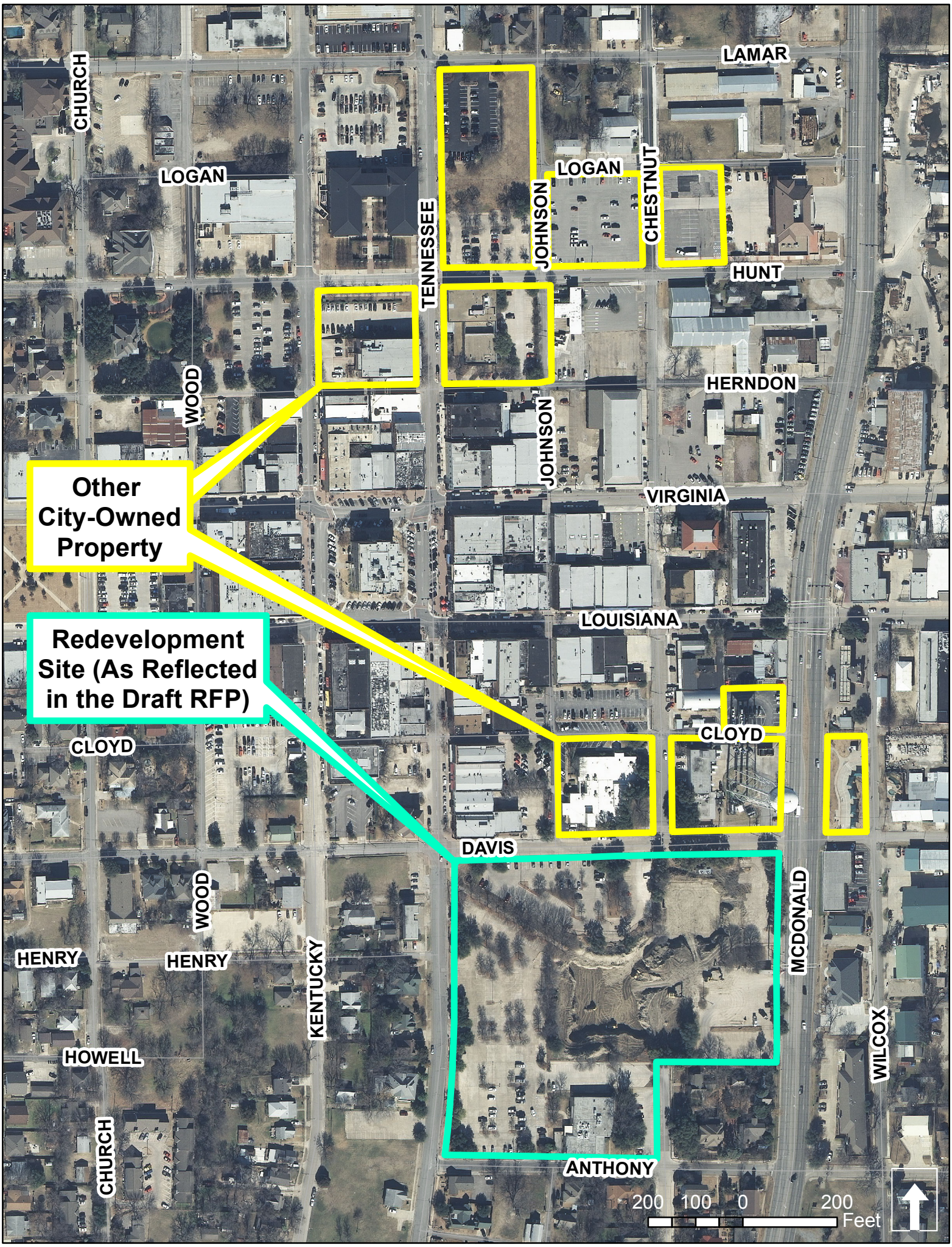
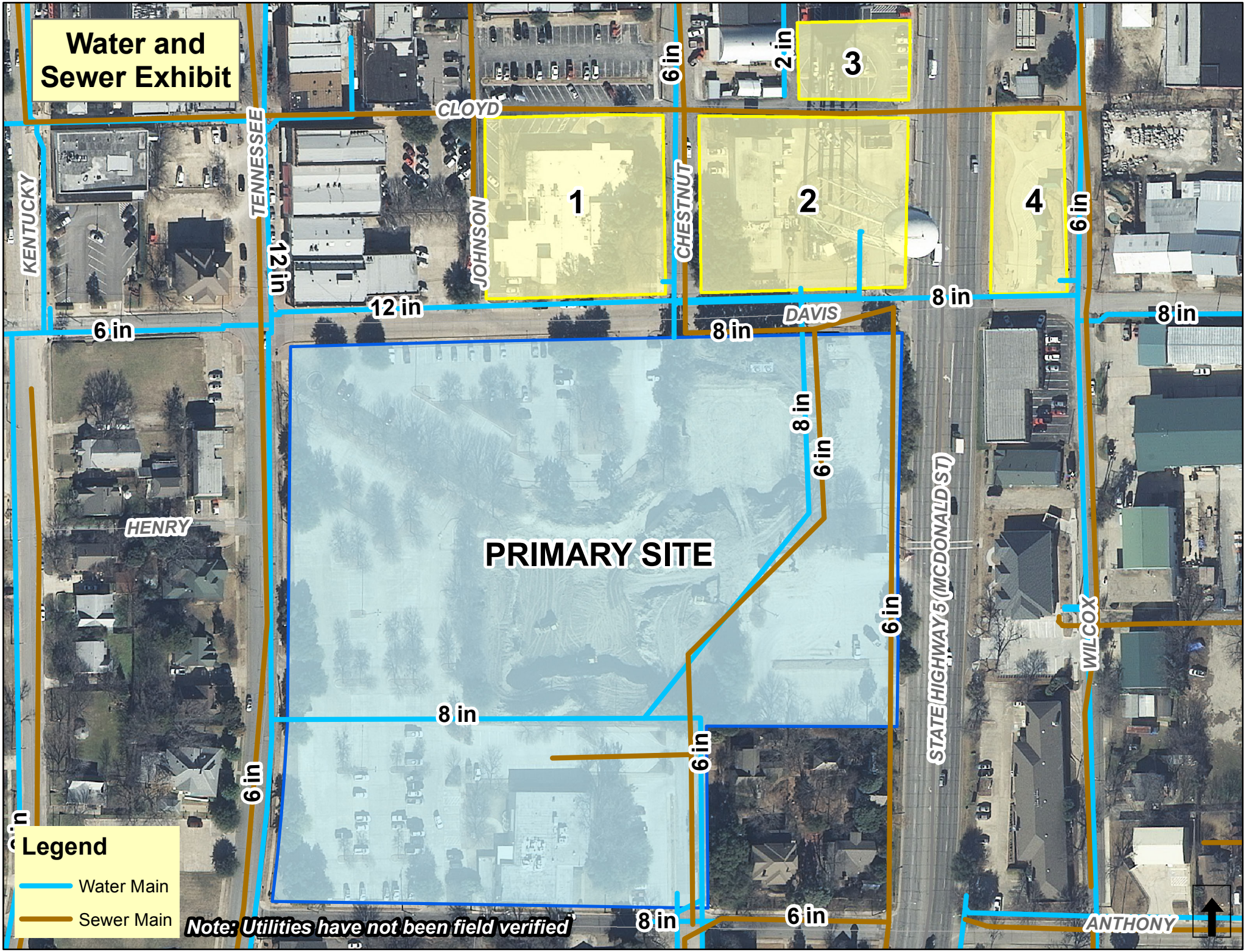
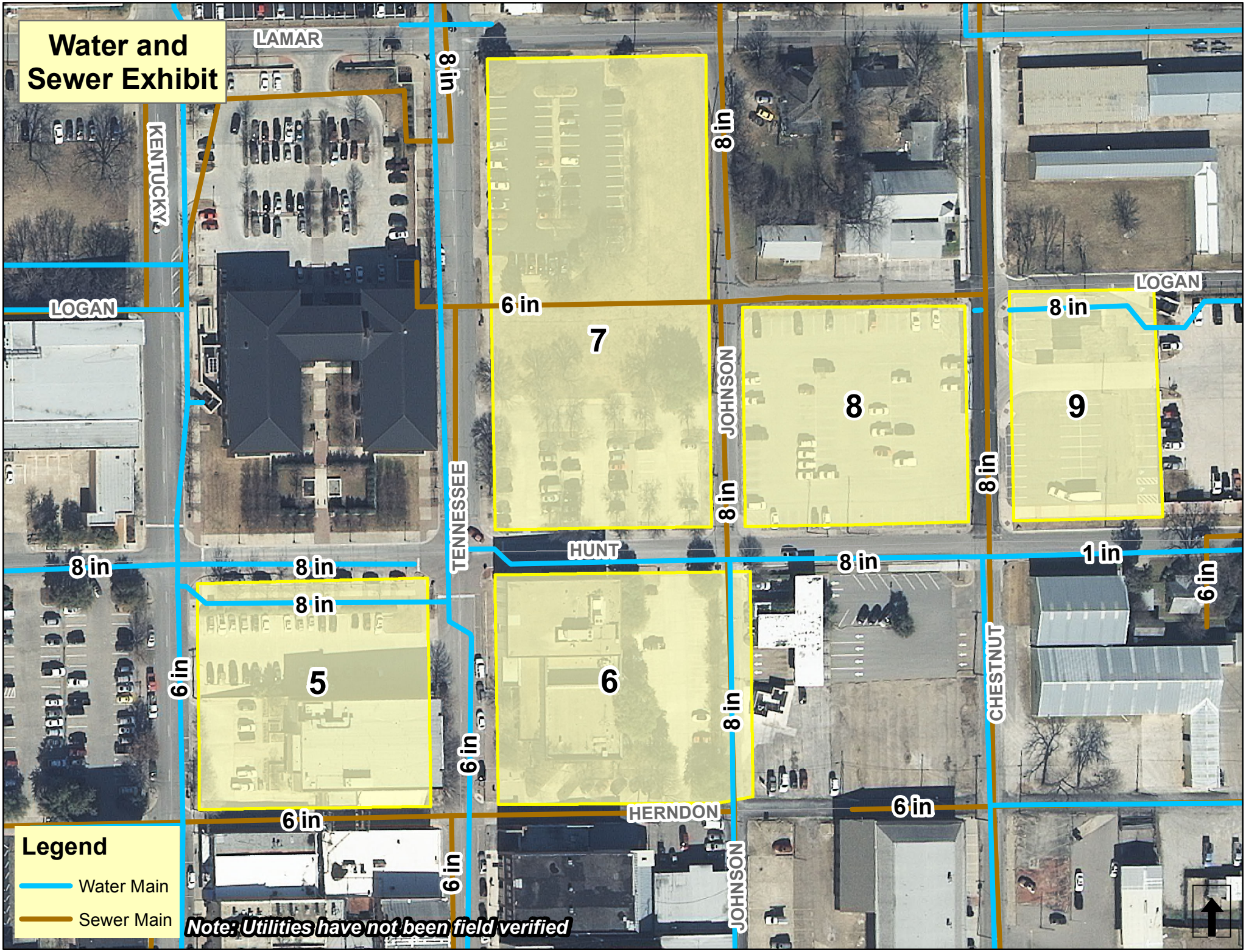
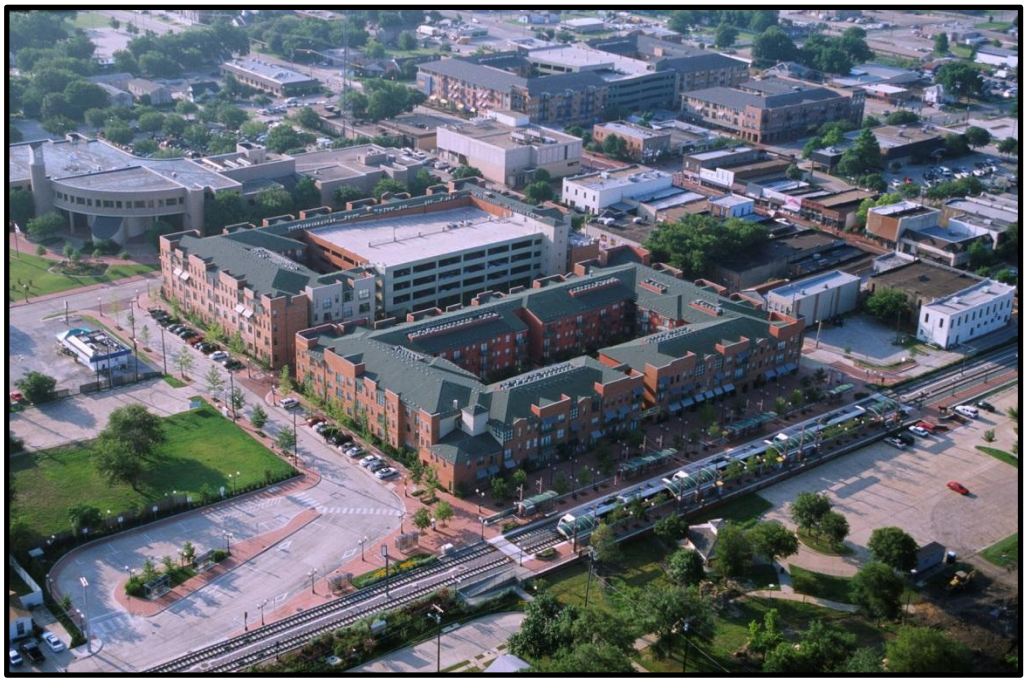

Other City-Owned Property
Redevelopment Site (As Reflected in the Draft RFP)
LAMAR
CHURCH
LOGAN
TENNESSEE
JOHNSON
CHESTNUT
HUNT
WOOD
HERNDON
VIRGINIA
LOUISIANA
CLOYD
DAVIS
MCDONALD
HENRY
KENTUCKY
WILCOX
HOWELL
ANTHONY
200 100 0 200
Feet


Water and Sewer Exhibit
CLOYD
KENTUCKY
TENNESSEE
JOHNSON
CHESTNUT
DAVIS
HENRY
WILCOX
STATE HIGHWAY 5 (MCDONALD ST)
ANTHONY
1
2
3
4
PRIMARY SITE
6 in
8 in
12 in
2 in
Legend
Water Main
Sewer Main
Note: Utilities have not been field verified


Water and Sewer Exhibit
LAMAR
KENTUCKY
LOGAN
TENNESSEE
JOHNSON
HUNT
HERNDON
CHESTNUT
8 in
6 in
1 in
7
8
9
5
6
Legend
Water Main
Sewer Main
Note: Utilities have not been field verified

Case Study
City of Plano's Partnerships for the Redevelopment of Publicly-Owned Downtown Properties
(Eastside Village I and II)



Eastside Village I

Completed: 2001
Location: Northwest Corner of 15th Place and Avenue K
Site size: 3.6 acres (156,816 square feet)
Gross building area: 245,000 square feet
Building height: 3 and 4 stories
Residential Units: 234 (live/work; efficiency; one bedroom; two bedroom)
Non-Residential Space: 15,000 square feet (ground floor retail/service; restaurant; office; and a community room leased by the City)
Parking: 5-level interior parking garage with 351 spaces; 47 on-street spaces
Developer Construction Cost: $15,720,000 total ($13,100,000 hard cost)
City Construction Cost: $2,000,000 ($1,030,098 credited against land transferred by DART to the City)
Building construction classification: 1997 UBC Group R-1 & M, Type V-1 Hour
Building construction materials: frame construction, brick veneer, stucco, and fiber cement board

Public Concessions and Incentives

The City assembled the site (partially through a land swap with DART), cleared improvements, and abated environmental contamination. The City leased the site to the Developer for 70 years, with three 10-year renewal options. Annual base rent ($0.60 per square foot) was discounted 25% in the first year of the lease and 50% in the second year of the lease. After the third year, the ground lease was adjusted based on the net operating income generated by the development. The City assumed responsibility for the construction of off-site infrastructure serving the development. Development fees paid to the City were credited against the ground lease rent during the first and second years. The neighborhood park fee was waived.

Eastside Village II

Completed: 2002
Location: Northeast Corner of 14th Street and Avenue K
Site size: 3.1 acres (135,036 square feet)
Gross building area: 245,000 square feet
Building height: 3 and 4 stories
Residential Units: 229 (live/work; efficiency; one bedroom; two bedroom)
Non-Residential Space: 25,000 square feet (ground floor retail/service; restaurant; office)
Parking: 5-level interior parking garage with 419 spaces (100 owned by City); 33 on-street spaces
Developer Construction Cost: $17,830,000 total ($15,100,000 hard cost)
City Construction Cost: $800,000
Building construction classification: 2000 IBC Group R-2 & M, Type V-A
Building construction materials: frame construction, brick veneer, stucco, and fiber cement board

Public Concessions and Incentives

The City deeded 1.1 acres to the Developer in exchange for 100 spaces in the parking garage (in addition to those spaces required by zoning code). The City's right to exclusive public use of the 100 spaces was secured by easement. The City provided a reimbursement to the Developer of $800,000 for the construction of public infrastructure to serve the development. The neighborhood park fee was waived.



The following has been excerpted from Appendix A of the City of Denton's Downtown Implementation Plan (2010)

B. Case Studies of North Texas TIF Districts and Transit-Oriented Development

Case Study: Downtown Plano Transit Village; Plano, TX

Plano, Texas is a large suburban city located north of Dallas. Its growth over the last 50 years has been dramatic. In 1960, Plano was a town of only 3,600 people. Today its population is estimated at over 230,000 and it is a major suburban employment center with over 100,000 jobs. The traditional downtown area, however, was largely left out of this growth. This area is home to the city's municipal offices and is its traditional core; however, up until recently, there had been little new office, retail, or residential development that was similar to what was being built in other nearby areas.

In 1983, Plano was one of 14 cities in the Metroplex region that voted to create the Dallas Area Rapid Transit (DART) agency. The original date for the arrival of planned light rail service to Plano was 2010, however, in the late 1990s it became apparent that the schedule for the delivery of this service would be accelerated significantly to 2002. This led the city to focus on taking advantage of transit as a way to spur economic development in the downtown area.

Prior to the arrival of DART, the largest investments in downtown involved a series of expansions of the city government offices. The city also purchased a largely abandoned strip shopping center to address the parking needs of its downtown employees. In 1984, voters approved bonds for streetscape improvements and the creation and expansion of downtown parks. These beautification efforts downtown did little to spur new private sector economic development. In 1991, the Plano planning and zoning commission development a downtown plan with the hope of enticing new investment to the area. The plan recommended preservation of the modest scale and historic character of downtown and promoted new infill development and redevelopment in areas adjacent to the traditional downtown. The desired result was to create a compact, mixed-use, pedestrian-oriented design for the downtown area. A new zoning overlay district was created for the 80-acre downtown core area. This required that all new buildings address the street and it limited building height to four stories. It also went as far as to restrict surface parking and place an altogether ban on "heavy" commercial uses.

Issues Affecting Downtown Plano which Led to Renewed Planning Effort:

- Eroding economic position
- Physical decline and blight
- Absentee and fragmented ownership
- Limited hours of operation
- Disconnected from surrounding neighborhoods

In 1997, Plano's city planners began to work with DART staff to determine the exact location of the planned downtown Plano station. They also analyzed how development around this station could potentially support, and benefit from, proximity to this station. The DART system formally began service in areas closer to Dallas in 1996. The experience of these stations showed the potential for stations to be catalysts for new development and reinvestment. The City of Plano understood this potential and believed that access to light rail could particularly have a positive impact on the development potential of the city-owned former shopping center next to the rail line. This site represented a 3.6 acre redevelopment opportunity. DART gave final approval to the downtown Plano station in 1998 and the city council approved the redevelopment plan a month later. After a long negotiation period, the city and DART approved a joint agreement calling for the transit agency to purchase the station property and transfer ownership of surplus land around the station to the city. Plano would then pay for the reconstruction and reconfiguration of streets, drainage, and the utilities needed to serve the station. The cost would be credited against the value of the property transferred to the city. Any shortfall would be reimbursed by DART.

The next step in the development process led the city to issue an RFP (request for proposal) to find a developer for the shopping center site adjacent to the planned station. In 1999, the city selected Amicus Partners to develop Eastside Village I, which included 234 dwelling units and 15,000 square feet of nonresidential space including two restaurants (on property leased by the City). The project offers a variety of floor plans including efficiencies, lofts, live/work spaces, and one- and two-bedroom apartment homes. A five level parking garage is surrounded by the buildings in the interior of the property, providing resident parking as well as public parking on the first level during business hours.

The project took advantage of allowances for increased



density enacted through the previous planning effort. Three and four-story buildings were built on the edge of the sidewalks and exteriors are brick with design features that recall architecture of the late 19th century. These were design elements specifically enacted as part of the downtown development plan. The eastern half of the site also contains a four-story building wrapped around three sides of a five-level parking garage. This project added nearly 500 new residents to the area adjacent to the train station and also helps to provide a physical and psychological linkage between that station and the main shopping street in downtown. The developer also stated that proximity to a transit station benefitted the overall financial potential of the project. This proximity made it easier to attract capital and also led to a faster lease-up rate.

Eastside Village I was clearly seen as a success from the perspective of the city, DART, and Amicus. However, at this time the city began rethinking how the new development would fit into an overall downtown plan. In fall of 2009, it was decided that an even larger vision for downtown redevelopment was needed. At this time, assistant city manager Frank Turner presented a report titled “A Vision and Strategy for Creating a Transit Village.” This was subsequently approved by the city council. This strategy used the 1991 plan as a foundation but placed a greater emphasis on the relationship of downtown to the DART station and transit operations. Specifically, this effort set a goal of increasing residential development by 1,000 units and building 50,000 square feet of retail space within a quarter mile of the DART station itself. This study went as far as to identify potential redevelopment sites and several incentives for implementation, including public financial assistance and reduced parking requirements.

Transit Village Strategy:

- Locate/design light rail platform to maximize benefits.
- Develop transportation linkages and parking programs.
- Redevelop key sites adding 1,000 dwelling units and 50,000 square feet retail use.
- Reinforce downtown as an arts district.
- Expand park and streetscape improvements.
- Preserve historic buildings.
- Provide incentives for reinvestment.

This study was the impetus for the establishment of a tax increment financing (TIF) district to encourage economic reinvestment in the study area. The formation of this district required cooperation and coordination between the school district, the county, and the community college. TIF funds come from increased property tax revenues from new development. These funds can be used for infrastructure, public facilities, and land within the district. Under Texas state law, municipalities also obtain broader redevelopment powers within a TIF district. TIF is commonly used by the development and banking community to bridge financing gaps, especially in areas where the cost of upgrading the infrastructure are very high.

The total appraised value of property within this TIF district increased from $307 million in 1999 to an estimated $424 million in 2002. This generated more than $1.5 million in annual revenues. Over the 15 year term of the TIF district, revenues are projected to exceed $15 million. This district is expansive and extends to all three of Plano's DART station. However, the downtown redevelopment area has been given initial priority for the use of these funds since redevelopment in this area is seen as being more critical than in the more highly development areas around the north and south Plano stations.

It is widely believed by the City that the TIF district has been instrumental in helping to achieve their vision of increased downtown housing, retail uses, as well as the city's design goals for the downtown area. One of the latest projects to be constructed close to DART in the TIF district is 15th Street Village. This includes 34 for-sale townhomes and 90 condominium units. This was the first substantial new for-sale housing construction in the downtown area since DART arrived. Currently, there is a second phase for the 15th Street Village project that is in the planning stages. Other new development includes Eastside Village II which was finished in 2002 and features 225 rental apartments and 25,000 square feet of retail. This property has achieved very high rates of occupancy. Currently, there are plans for another new townhome development, Lexington Park at Rice Field, which will include 14 new luxury eco-friendly units. This community was designed within the parameters of the transit village overly. They are branded as "new urban" townhomes since they address the streetfront, have alley-loaded parking, and are pedestrian-oriented. This project is located two blocks from the DART station.



Overall, the development spurred within the TIF district has brought the city close to reaching the long-term goal of 1,000 new housing units and 50,000 square feet of new commercial development (as set forth in the Transit Village Strategy). The incremental funds derived from the TIF have also allowed the city to invest over $2 million in streetscape and surface transportation improvements which have made the area more attractive to private investment.

Key Lessons Learned:

- DART station alone was not the only harbinger of new development.
  - Public investment (funded through TIF) and public-private partnerships seen as key.
  - Ridership projections have been surpassed without the provision of city-owned parking for transit users.
  - In beginning phases, users have been able to utilize privately-owned parking facilities within close proximity to the station.
  - Having a planning framework that promotes walkable transit-oriented development prior to the arrival of the actual light rail system was seen as very important in the creation of a “transit village”.
- Developers benefitted from transit proximity in terms of ability to attract capital to project, lease/sales period, and potentially have even achieved some price premium.
  - All these factors work to increase the financial viability of private development projects.
  - Public-private partnership can be key to creating the first truly “catalytic” project that ignites additional investment.
  - In the case of Plano, this took the form of the city offering an attractive land lease to a private developer.

Municipal Center Study (2011)
General Summary

Quantification of Space Needs for Future Municipal Center

To serve a population of 175,000 (near term of 5-7 years), approximately 150,000 square feet of building floor area is needed.

To serve a population of 350,000 (build out), approximately 225,000 square feet of building floor area is needed.

The collection of City-owned northern sites (Secondary Sites 5, 6, 7, 8, 9) comprises approximately 225,000 square feet of land area. Based on the 2011 Municipal Center Study, the northern collection of sites provides more than enough land to accommodate a variety of layouts, configurations, and phasing options for a future municipal center (in terms of 2 to 4-story building(s), surface parking, structured parking, open space, etc.) to serve a build out population of 350,000.

The future Municipal Center (City Hall) assumes consolidation of the following functions:

- Council Chambers (including a lobby and community room)
- City Manager
- City Secretary
- Legal/City Attorney
- Revenue Collections
- Risk Management
- Communications and Marketing
- Purchasing
- IT/GIS
- Development Services
- Planning
- Building
- Engineering
- Code
- Health
- Animal Control
- Human Resources
- Parks, Recreation, and Open Space Administration
- Main Street
- Community Services
- Facilities
- Meters

The future Municipal Center (City Hall) would also include the following Support Space:

- Training rooms
- Data center
- Video conferencing
- Large break room/cafeteria (included in the build out projection only)
- Fitness area and showers (included in the build out projection only)
- Video studio (included in the build out projection only)

The future Municipal Center (City Hall) would not include the following functions:

- Police
- Fire
- Public Works
- Library
- Municipal Courts

CITY OF MCKINNEY PHYSICAL SPACE REQUIREMENTS

Does not include Police, Fire, Public Works, MPAC, Library or Municipal Courts

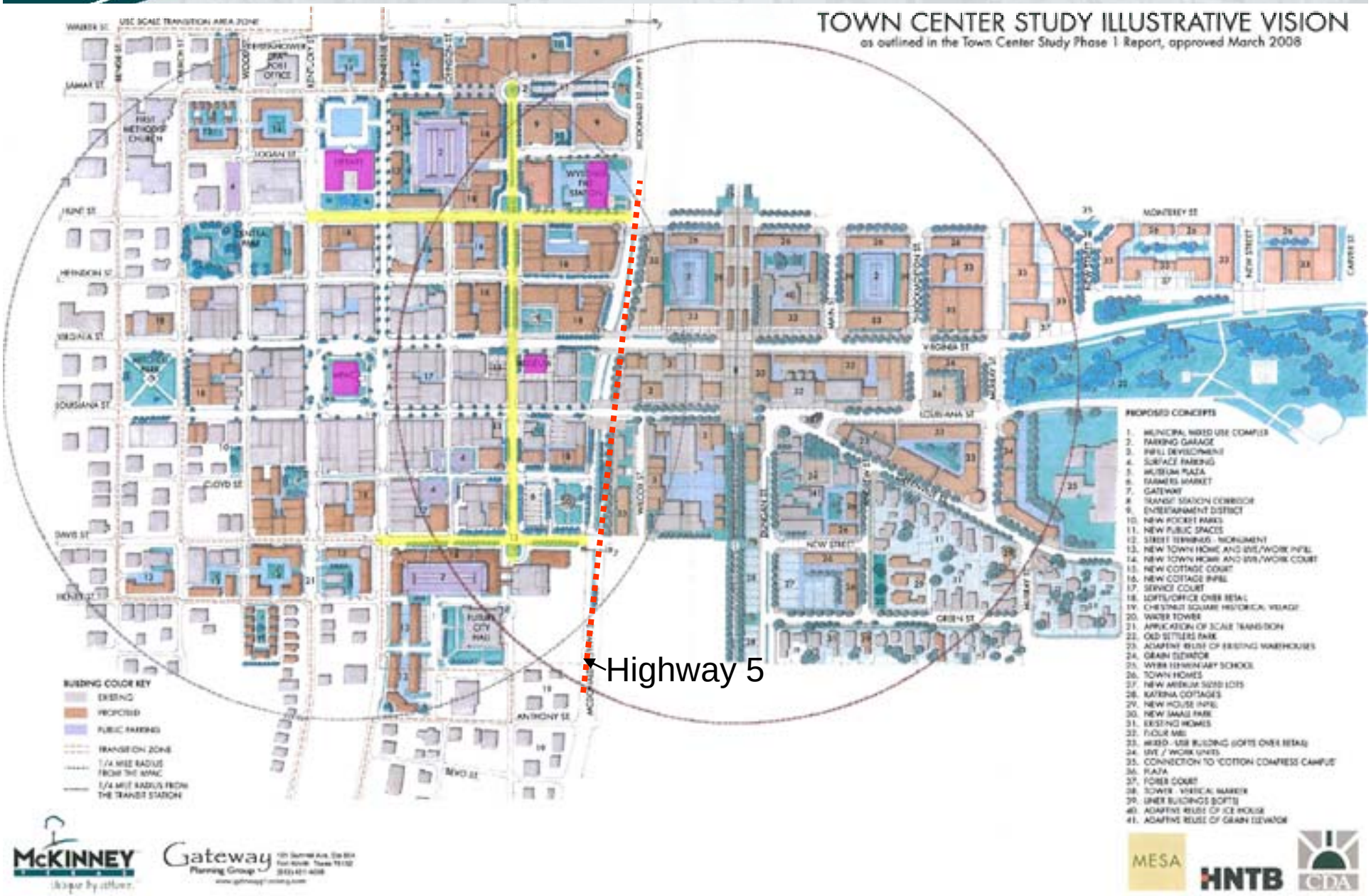
Item Description	Current Location	2007 Staff No. People 120,000 Population	2010 Staff 126,500 Population	Frozen Additive	Exst'g Area Square Feet	Exst'g Area Total Square Feet	Sufficient / Efficient / Effective Exst'g Space N=No Y=Yes	Square Feet / Person	Owned or Leased	Annual Cost if Leased	Five Year Plan Staff No. Peopl 175,000 Population	Area Square Fee	Needed Area Total Square Feet	2010 Existing Facilities Total Square Feet Sum Needed	Existing Actual	Add'l Space Needed Total Square Feet	Build-out Staff No. People 375,000 Population	Area Square Feet
	CITY HALL	**57.0**	**57.5**			**22,500**	**N/N/N**	**391**	**Owned**		**82.0**		**35,986**		**21,676**	**22,500**	**13,486**	**123.0**	
	CITY HALL - Basement		-		3,500						-	3500		3500					
Storage							N/N/N												
MDF							Y/Y/Y												
	CITY HALL - 1st Floor	27.0	29.0		13,000			448			40.0	20,646		11,991				70.0	
Public Lobby		1.0			2,500						2.0	2,500		2,500				3.0	3,500
Council Chamber / Community Room					2,100		N/N/N					3,850		3,850					10,000
City Manager		7.0	9.0		4,300		Y/Y/Y				10.0	5,466		5,466				12.0	7,500
Records Storage					875		N/N/N					4,461				4,461			1,800
Legal/City Attorney		1.0	1.0		175		Y/Y/Y				1.0	175		175				8.0	3,200
Revenue Collections		8.0	9.0	in OC	1,750		N/N/N	92			14.0	3,264				3,264		22.0	4,400
Meters	now in Old Central	10.0	10.0	in OC	incl above		N/N/N				13.0	930				930		25.0	2,500
	CITY HALL - 2nd Floor	30.0	28.5		6,000			211			42.0	11,840		6,185				53.0	
Finance		17.5	16.5		2,660		N/N/N	152			23.0	5,655				5,655		32.0	9,500
Risk Management		2.0	1.0				N/N/N	incl above			2.0							1.0	
City Secretary		3.5	4.0		873		Y/Y/Y				8.0	1,780		1,780				10.0	3,000
Communications & Marketing		7.0	7.0		incl above		Y/Y/Y				9.0	4,405		4,405				10.0	3,000
	STORAGE - CITY SECRETARY					**1,800**			**Leased**	**$ 18,000**	**-**		**2,400**		**2,400**	**1,800**	**2,400**		
Storage - City Secretary	Advantage Storage				1,800		N/N/N					2,400		2,400					2,500
	PURCHASING	**7.0**	**7.0**			**6,000**		**857**	**Owned**		**11.0**		**7,486**		**7,486**	**6,000**	**1,486**	**16.0**	
Purchasing		7.0	7.0		2,100		N/N/N	300			8.0	2,486		2,486				11.0	3,300
Purchasing Warehouse					1,500		N/N/N				3.0	5,000		5,000				5.0	7,500
PARD Administration	now in LaCima																		
	PARKS - LA CIMA - CAREY COX	**7.5**	**11.0**			**4,252**		**387**	**Owned**		**16.0**		**6,000**		**6,000**	**4,252**	**1,748**	**16.0**	
Conference Rooms					708		Y/Y/Y					708		708					1,500
PARD Administration		7.5	11.0		3,544		Y/Y/Y	322			16.0	5,292		5,292				16.0	5,600
	STORAGE - PARKS					**600**			**Leased**	**$ 7,200**	**-**		**600**		**600**	**600**	**600**		
Storage - Parks	UStoreIt - 1 CC +1 NCC AllHaul - 1 CC		3 - 10x20's		600		Y/Y/Y					600		600					
	INDUSTRIAL BLVD	**23.0**	**24.5**			**10,020**		**409**	**Leased**	**$ 120,000**	**39.0**		**15,147**		**12,531**	**10,020**	**5,127**	**50.0**	
Information Technology		16.0	18.5				Y/Y/Y				31.0	7,304		7,304				40.0	10,000
Storage/MDF/Make-ready							N/N/N					3,529		913		2,616			5,000
Training/Shared Spaces							N/N/N					1,500		1,500					4,500
GIS		7.0	6.0				Y/Y/Y				8.0	2,814		2,814				10.0	4,500
	DEVELOPMENT SERVICES	**94.0**	**90.5**			**22,300**		**246**	**Owned**		**119.0**		**37,514**		**27,329**	**22,300**	**15,214**	**125.0**	
	DEV SERV - 1st Floor	54.0	53.5		11,300			211			69.0	18,690		8,505				83.0	
Planning		19.0	18.5	1FT			Y/Y/Y				20.0	8,505		8,505				23.0	11,000
Planning Files / Support							N/N/N					2,500							2,500
Building Inspection		35.0	32.0	1FT			Y/Y/Y				46.0	7,074				7,074		55.0	9,600
Green Team			3.0				Y/Y/Y				3.0	611				611		5.0	2,500
	DEV SERV - 2nd Floor	40.0	37.0		11,000			297			50.0	18,824		18,824				42.0	
Development Services		6.0	7.0	1FT			Y/Y/Y				6.0	3,386		3,386				7.0	3,500
Conference Rooms					843		N/N/N					1,500		1,500		1,500			2,500
Engineering Files / Support							N/N/N					3,485		3,485		3,485			2,500
Engineering		34.0	30.0	3FT/2SI			Y/Y/Y				44.0	10,453		10,453				35.0	14,000
	ANNEX B	**32.5**	**32.0**			**9,250**		**289**	**Owned**		**47.0**		**11,998**		**9,325**	**9,250**	**2,748**	**76.0**	
Code Services		11.0	12.0	1FT	3,000		Y/Y/Y				18.0	4,447		4,447				30.0	5,500
Animal Control		5.0	4.0		incl above		Y/Y/Y				6.0	458		458				12.0	1,800
Human Resources		7.0	7.0		1,500		Y/Y/Y				10.0	3,699		3,699				18.0	5,400
Main Street		2.0	2.0	in OC			Y/Y/Y				4.0	721		721				6.0	1,200
Community Services		7.5	7.0	2FT	3,200		Y/Y/Y				9.0	2,673				2,673		10.0	3,200
	OLD CENTRAL FS - w/ Bay	**8.0**	**9.0**			**6,000**		**667**	**Owned**		**11.0**		**6,679**		**6,000**	**6,000**	**679**	**18.0**	
Facilities		8.0	9.0		650		Y/Y/Y				11.0	1,329		1,200		129		18.0	3,200
Offices / Open Area / Meters					1,400		Y/Y/Y					1,400		1,400					2,500
Kitchen / Locker Rooms					400		Y/Y/Y					400		400					1,200
Storage					550		Y/Y/Y					550				550			4,500
Storage - Apparatus Bay					3,000		Y/Y/Y					3,000		3,000					
Support Space	**SUPPORT SPACE**										**-**		**10,101**		**-**	**-**	**10,101**		
Cafeteria / Large Break Room							N/N/N												4,200
Fitness Area / Work Out / Showers							N/N/N												7,500
Photography / Video Studio							N/N/N												4,000
Training/Shared Spaces							N/N/N					4,399				4,399			4,400
Video Conferencing / Support /Common							N/N/N					1,535				1,535			1,800
Data Center / Support / Common							N/N/N					4,167				4,167			3,500
Net Subtotal		222.0	224.5		65,828	82,722					**314.0**	133,911	**133,911**		**93,347**	**82,722**	**53,589**	**408.0**	**194,800**
Net Subtotal w/o Leased						70,302							115,764		77,816	70,302	45,462		
5% Add'l Circulation Factor	5%					n/a						6,696					2,679		9,740
Totals		222.0	224.5		65,828	82,722					**314.0**	140,607					**56,268**	**408.0**	**204,540**
Contingency	10%					n/a						14,061					5,627		20,454
TOTALS		**222.0**	**224.5**		**65,828**	**82,722**					**314.0**	**154,667**					**61,895**	**408.0**	**224,994**
TOTALS OF CURRENT LEASED SPACE ONLY		-	-		-	**12,420**				**$ 145,200**		**13,020**							

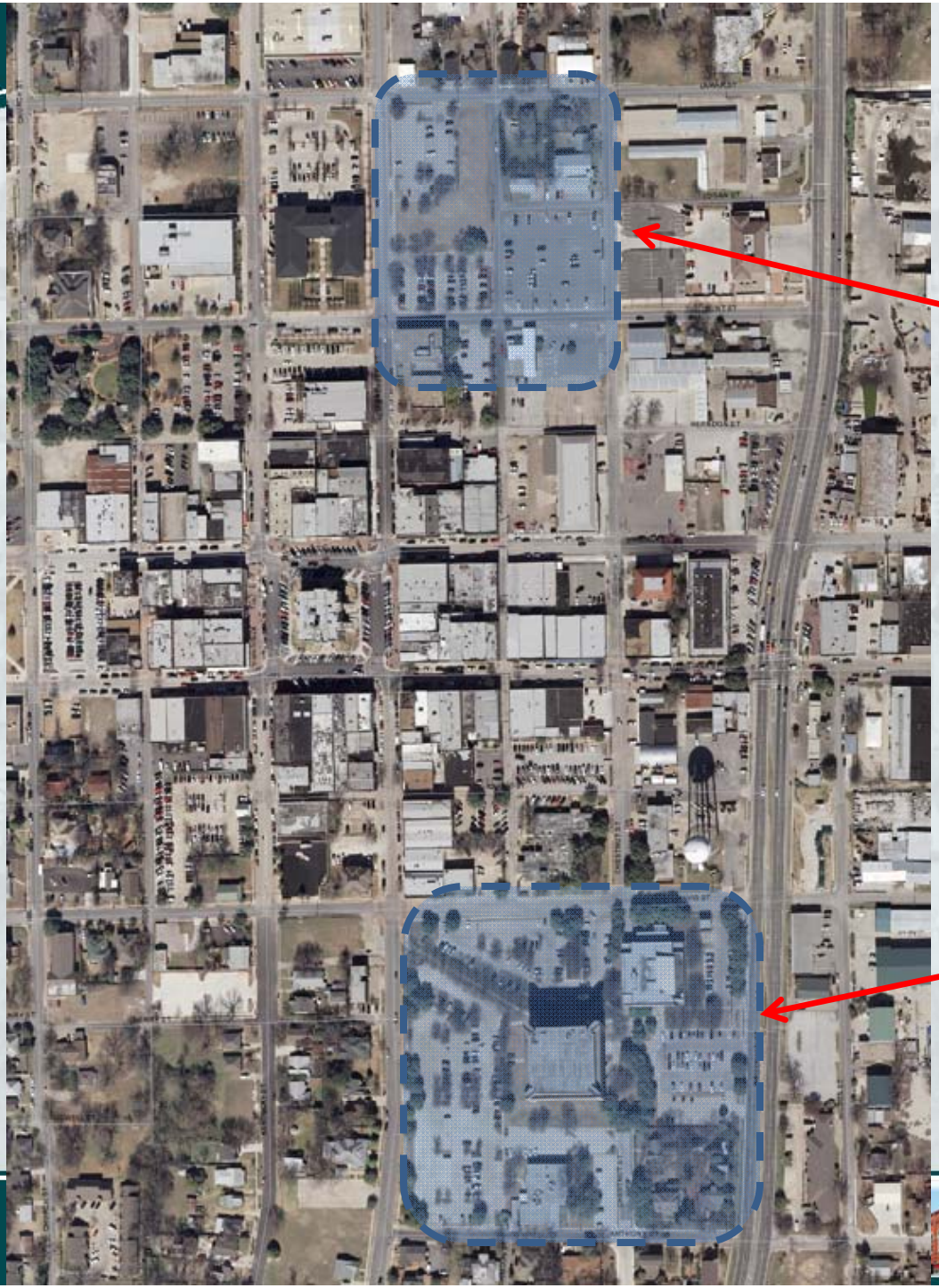
Municipal Center Study

February 1, 2011

Brinkley Sargent Architects




TOWN CENTER STUDY ILLUSTRATIVE VISION
as outlined in the Town Center Study Phase 1 Report, approved March 2008
Highway 5
BUILDING COLOR KEY
EXISTING
PROPOSED
PUBLIC PARKING
TRANSITION ZONE
1/4 MILE RADIUS FROM THE MIAC
1/4 MILE RADIUS FROM THE TRANSIT STATION
PROPOSED CONCEPTS
1. MUNICIPAL MIXED USE COMPLEX
2. PARKING GARAGE
3. INFILL DEVELOPMENT
4. SURFACE PARKING
5. MUSEUM PLAZA
6. FARMERS MARKET
7. GATEWAY
8. TRANSIT STATION CORRIDOR
9. ENTERTAINMENT DISTRICT
10. NEW POCKET PARKS
11. NEW PUBLIC SPACES
12. STREET TERMINUS - MONUMENT
13. NEW TOWN HOME AND LIVE/WORK INFILL
14. NEW TOWN HOME AND LIVE/WORK COURT
15. NEW COTTAGE COURT
16. NEW COTTAGE INFILL
17. SERVICE COURT
18. LOFTS/OFFICE OVER RETAIL
19. CHESTNUT SQUARE HISTORICAL VILLAGE
20. WATER TOWER
21. APPLICATION OF SCALE TRANSITION
22. OLD SETTLERS PARK
23. ADAPTIVE REUSE OF EXISTING WAREHOUSES
24. GRAIN ELEVATOR
25. WEBB ELEMENTARY SCHOOL
26. TOWN HOMES
27. NEW MEDIUM SIZED LOTS
28. KATRINA COTTAGES
29. NEW HOUSE INFILL
30. NEW SMALL PARK
31. EXISTING HOMES
32. FLOUR MILL
33. MIXED - USE BUILDING (LOFTS OVER RETAIL)
34. LIVE / WORK UNITS
35. CONNECTION TO 'COTTON COMPRESS CAMPUS'
36. PLAZA
37. FOREST COURT
38. TOWER - VERTICAL MARKER
39. LINER BUILDINGS (LOFTS)
40. ADAPTIVE REUSE OF ICE HOUSE
41. ADAPTIVE REUSE OF GRAIN ELEVATOR
McKINNEY
Gateway Planning Group
MESA
HNTB
CDA



North
Downtown Site

South
Downtown Site

McKINNEY
TEXAS
Unique by nature.

North Downtown Site Options

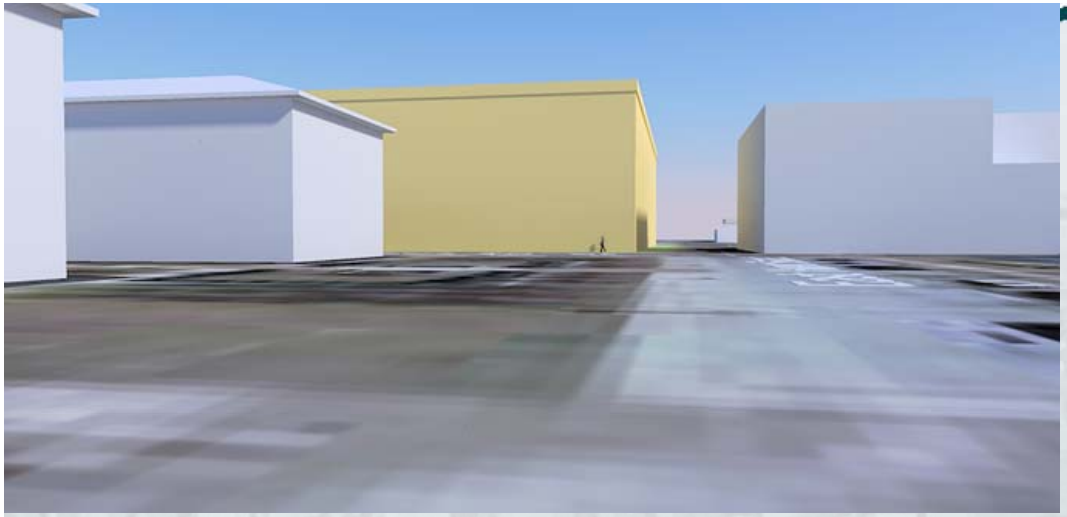


BRINKLEY SARGENT ARCHITECTS

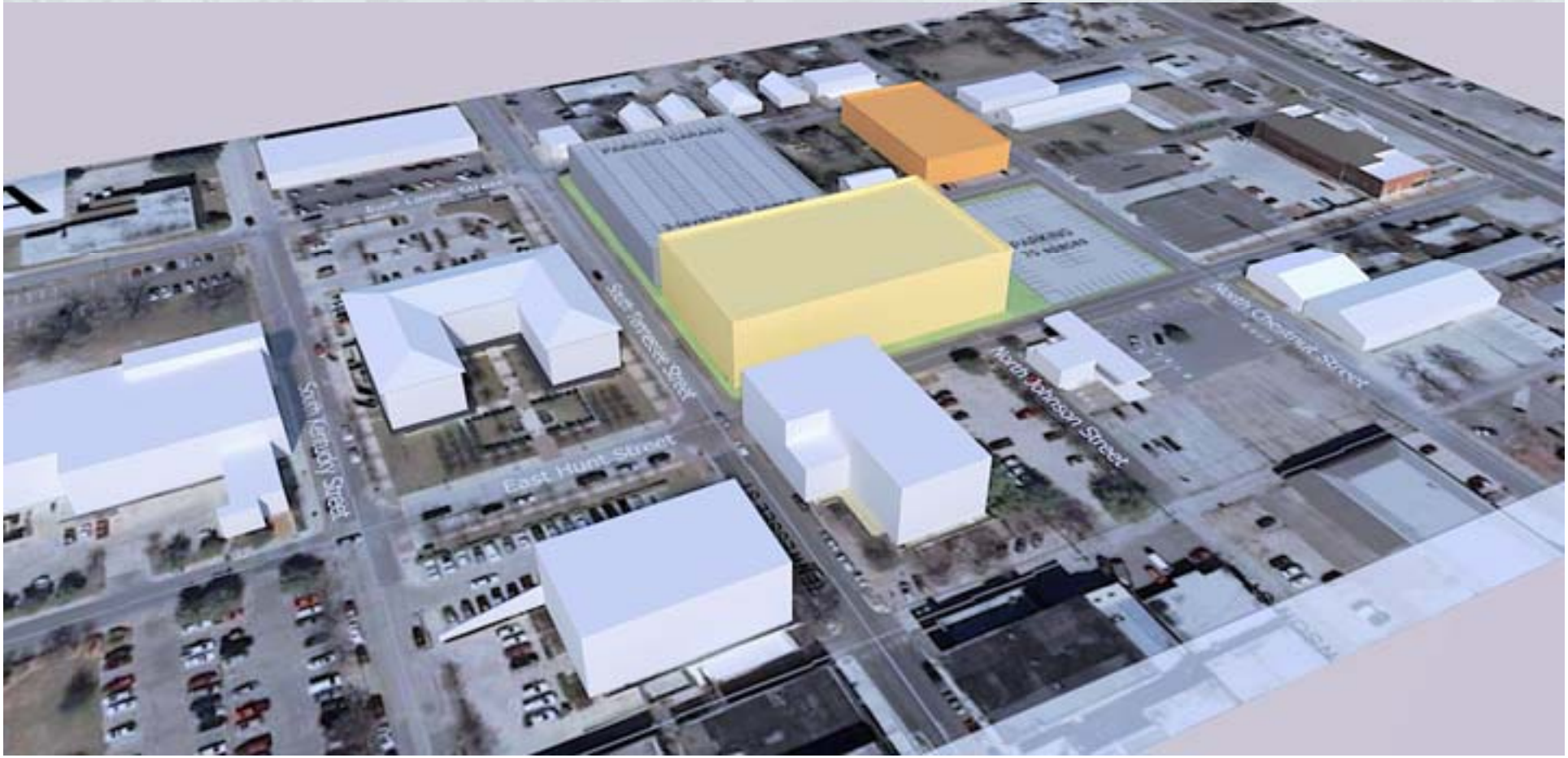
4-story City Hall/3-story Garage

McKINNEY TEXAS
Unique by nature.





Option A



A2

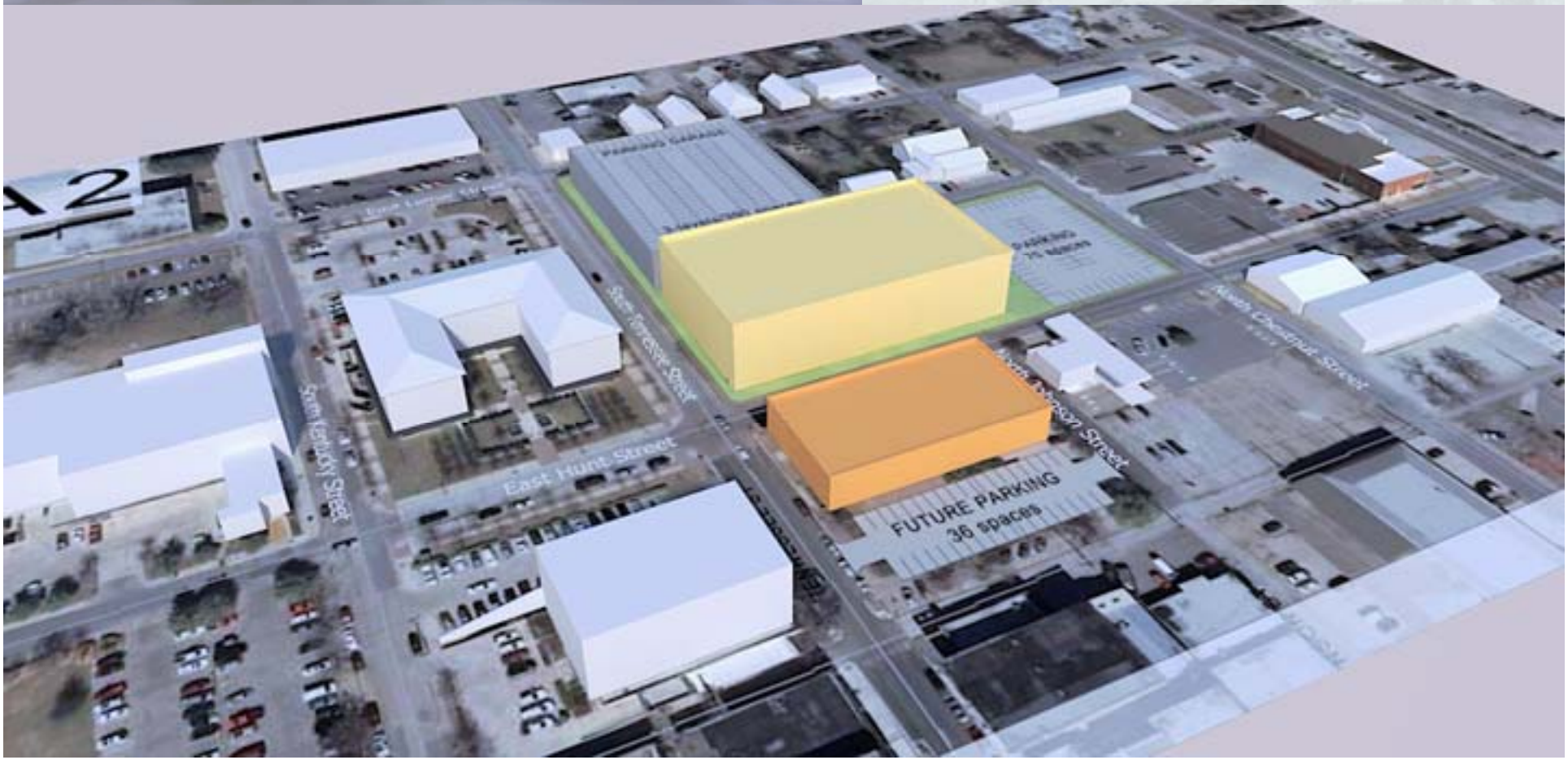
BRINKLEY SARGENT ARCHITECTS

4-story City Hall/3-story Garage

McKINNEY TEXAS
Unique by nature.



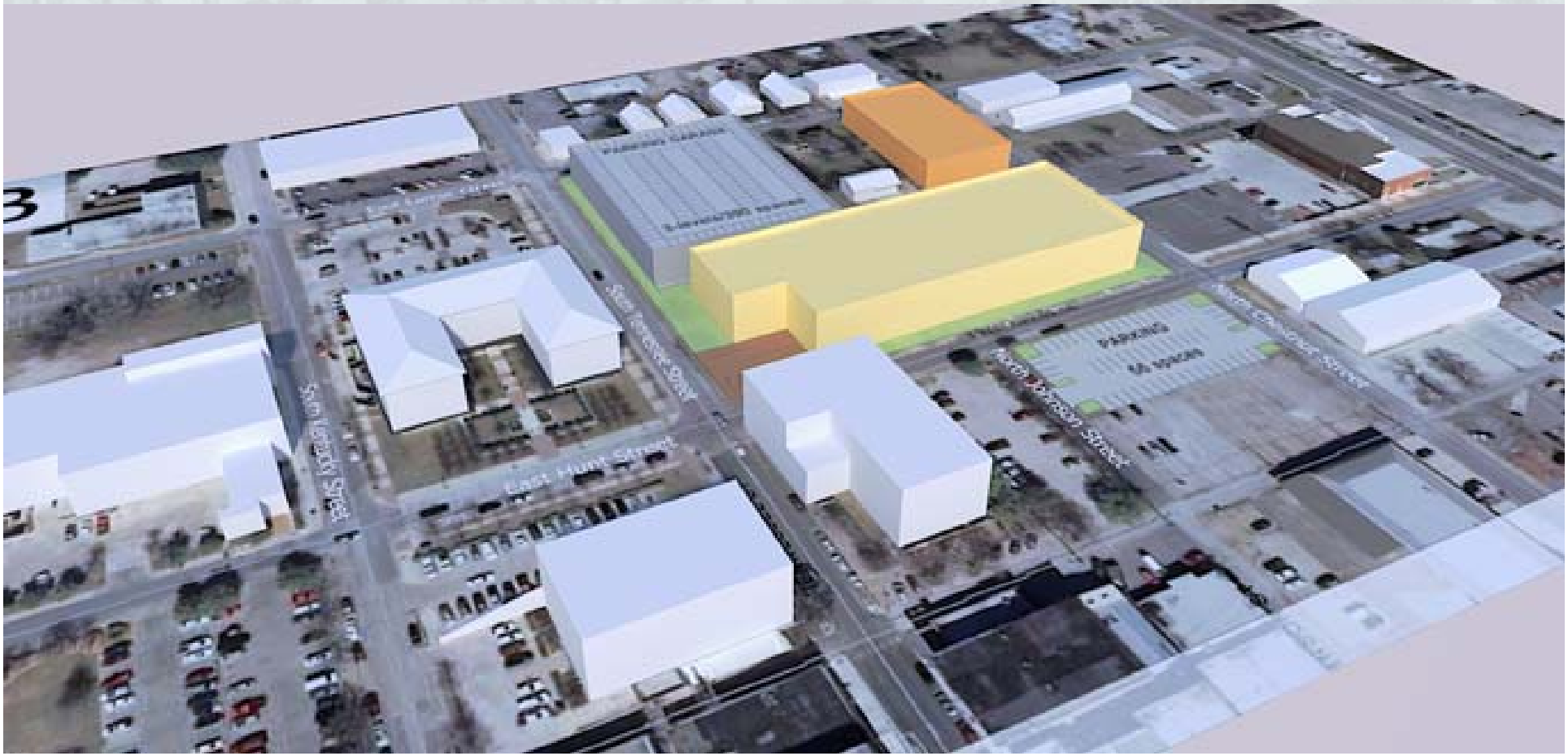
Option A2




B
PARKING GARAGE
3-levels/390 spaces
JOHNSON ST
FUTURE
COURTS
36,000 SF
2-story building
18,000 s.f. per floor
LAMAR ST
LOGAN ST
LOGAN ST
CITY HALL
150,000 SF
3-story building
50,000 s.f. per floor
STREET PARKING (16)
HUNT ST
PARKING
56 spaces
TENNESSEE ST
WOOD ST
HERNDON ST
BRINKLEY SARGENT
ARCHITECTS
N
3-story City Hall/3-story Garage



Option B



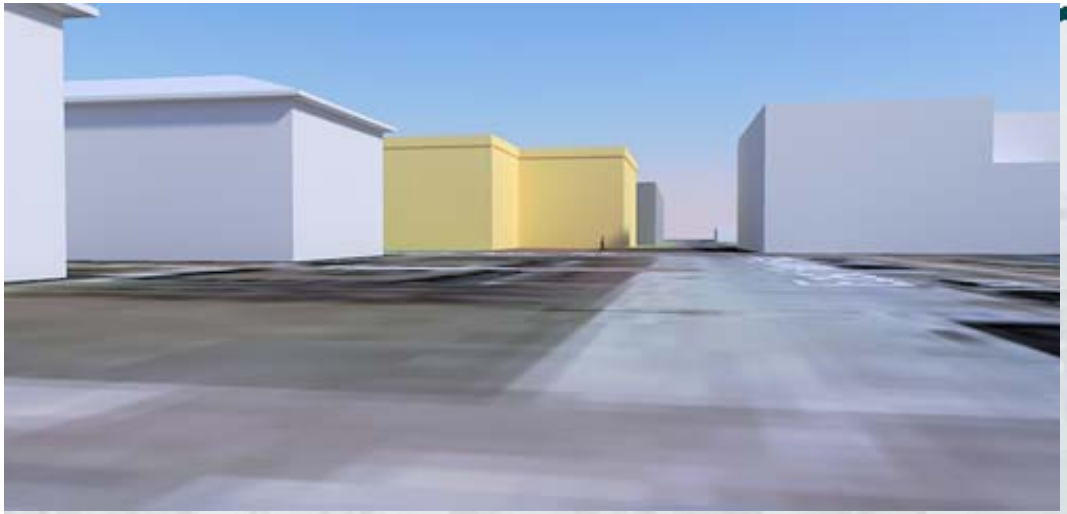
B2

BRINKLEY SARGENT ARCHITECTS

3-story City Hall/3-story Garage

McKINNEY TEXAS
Unique by nature.





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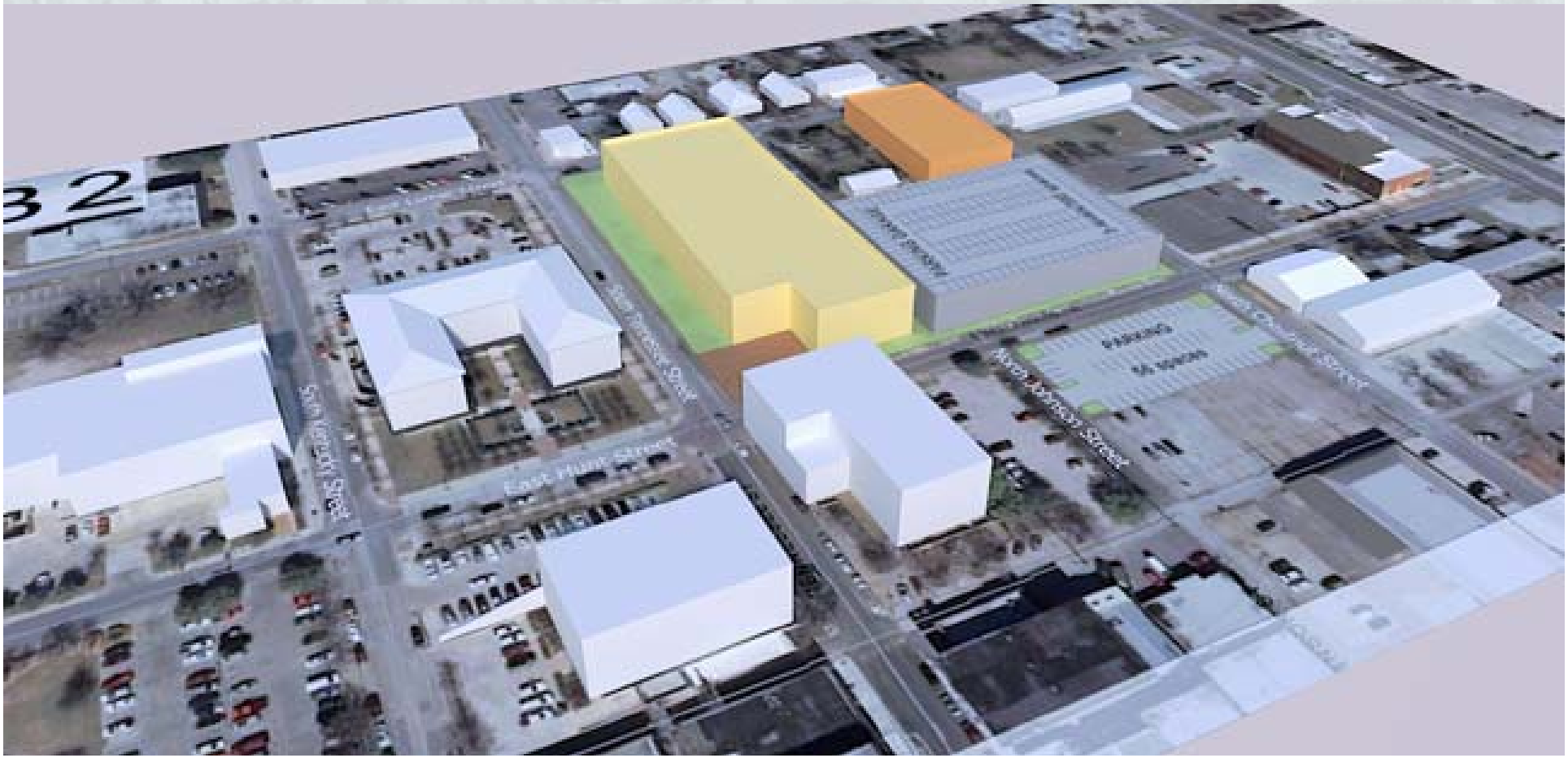
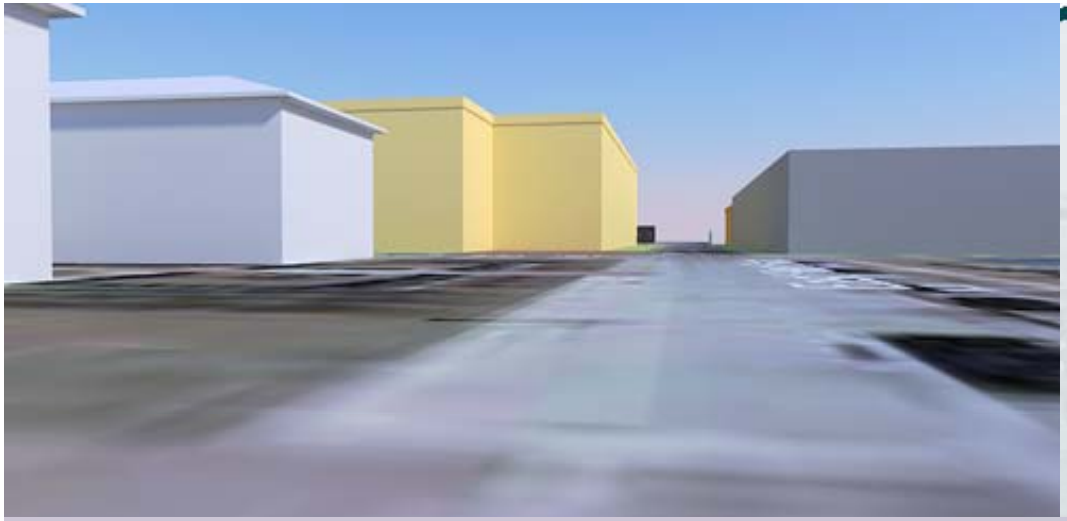
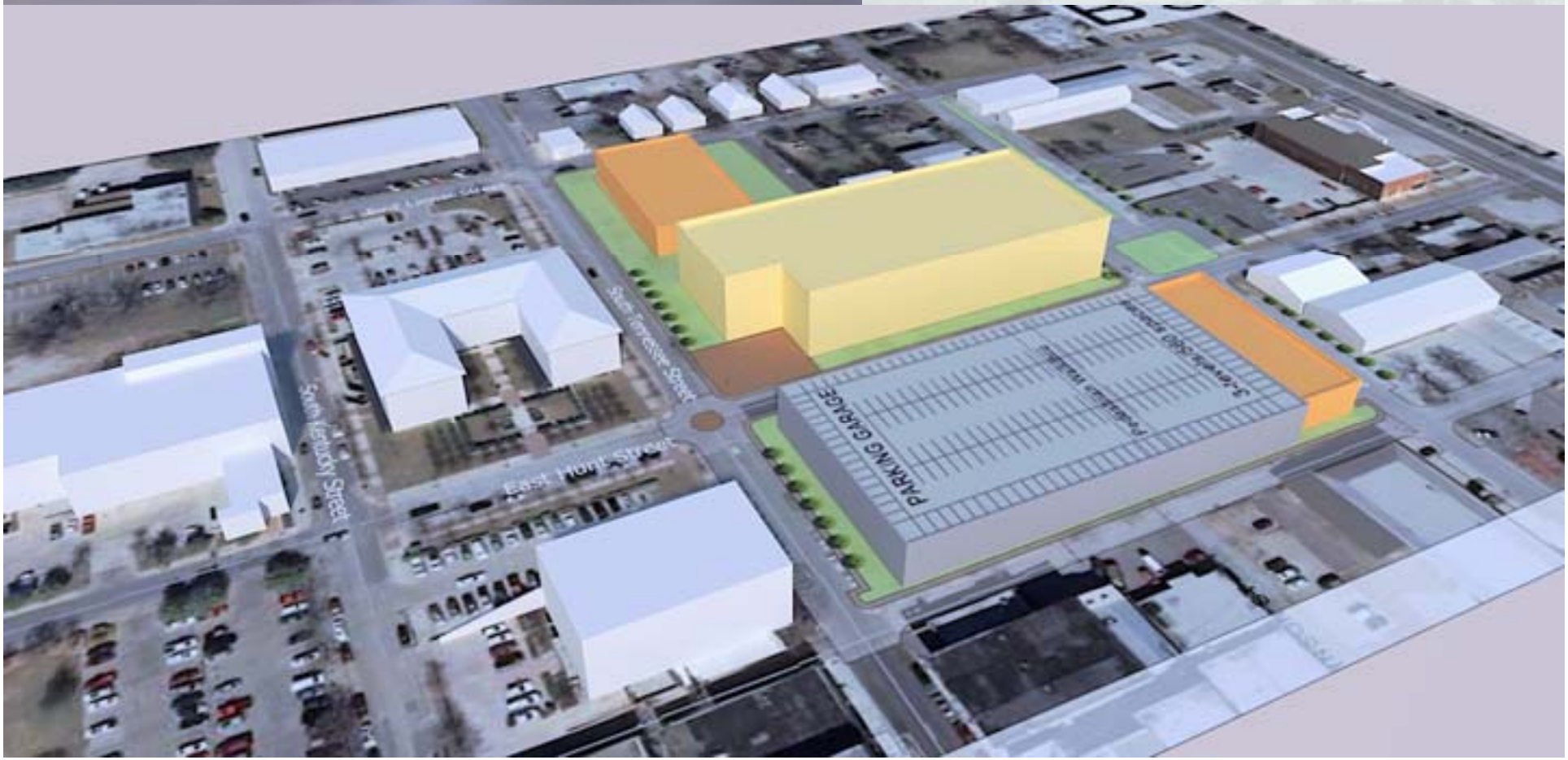



B 3
LAMAR ST
LOGAN ST
LOGAN ST
JOHNSON ST
FUTURE COURTS
36,000 SF
2-story building
18,000 s.f. per floor
CITY HALL
150,000 SF
3-story building
50,000 s.f. per floor
HUNT ST
PARKING GARAGE
Pedestrian Walkthru
3-levels/560 spaces
Future Retail
TENNESSEE ST
WOOD ST
HERNDON ST
BRINKLEY SARGENT
ARCHITECTS
N
3-story City Hall/3-story Garage



Option B3

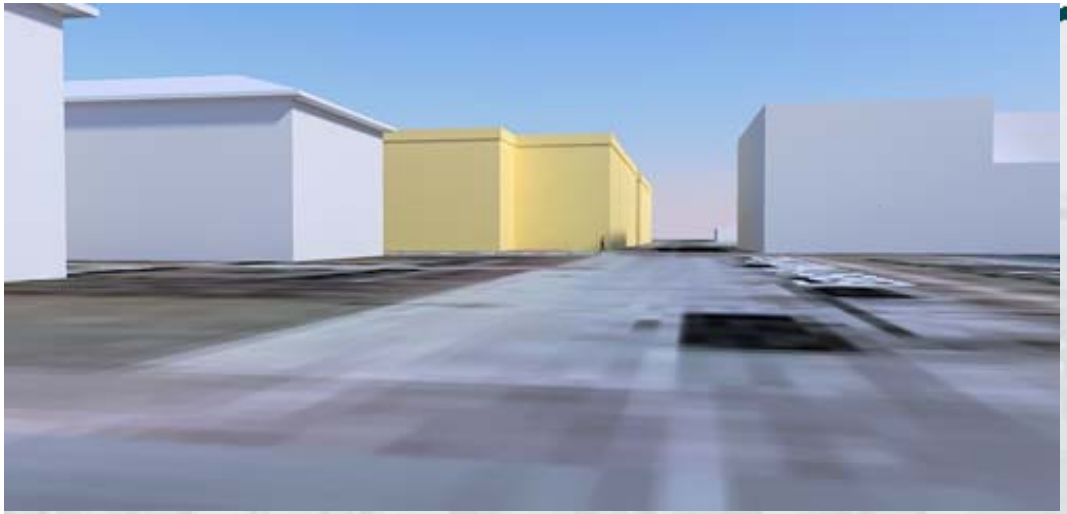


BRINKLEY SARGENT ARCHITECTS

3-story City Hall/3-story Garage

McKINNEY TEXAS
Unique by nature.





Option C


South Kentucky Street
East Hunt Street
North Johnson Street

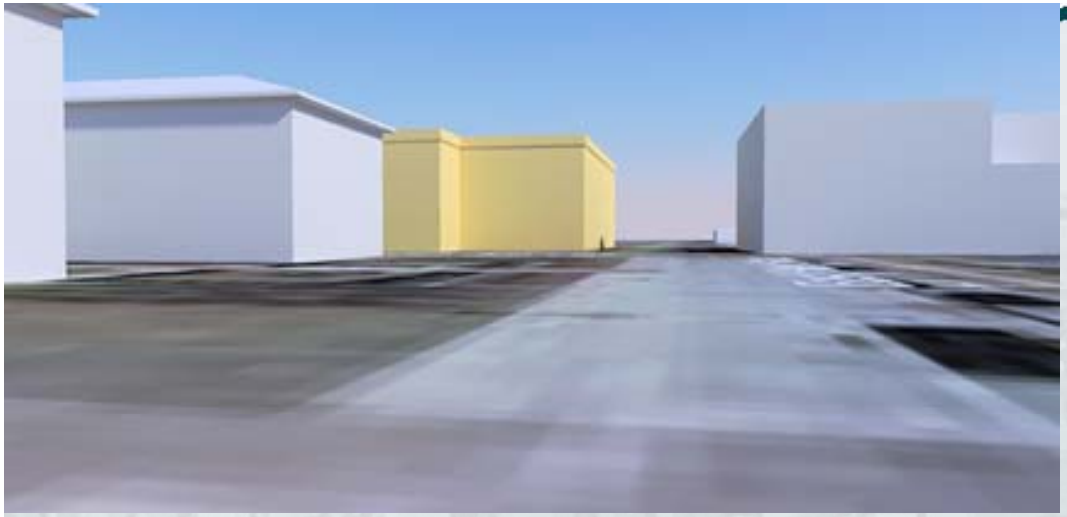
D 1

BRINKLEY SARGENT ARCHITECTS

Phase I - 3-story City Hall/Surface Parking

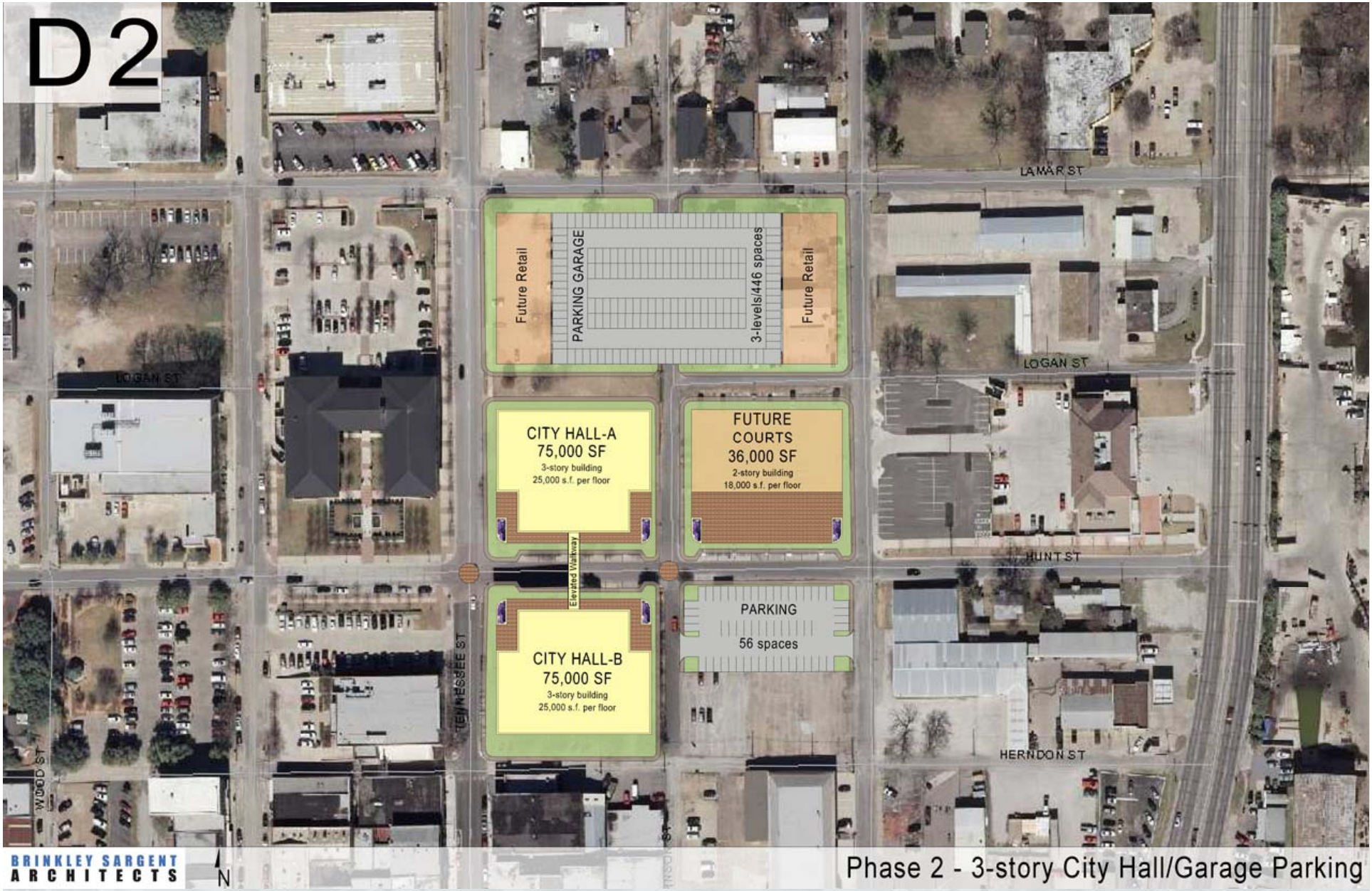
McKINNEY TEXAS
Unique by nature.





Option D1

D2



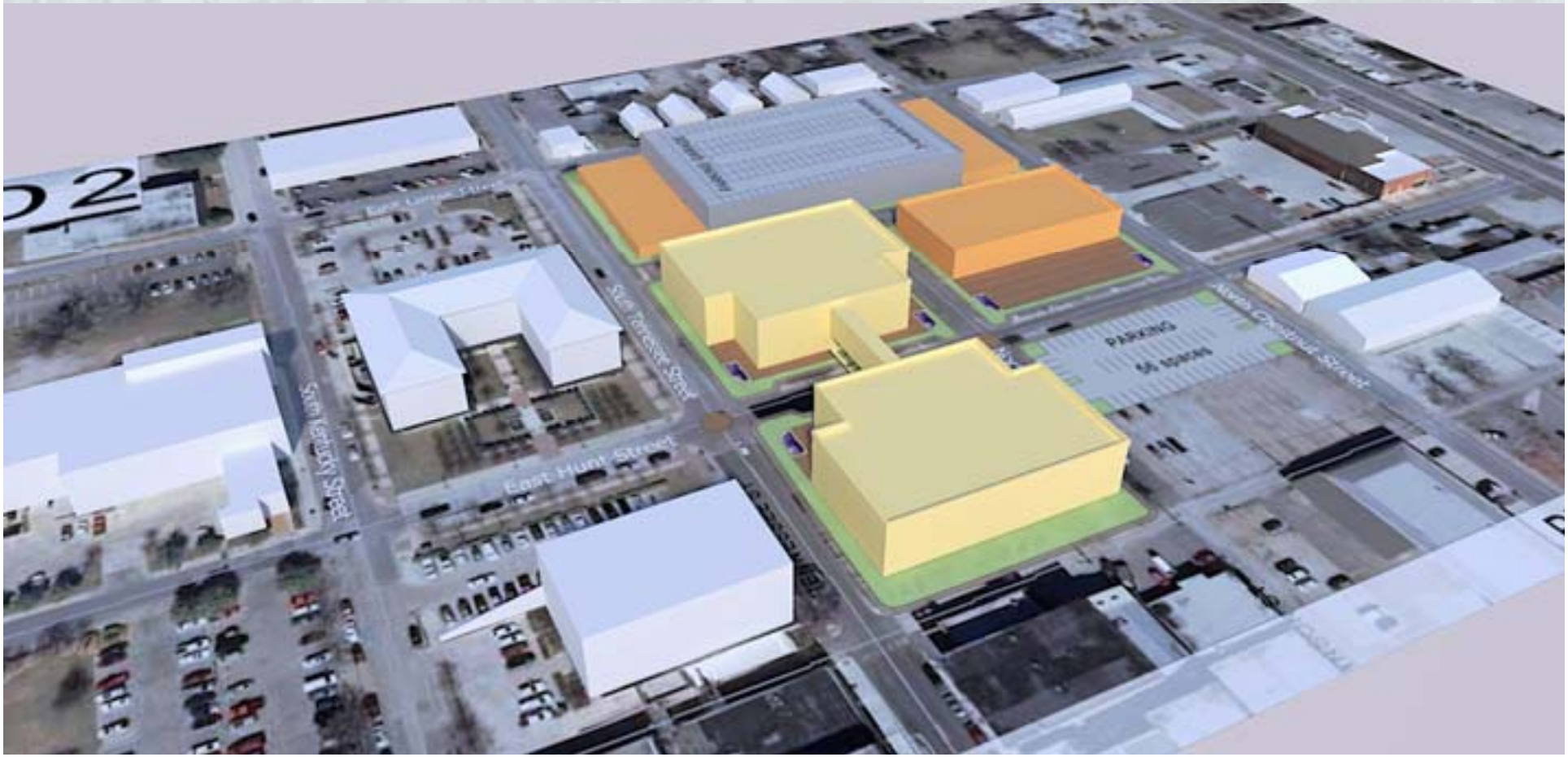
BRINKLEY SARGENT ARCHITECTS

Phase 2 - 3-story City Hall/Garage Parking

McKINNEY TEXAS
Unique by nature.

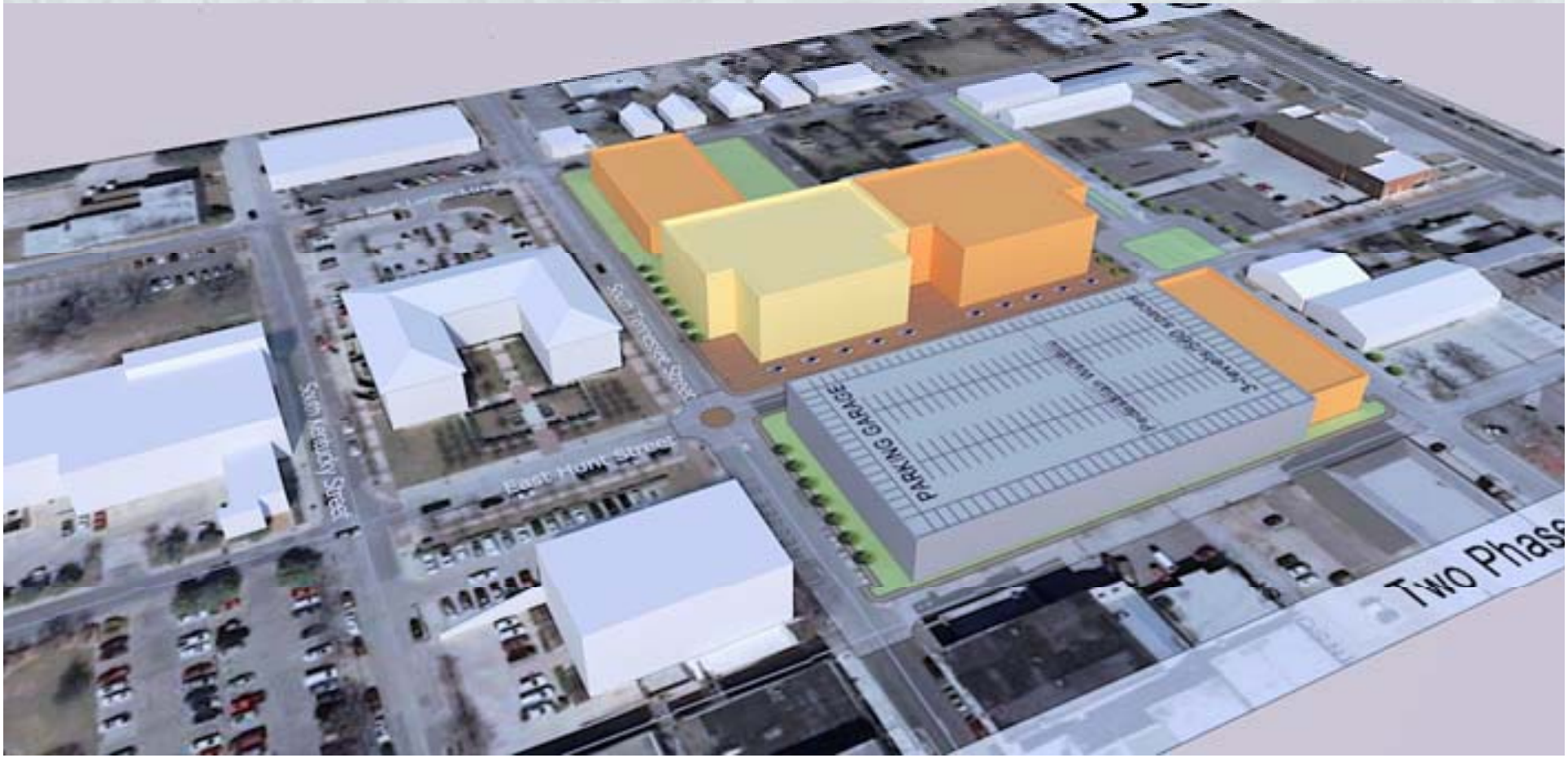


Option D2



McKINNEY
TEXAS
Unique by nature.

Option D3



South Downtown Site Options




E
CHESTNUT ST
DAVIS ST
RETAIL/PARKING
FUTURE
COURTS
36,000 SF
2-story building
18,000 s.f. per floor
CITY HALL
150,000 SF
4-story building
37,500 s.f. per floor
Existing Parking
~68 spaces
MCDONALD ST
WILCOX ST
KENTUCKY ST
PARKING GARAGE
Retail
Retail
3-levels 390 spaces total
CHESTNUT ST
ANTHONY ST
BRINKLEY SARGENT
ARCHITECTS
N
4-story City Hall/3-story Garage

Option E

E2

BRINKLEY SARGENT ARCHITECTS

3-story City Hall/3-story Garage

McKINNEY TEXAS
Unique by nature.



Option E2


F
CLOVD ST
CHESTNUT ST
AVIS ST
Piaza
FUTURE
COURTS
36,000 SF
2-story building
18,000 s.f. per floor
CITY HALL
150,000 SF
2-story building
75,000 s.f. per floor
RY ST
KENTUCKY ST
Existing Parking
~68 spaces
MCDONALD ST
WILCOX ST
PARKING GARAGE
Retail
Retail
3-leveis 390 spaces total
CHESTNUT ST
ANTHONY ST
BRINKLEY SARGENT
ARCHITECTS
N
2-story City Hall/3-story Garage

Option F


G
CHESTNUT ST
DAVIS ST
Plaza
RETAIL/PARKING
CITY HALL
150,000 SF
3-story building
50,000 s.f. per floor
PARKING - 58 spaces
PARKING GARAGE
Retail
3-levels 390 spaces total
FUTURE
COURTS
36,000 SF
2-story building
18,000 s.f. per floor
KENTUCKY ST
MCDONALD ST
WILCOX ST
CHESTNUT ST
ANTHONY ST
BRINKLEY SARGENT
ARCHITECTS
N
3-story City Hall/3-story Garage

Option G

G

CLOUD ST

CHESTNUT ST

DAVIS ST

WOOD ST

HENRY ST

KENTUCKY ST

MCDONALD ST

WILCOX ST

ANTHONY ST

RETAIL/PARKING

Plaza

CITY HALL
150,000 SF
3-story building
50,000 s.f. per floor

PARKING - 58 spaces

FUTURE
COURTS
36,000 SF
2-story
18,000 s.f.
per floor

PARKING GARAGE
3-levels 390 spaces total

BRINKLEY SARGENT
ARCHITECTS

N

3-story City Hall/3-story Garage

H

CLOVD ST

CHESTNUT ST

DAVIS ST

RY ST

KENTUCKY ST

PARKING GARAGE

3-levels 390 spaces total

CITY HALL
150,000 SF
4-story building
37,500 s.f. per floor

FUTURE
COURTS
36,000 SF
2-story
18,000 s.f.
per floor

Existing Parking
~68 spaces

MCDONALD ST

WILCOX ST

CHESTNUT ST

ANTHONY ST

BRINKLEY SARGENT
ARCHITECTS

N

4-story City Hall/3-story Garage

City of McKinney RFP: Redevelopment of City-Owned Downtown Properties
Density Considerations

As outlined in the attached Exhibit A, there are many different considerations for defining and measuring density; however, for the purposes of providing a general comparison of densities that are relatively easy to calculate, this memo utilizes "net residential dwelling density" (dwelling units per net acre).

Citywide and Surrounding Cities

The net residential dwelling density across the entire City of McKinney is approximately 5.2 dwelling units per acre. For comparison purposes, the City of Frisco is approximately 5.4 dwelling units per acre, and the City of Allen is approximately 5.0 dwelling units per acre.

MTC – McKinney Town Center Zoning District

Net acreage: Excluding public rights-of-way, railroad rights-of-way, public parks, and floodplain, the net acreage of the MTC zoning district is 190 acres.

Current density: Today, there are 187 dwelling units in the MTC zoning district. These units are comprised of 116 single family units, 14 units in seven duplex buildings, 3 units in one triplex building, 4 units in one quadplex building, 12 units in one multi-family development, and 38 mobile homes. Thus, the current net residential dwelling density in the MTC zoning district is 0.98 dwelling units per acre.

Future density (without regional passenger rail): Based on the Market Feasibility Analysis (2009) of the timing/scope of the market absorption of the Town Center vision and master plan, approximately 1,000 dwelling units are projected in the MTC zoning district without the arrival of regional passenger rail transit. These units would be comprised of a mix of single family detached units, single family attached units (townhomes), duplexes, live/work units, and multi-family units. Thus, the future net residential dwelling density in the MTC zoning district (without regional passenger rail) would be 5.26 dwelling units per acre.

Future density (with regional passenger rail): Based on the Market Feasibility Analysis (2009) of the timing/scope of the market absorption of the Town Center vision and master plan, approximately 2,000 dwelling units are projected in the MTC zoning district with the arrival of regional passenger rail transit. Thus, the future net residential dwelling density in the MTC zoning district (with the arrival of regional passenger rail) would be 10.52 dwelling units per acre in the MTC zoning district.

Primary Site only

Net acreage: The gross acreage of the Primary Site is 8.67 acres.

Based on the development proposal from InTown Homes, the net acreage of the portion of the Primary Site designated for residential uses is approximately 4.7 acres.

Based on the development proposal from Zenstar Development, the net acreage of the portion of the Primary Site designated for residential uses is approximately 3.3 acres.

Current density: Currently, there are no dwelling units located on the Primary Site. Thus, the current net residential dwelling density of the Primary Site is 0.0 dwelling units per acre.

Proposed density:
Based on the development proposal from InTown Homes, approximately 320 dwelling units (combination of apartments and townhomes) would be located on the Primary Site. Thus, the proposed net residential dwelling density of the Primary Site for the InTown Homes proposal would be approximately 68 dwelling units per acre.

Based on the development proposal from Zenstar Development, approximately 150 dwelling units (apartments) would be located on the Primary Site. Thus, the proposed net residential dwelling density of the Primary Site for the Zenstar Development proposal would be approximately 46 dwelling units per acre.

Density of Similar Developments in North Texas Cities

Mockingbird Station (Dallas): 36 dwelling units per acre

Addison Circle (Addison): 55 dwelling units per acre

Eastside Village I (Plano): 65 dwelling units per acre

Times Square at Craig Ranch (McKinney): 70 dwelling units per acre

Eastside Village II (Plano): 73 dwelling units per acre

EXHIBIT A

Design Center for American Urban Landscape
Design Brief, Number 8/ July 2003

Measuring Density: Working Definitions for Residential Density and Building Intensity

Ann Forsyth, Director

November 2003

cala umn
UNIVERSITY OF MINNESOTA

Measuring Density: Working Definitions for Residential Density and Building Intensity

Ann Forsyth, Director

Overview

Density is a controversial term. Increased density is feared by those who imagine ugly buildings, overshadowed open space, parking problems, and irresponsible residents. It is promoted by those who value urbane streetscapes, efficient infrastructure supply, walkable neighborhoods, and increased housing options.

However, within these debates is a surprising lack of clarity about what counts when considering density, and about how to measure it. This design brief outlines a number of general considerations in measuring density and then proposes twenty measures that quantify different aspects of place such as residential population and dwelling density, and the intensity of building on a site. Some of the measures are easy to use in practice, and some more difficult. All focus on residential areas. While some can be applied to other kinds of uses of land the translation is not always direct. Indicators of density in mixed use environments are particularly lacking.

Key Points

- Density is a number of units--people, dwellings, trees, square feet of building--in a given land area.

- Density varies greatly depending on the base land area used in the density calculation. The parcel or site density is almost always higher than the neighborhood density, because at a neighborhood scale much land is included in the base land area calculation that does not have houses.

- Population density depends on both dwelling unit density and household size. Given a certain dwelling unit density, the population density will be lower with small households such as empty nesters than with large families with several children.

- Intensity of building development is measured with several physical indicators related to how much built area there is on the site. Most measure building bulk and are quite crude. More important issues of design quality are much more difficult to quantify.

For more detail, supporting facts, and references read on.....

Terminology

Density is a much used term. At its simplest, **density is a number of units in a given area**. However, there are no agreed-upon standard definitions of density, rather each location and profession has come up with an idiosyncratic view.

A key area of difference and confusion is in the **base land area calculation**—what is included and what is excluded to make density figures truly comparable. Is it only the site or the entire neighborhood? This is the key dimension of variation in the range of density definitions in Part A of the working definitions section of this paper. Practically it results in a huge variation in density as can be seen below in the table. These densities are for a hypothetical site set in an area where each residential area has the same site density in dwelling units (DUs) per acre but different density definitions lead to very different measures. (The different kinds of density are explained in the next section.)

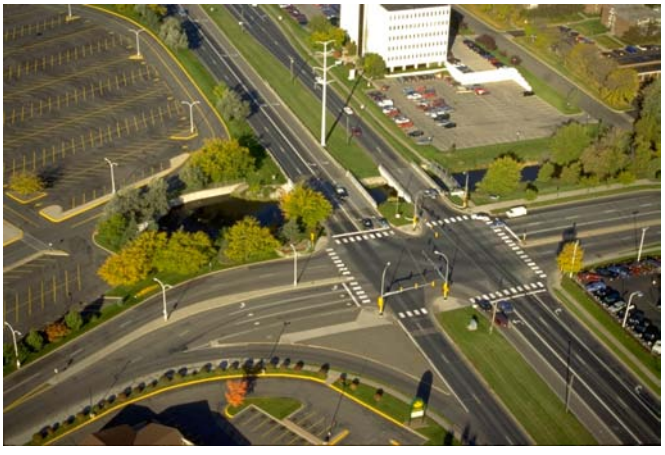
Table: Comparison of Density Measures for the Same Location

Site density	10 DUs per acre
Block density	8 DUs per acre
Net residential density	10 DUs per acre
Net neighborhood density	6 DUs per acre
Gross neighborhood density	5 DUs per acre
City density	4 DUs per acre
Metropolitan density	3 DUs per acre

The difference between these numbers is that as the base land area being considered increases there are more and more nonresidential uses added into the calculation. These nonresidential uses such as offices and open space have residential densities of zero and thus lower average residential densities across these wider areas. These more inclusive densities are important measures and have much to say about such issues as the overall walkability of the site. Given these figures, however, if an overall aim is to achieve a city density of 4 dwelling units per acre then the site density will need to be much greater.

Similarly, **household size affects population density**. An area with a site density of 10 DUs per acre may have a site population density of 15 people per acre in an area full of empty nesters and seniors, or a site population density of 35 people per acre in an area with many households with children or extended families. This makes a great deal of difference in terms of how many people are present to support community facilities. However, it is much harder for governments to regulate household size as opposed to dwelling numbers so most policy discussions focus on densities of dwelling units.

One area of confusion is between density and other related terms. On one side are **physical measures of the intensity of use of land** including measures of building bulk and coverage. A number of such measures are listed in Part B of the working definitions section. These measures say something about how big the buildings are, although they are only rough measures.



Large setbacks are not always attractive. Large areas devoted to the automobile can also force the neighborhood and city level densities down, even when the residential areas have many dwellings on a small amount of land. Photo: DCAUL

Photo: Ann Forsyth

Beacon Bill in Boston is an area where high lot coverage and small setbacks combine to make a high quality environment.

Many of the most charming environments in the world have buildings with small setbacks, high building coverage, and relatively small distances between buildings. More open space is not necessarily better, particularly when such open space is poorly designed.

Another area of confusion is the issue of **crowding**, which is a perception that there are too many people (Churchman 1999). However, in housing studies crowding is generally operationalized as the number of people per room, per bedroom, or square foot. Obviously density and crowding are not the same and are not even related. It is possible to live at very high density in a spacious apartment with no crowding, and conversely it is possible to live in a detached farm house that is crowded in terms of having many people per room.

In addition there is **unclear terminology even when it appears to be specific**. Net density refers to densities where the base land area calculation focuses only on the parcel or, if covering a larger areas, excludes certain uses. Gross densities do not have such exclusions. However, as is obvious from the set of working definitions **there are a number of "net" and "gross" density definitions** and so what area is being considered needs to be specified. Saying net or gross is not enough.

While people often talk about low, medium, and high densities **there are no agreed upon standards for what constitutes high, medium, and low densities**. A high density in Minneapolis might be medium or even low density in Paris or Singapore.

Often people **confuse density with building type** and assume, for example, that detached houses are lower density than attached housing types. While this is generally true it is not always the case. A high-rise tower with large units set on a park-like site may be lower density than a set of detached houses on small lots.

A larger question is that of **perceived density** (Rapoport 1975). Perceived density is not highly related to actual density but is profoundly affected by landscaping, aesthetics, noise, and building type. Often, when people say an area is dense, they base this assessment on a perception that a development is ugly, has little vegetation, and has caused parking problems for neighbors, rather than a count of the actual number of units per acre. Design can make an enormous difference to perceived density.

Finally, some people associate higher densities with **social and economic characteristics** such as renter and low-income households, and high crime neighborhoods. They may misperceive densities because of this, underestimating the densities of more affluent areas with larger numbers of owners. The definitions in this paper will help add clarity to such discussions.

Working Definitions

A range of potential density definitions is outlined below, based on a review of the work in the reference list, general knowledge of density calculations used in urban design regulations, and unique measures developed for Design Center projects. (See the http://www.designcenter.umn.edu for examples.)

The ones most used by the Design Center are marked with an * . Those developed by the Design Center are indicated although it is likely that these definitions have been created earlier by others and we welcome correspondence indicating those uses. We will cite them in subsequent editions of this paper.

Many of these density measures are simple to calculate but some are quite difficult and need a large team of workers.

Part A. Dwelling unit (DU)/residential population (RP) densities

Parcel or block densities (all "net" densities)

*****1. *Parcel Density (PD): DUs or RP divided by total site/parcel area (all uses)*. This is often used by developers. It is easy to calculate with GIS but also fairly simple by hand if there is only one parcel. However, since parcel boundaries are not always visible on the ground this form of density can be hard to calculate from physical observations.

*2. *Block Density (BD): DUs or RP divided by block area measured to the curb.* This is relatively easy to measure from aerial photos and census data, and reflects a unit that is part of the experience of place, the block (Design Center). However, if the block is not surrounded by roads, for example where it abuts open space, the boundaries can be less clear.

3. Part Block Density (parcel approximation) (PBD): DUs or RP divided by a clear subset of the block area measured to the curb. Sometimes the parcel boundaries are not highly visible and so a part-block density is a useful approximation for a parcel density. However, it does include the sidewalk area and so will deliver a slightly lower density number than a site/parcel density (Design Center).

Neighborhood

4. Net Neighborhood Residential Dwelling/Population Density (NNRDD/NNRPD): DU or RP divided by total land area devoted to residential facilities.

This is a calculation that involves defining both a neighborhood and residential land within that neighborhood. Unless there is a truly compelling reason to choose another unit, the *neighborhood* should be a census tract or a city-delineated neighborhood and should be clearly defined; typically these will be in the 100-500 acre ranges.

Care must be taken in assigning land to *residential uses* rather than, say, recreation--the key is to find equivalent elements in different residential designs. In lower density areas the base land calculation typically includes dwelling lots/yards, driveways, private gardens, and ancillary structures e.g. garages. In higher density designs the equivalent base area includes private access drives, resident parking, play spaces, gardens, and landscaped areas adjacent to and related to the residential use. Excluded are the following areas if not directly beneath a dwelling: commercial and industrial areas, shops, commercial garages, public parks/playgrounds, undeveloped vacant land, vacant unsuitable land, schools, churches, public streets, public parking spaces. This calculation is relatively simple using GIS but difficult otherwise. This definition is adapted from Alexander (1993) who has an even more detailed list of exclusions.

5. Net Neighborhood Residential Building Type Density (NNRBTD). Density calculation very similar to definition number 4 but counts only the dwellings of one type in a neighborhood e.g. townhouses and the land area associated with that type. This is a relatively simple calculation using GIS, if the appropriate data exist, and like other

densities in this list can be calculated for dwelling units or residential population (Design Center).

6. Net Neighborhood Density (NND): DU or RP divided by the neighborhood area with the base land area calculated to exclude city-wide uses in the neighborhood. Neighborhoods should be defined as in #4. Included in the neighborhood land area are residential land, streets, and neighborhood type uses—schools, parks, churches/synagogues/ temples etc. and neighborhood shopping. Excluded are city-wide businesses, public uses, high schools and colleges, major arterials, major regional parks, and vacant and unusable land. These exclusions can be difficult to calculate (adapted from Alexander 1993). This is different to the Net Residential Densities in that it includes other neighborhood uses while still excluding uses seen as regional.

**7. Gross Neighborhood Density (GND)/Gross Census Tract Density (GCTD): DU or RP divided by the total neighborhood area.* The total neighborhood area should be defined as in density definition number 4 but in this case there are no exclusions. This is easy to calculate although it may be skewed by regional uses such as regional parks. The Gross Census Tract Density is particularly useful as it is available across the United States from Census information and does not rely on local data.

City and larger

8. City Density (CD): DU or RP divided by the entire developed area of the city or town. In built out local government areas this is in practical terms the entire city. On the urban edge, it includes only developed land, a more complex calculation (adapted from Alexander 1993). This is a gross density.

9. Metropolitan Density (MD): DU or RP for US Census Metropolitan Statistical Area divided by total land area. This calculation includes undeveloped areas which will lower the overall figures, but is nationally comparable. The US Census prepares such density figures. This is also a gross density.

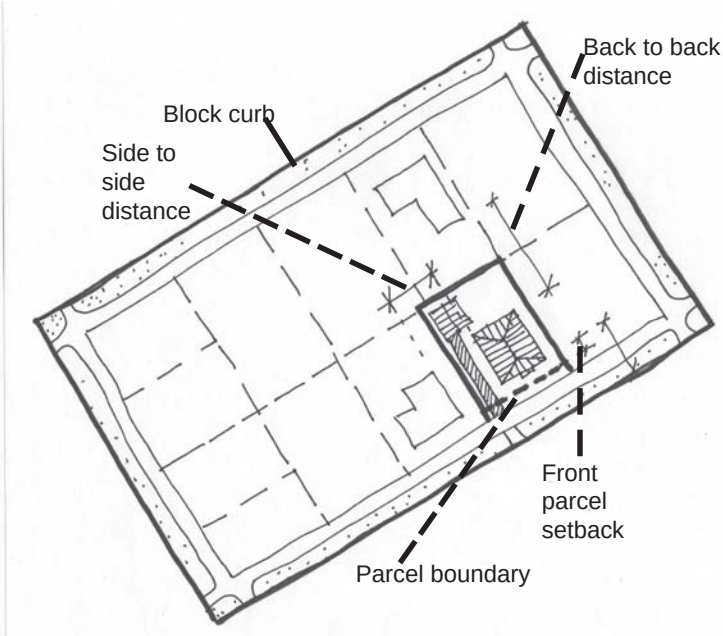
10. Net Residential Density at City or Metropolitan Level: DU or RP divided by residential land at a City or larger level. This kind of calculation is possible using large Geographical information System databases. The presence of housing in mixed use areas makes it complicated in areas with a large percentage of such areas.

Part B. Built area intensity measures at parcel or block level

11. Floor Area Ratio (FAR)—Built floor area on all floors divided by the parcel area. This calculation is often based on actual usable floor area rather than footprint area that includes wall thickness. However, this varies from municipality to municipality.

12. Building Site Coverage—Area of ground floor footprint of building divided by the parcel area. This measure indicates the amount of open space left on the site.

**13. Building Block Coverage—Area of ground floor footprints of buildings divided by the block area measured to the curb.* This is a calculation that can



Density and building intensity factors on a simplified block.

be done when the parcel boundaries are not known. It also reflects the actual experience of an environment better than parcel by parcel calculations.

**14. Impervious Surface Parcel Coverage—Area of ground floor building footprint plus paved parking lots, drives, sidewalks, paths, decks and other buildings divided by site or parcel area.* This measure indicates the area of land that has been built upon or paved but does not easily take account of porous paving systems or decks designed for water infiltration.

**15. Impervious Surface Block Coverage--Calculation as for number 14 but using the block as the base land area.*

16. Building Height in feet for parcel.

17. Front Parcel Setback in feet for parcel. This is the distance from the front facade of the building to the front property line. It is a measure of building intensity. It is a typical measure in zoning regulations.

18. Front Curb Setback in feet, with the setback of each building from the curb averaged by building over a block. This is a rough measure of the experience of the setback as it includes the sidewalk and planting strip area (boulevards in Twin Cities terminology).

19. Side to side distance between buildings, measured in feet and averaged across a block. This is another rough measure of building bulk.

20. Back to back distance between buildings, measured in feet and averaged across a block.

Other measures

There are a number of other potential measures of density, and even more of perceived density. For example, the proportion of detached or single family homes in relation to other housing types will affect the perception of density, even though this proportion is calculated on a base of housing units and not land areas. Similarly, measures of crowding are typically based on people per room. This paper is meant to provide a starting place for examining measures of density and building intensity from their physical base and to clearly distinguish these from separate but related measures of housing mix, crowding, or social and economic characteristics.

Density and Intensity Measure Summary

* Relatively difficult to calculate due to exclusions

** Easily calculated from field observations and measurements from aerial photos supplemented with web-accessible census data

*** Easily calculated using GIS parcel level database, including assessors data and/or census data and TIGER line files

1. Parcel Density ***
2. Block Density**
3. Part Block Density (parcel approximation)**
4. Net Neighborhood Residential Dwelling/ Population Density ***
5. Net Neighborhood Residential Building Type Density***
6. Net Neighborhood Density*
7. Gross Neighborhood Density**
8. City Density***
9. Metropolitan Density (MD)***
10. Residential Density at City or Metropolitan Scale***
11. Floor Area Ratio***
12. Building Site Coverage***
13. Building Block Coverage**
14. Impervious Surface Parcel Coverage***
15. Impervious Surface Block Coverage**
16. Building Height**
17. Front Parcel Setback***
18. Front Curb Setback**
19. Side to side distance***
20. Back to back distance***

Fine Print Facts

Some of the most talked about density definitions of the 1990s were the density thresholds for designation as priority funding areas (PFAs) under the State of Maryland's smart growth regulations. Under these regulations, the state would place infrastructure only in areas that reached certain densities. Specifically, they had to be planned for 2.0 units per net residential acre (excluding public recreation, habitat, wetlands, and public open space) in existing areas with sewer or water. For greenfield or peripheral sites, this is raised to 3.5 units per net acre excluding those same public uses (Maryland Office of Planning 1997).

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Funding for this project came from a variety of sources including the McKnight Foundation.

Redevelopment of the McKinney Town Center and of the Primary Site
Water and Sanitary Sewer Infrastructure Considerations

Water Distribution/Fire Flow

With the 2013 update of the Water Distribution System Master Plan conducted by Birkhoff, Hendricks & Carter LLP (BHC) and approved by the City Council on August 20, 2013, the City's projected population and non-residential uses in the historic McKinney Town Center (MTC) redevelopment area were incorporated into BHC's computer model. Based on this analysis, the existing water supply distribution system was shown to be generally capable of supporting the projected peak demands in the MTC. However, the fire flow analysis showed that some localized improvements to the distribution system will be needed to support a 3,500-gallon per minute fire flow in the MTC. The 3,500-gallon per minute fire flow rate is the standard for fire flows in the downtown area.

The MTC is located in the 794 Service Area (i.e. pressure zone). This pressure zone is currently fixed on water supply from the North Texas Municipal Water District (NTMWD). The fixed water supply is currently the main factor to what could limit development in the 794 Service Area. In response, the City will be constructing a valve between the 794 pressure zone and the 850 pressure zone in the year 2014 that will allow supplemental water supply to be provided to the 794 pressure zone until the NTMWD can provide additional supply in the year 2015 to the City's existing Gerrish Street Pump Station. In the Master Plan update, BHC has recommended improvements at the Gerrish Street Pump Station for the year 2015 (see attached Table 21 from the Master Plan report). Once these improvements are completed, the development of the 794 Service Area will not be constrained due to supply concerns.

The attached Figure 10 from the Master Plan report shows the specific locations where improvements to the water distribution system are recommended by BHC to support the redevelopment of the MTC. The attached Table 23 from the Master Plan report provides BHC's opinion of cost for all of the proposed water distribution system improvements in the MTC. The existing water distribution system can support the projected peak demands for the MTC; however, it is anticipated that, when triggered by a specific redevelopment project in the vicinity, a specific individual segment(s) of improvement(s) to the distribution system may be needed to overcome a localized condition(s) of insufficient fire flow.

Water for the redevelopment of the City-owned Primary Site: Whether specific water improvements are considered on-site/off-site/public/private will depend on the ultimate redevelopment configuration of the Primary Site. BHC's analysis shows that tapping the existing 12-inch water lines in Tennessee Street and Davis Street will provide the required fire flow to serve the entire redevelopment of the Primary Site (with up to 40,000 square feet of retail, up to 150,000 square feet of office, and up to 300 multifamily units).

However, if the ultimate redevelopment configuration of the Primary Site necessitates tapping the existing on-site 8-inch pipe P1419 (between junctions J1292 and J1293), the existing on-site 6-inch pipe P1418 (between junctions J1293 and J1294), or the existing on-site 8-inch pipe running northeasterly through the Primary Site, then BHC recommends that three new segments of 12-inch pipe be installed (as shown on Figure 10) to provide the required fire flow. BHC's opinion of cost for these three new pipe segments is $165,000 (a total of approximately 1,100 linear feet of 12-inch water line).

Sanitary Sewer (Wastewater)

With the 2013 update of the Wastewater Collection Master Plan conducted by Birkhoff, Hendricks & Carter LLP (BHC) and approved by the City Council on August 20, 2013, the City's projected population and non-residential uses in the historic McKinney Town Center (MTC) redevelopment area were incorporated into BHC's computer model. Based on this analysis, the existing wastewater collection system was shown to be generally capable of supporting the projected peak demands in the MTC.

It should be noted that, when triggered by a specific redevelopment project in the vicinity, a specific individual segment(s) of improvement(s) to the collection system may be needed to overcome a localized condition(s) of insufficient flow capacity and/or pipe condition.

On-site sanitary sewer for the redevelopment of the City-owned Primary Site: As shown on the attached Sewer Exhibit and based on available records, BHC's analysis shows that the existing on-site 8-inch sanitary sewer line running northeasterly through the Primary Site is of sufficient capacity and condition to serve the anticipated peak sanitary flow for the entire redevelopment of the Primary Site (with up to 40,000 square feet of retail, up to 150,000 square feet of office, and up to 300 multifamily units). However, it is possible that this line may require realignment to accommodate any proposed structure(s). Should this existing sewer line require relocation on the Primary Site, BHC's opinion of cost is approximately $90,000.

Off-site sanitary sewer for the redevelopment of the City-owned Primary Site: The sanitary sewer from the Primary Site is piped to flow off-site to the north into an existing 6-inch sanitary sewer line headed northerly along Chestnut Street from Davis Street to Cloyd Street. Based on a minimum velocity of 2.0 feet per second (fps), this existing 6-inch line has adequate capacity to convey the anticipated sanitary sewer flow; however, the buffer between the pipe capacity and the anticipated peak sanitary flow is small (pipe flowing in range of 80% of full flow). With record drawings not available for this particular segment of line (to establish a basis on the accuracy of pipe slope), a velocity of 2.0 fps has been utilized in this analysis. Based on the age of this existing sewer line segment and its near full flowing capacity calculation, BHC recommends that a field investigation be conducted on this line segment to evaluate its actual capacity and condition prior to determining its ability to convey the anticipated redevelopment of the Primary Site. If replacement is warranted, BHC recommends installation of a new segment of 8-inch pipe (approximately 250 linear feet). BHC's opinion of cost for this pipe is $60,000.

The segment of sanitary sewer line described above connects to a 10-inch sanitary sewer line along Cloyd Street. Based on a minimum velocity of 2.0 fps (record drawings show this to be a conservative assumption), this existing 10-inch sanitary sewer line has adequate capacity to convey the anticipated peak sanitary flow from the Primary Site. In other words, there is a comfortable buffer between the anticipated peak sanitary flow and the calculated conveyance capacity of this segment of pipe. However, due to the age of this segment of pipe (installed in 1946), BHC recommends that a field investigation be conducted on this line to evaluate its condition. Should the pipe be in poor/deteriorated condition, the capacity buffer of this segment could diminish quickly during a wet weather event.

Alternatively, whether specific sanitary sewer improvements are considered on-site/off-site/public/private will depend on the ultimate redevelopment configuration of the Primary Site. BHC's analysis shows that connecting to the existing 8-inch sanitary sewer line located along Tennessee

Street will also provide sufficient capacity to convey the anticipated peak sanitary flow for the entire redevelopment of the Primary Site (with up to 40,000 square feet of retail, up to 150,000 square feet of office, and up to 300 multifamily units). This existing 8-inch line along Tennessee Street was installed in 1994, which provides a level of comfort regarding the condition of the pipe. It should be noted that this existing 8-inch line along Tennessee Street does connect downstream to the older 10-inch line along Cloyd Street referenced above.

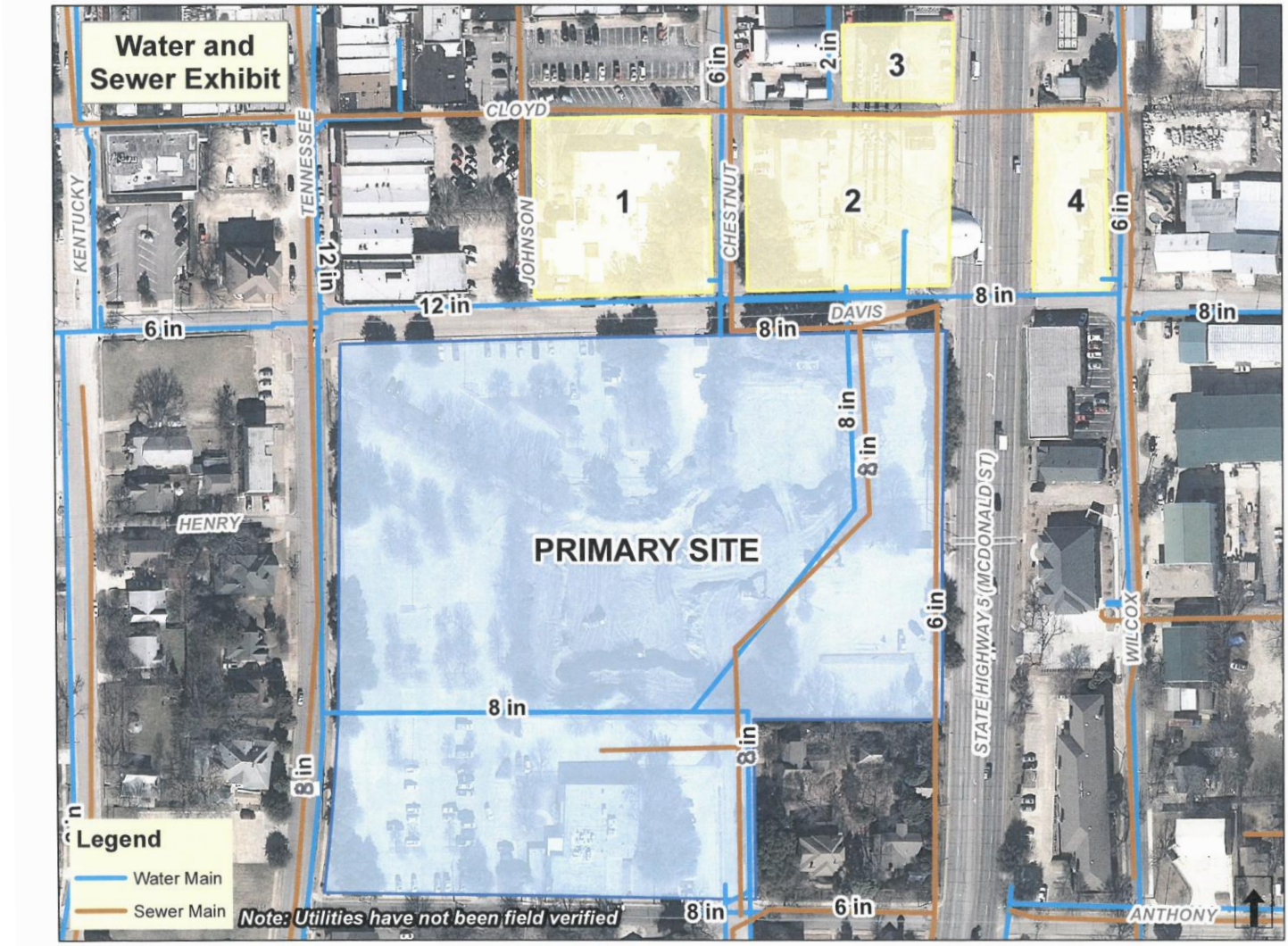

TABLE 21
10-YEAR CAPITAL IMPROVEMENT PLAN
PUMP STATIONS, GROUND STORAGE RESERVOIRS & ELEVATED TANKS

Year	Service Area	Project		Capacity	Opinion of Construction Cost (A)
2013	850	Hardin Elevated Storage Tank		2 MG	$ 5,202,788
2014	850/920	University 10-MG Ground Storage Reservoir No. 3		10 MG	$ 4,950,000
2014	794/850	794/850 PRV			$ 183,920
2015	794	Gerrish 2-MG Ground Storage Reservoir No. 2		2 MG	$ 2,200,000
2015	794	Gerrish Pump Station Expansion - Replace Pump 4 + Electrical		4.8 MGD	$ 1,000,000
2016	920	Stacy Elevated Storage Tank		3 MG	$ 6,700,000
2017	850	Trinity Falls Elevated Storage Tank		3 MG	$ 6,700,000
2018	850	Bloomdale Pump Station - Phase I (850)		20 MGD	$ 4,730,149
2018	794/850	Bloomdale 6-MG Ground Storage Reservoir No. 1		6 MG	$ 2,640,000
2018	794	Bloomdale Pump Station - Phase II (794)		20 MGD	$ 4,730,149
2018	794/850	Bloomdale Pump Station - Emergency Generator No. 1		1000 kW	$ 660,000
2022	920	University Pump Station Phase III Improvements - Add Pump		15 MGD	$ 550,000
		Total: Pumping and Storage Facilities			**$ 40,247,006**

(A) Opinion of Cost includes:
a) Engineer's Opinion of Construction Cost
b) Professional Services Fees (Survey, Engineering, Testing, Legal
c) Cost of Easement or Land Acquisitions

TABLE 22
MISCELLANEOUS CAPITAL IMPROVEMENTS
EXISTING SYSTEM IMPROVEMENTS

Service Area	Project	Length (FT)	Size (In)	Opinion of Construction Cost (A)
794	Virginia Parkway Looping Line- From S. Westpark Drive, West 285-ft (Pipe 3374)	285	8	$ 42,750
850	Country Club Replacement Water Line from Trenton to Ticonderoga (Existing Water Line is Not Accessible for Maintenance) (Pipe 3414)	510	8	$ 76,500
	Total: Existing System Improvements			**$ 119,250**

(A) Opinion of Cost includes:
a) Engineer's Opinion of Construction Cost
b) Professional Services Fees (Survey, Engineering, Testing, Legal
c) Cost of Easement or Land Acquisitions

(B) Refer to Master Plan Map, Insets H & I for Loaction of Existing System Improvments

TABLE 23
CAPITAL IMPROVEMENT PLAN
MCKINNEY TOWN CENTER

MTC Area	Project	Length (FT)	Size (In)	Opinion of Construction Cost (A)
Town Center	Walker - From Benge to Church (Pipe 4182)	225	8	$ 33,750
Town Center	Walker - From Kentucky to Tennessee (Pipe 1485)	230	8	$ 34,500
Town Center	Lamar - From Church to Wood (Pipe 1471)	230	8	$ 34,500
Town Center	Kentucky - From Hunt to Logan (Pipe 1478)	313	12	$ 53,210
Town Center	Church - From Virginia to Hunt (Pipes 1475,1476)	479	12	$ 81,430
Town Center	Davis - From Benge to Tennessee (Pipes 1486,1487,1488,1490)	970	8 & 12	$ 159,500
Town Center	Kentucky - From Davis to Standifer (Pipe 4179)	980	8	$ 147,000
Town Center	Chestnut - From Tennessee to Anthony (Pipes 1491,1492)	650	12	$ 110,500
Town Center	Standifer - From Kentucky to Tennessee (Pipe 1480)	285	12	$ 48,450
Town Center	Throckmorton - From Broad to Seneca (Pipes 1497, 1498)	875	12	$ 148,750
Town Center	Seneca - From Main to Washington (Pipes 1496,1510,1527)	1,440	8 & 12	$ 222,500
Town Center	Washington - From Seneca to Virginia (Pipes 1528,1529,1530)	1,535	8	$ 230,250
Town Center	Virginia - From McDonald to Washington (Pipes 1495,1505,1506)	2,650	12	$ 450,500
Town Center	Greenville - From Throckmorton to Airport (Pipes 1472,1473)	3,434	12	$ 583,780
Town Center	Wilcox - From Louisiana to Short (Pipes 1507,1508,1509)	2,058	12	$ 349,860
Cotton Mill	Puckett - From Wilson Creek Pkwy. to Dud Perkins (Pipes 1470,1518)	1,450	12	$ 246,500
Cotton Mill	Dud Perkins - From Fowler to Puckett (Pipe 1517)	820	12	$ 139,400
Cotton Mill	Amscott - From Wilson Creek Pkwy to Dud Perkins (Pipes 1514,1515,1516)	1,690	12	$ 287,300
	Total: McKinney Town Center Water Distribution Improvements			**$ 3,361,680**

(A) Opinion of Cost includes:

a) Engineer's Opinion of Construction Cost
b) Professional Services Fees (Survey, Engineering, Testing, Legal
c) Cost of Easement or Land Acquisitions

(B) a) Refer to Master Plan Map for Loaction of Cotton Mill Improvments
b) Refer to Master Plan Map Inset A and Master Plan Report Figure 21 for Town Center Improvements

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LEGEND

- EXISTING PIPE & SIZE
- PROPOSED PIPE & SIZE – MCKINNEY TOWN CENTER FIRE FLOW PIPE IMPROVEMENTS
- EXISTING PIPE TO BE ABANDONED FOLLOWING IMPROVEMENTS
- MCKINNEY TOWN CENTER REDEVELOPMENT ZONE

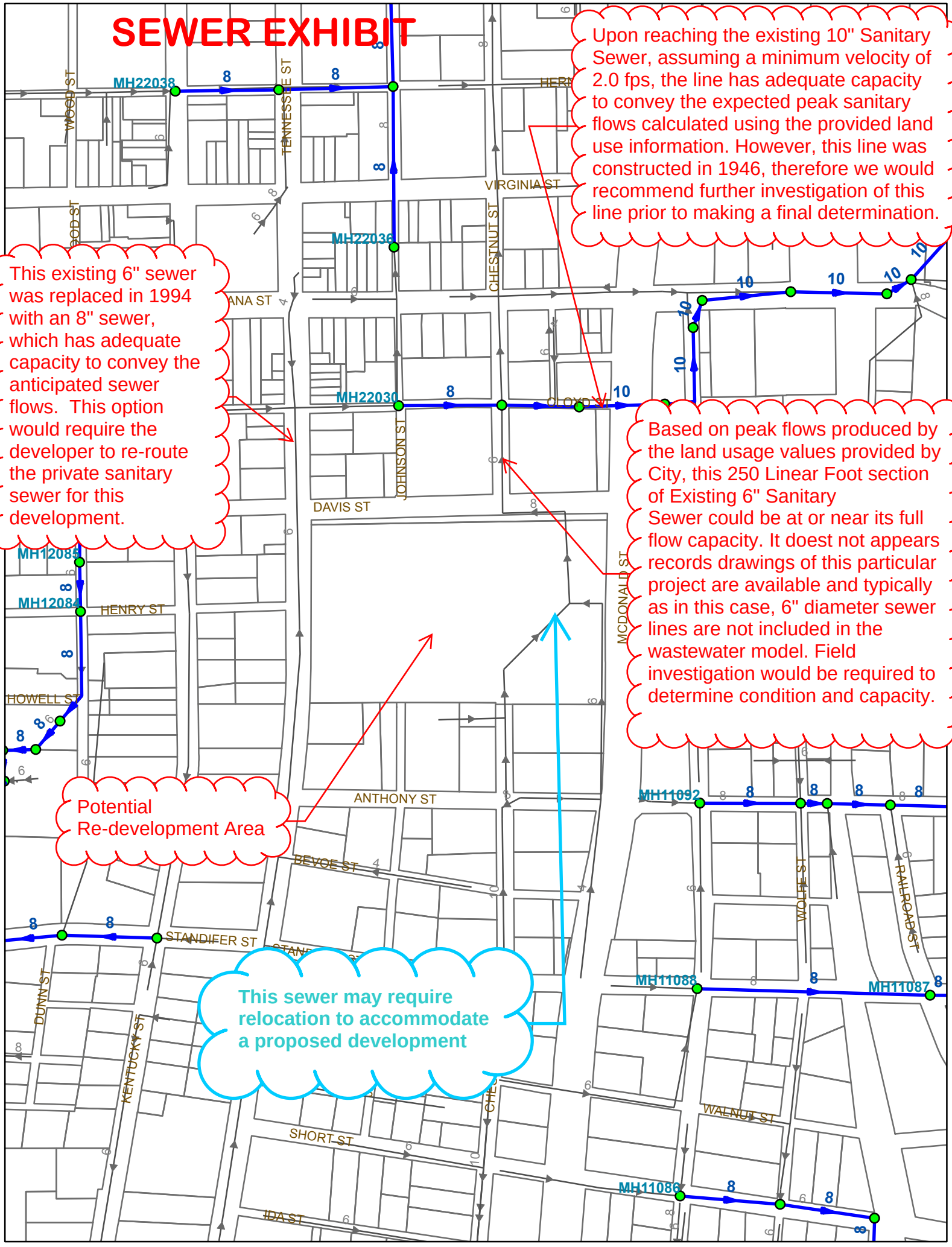
VELOCITY RESULT FOR 8" PIPE - 13-FPS WITH 3,500-GPM FIRE FLOW. PRESSURE 58-PSI

3,500-gpm J1339

WATER DISTRIBUTION SYSTEM MASTER PLAN DOWNTOWN AREA 10-YEAR CAPITAL IMPROVEMENT PLAN

BIRKHOFF, HENDRICKS & CARTER, L.L.P.
PROFESSIONAL ENGINEERS
DALLAS, TEXAS
AUGUST 2013

FIGURE 10


SEWER EXHIBIT
Upon reaching the existing 10" Sanitary Sewer, assuming a minimum velocity of 2.0 fps, the line has adequate capacity to convey the expected peak sanitary flows calculated using the provided land use information. However, this line was constructed in 1946, therefore we would recommend further investigation of this line prior to making a final determination.
This existing 6" sewer was replaced in 1994 with an 8" sewer, which has adequate capacity to convey the anticipated sewer flows. This option would require the developer to re-route the private sanitary sewer for this development.
Based on peak flows produced by the land usage values provided by City, this 250 Linear Foot section of Existing 6" Sanitary Sewer could be at or near its full flow capacity. It doest not appears records drawings of this particular project are available and typically as in this case, 6" diameter sewer lines are not included in the wastewater model. Field investigation would be required to determine condition and capacity.
Potential Re-development Area
This sewer may require relocation to accommodate a proposed development
MH22038
MH22036
MH22030
MH12085
MH12084
MH11092
MH11088
MH11087
MH11086
WOOD ST
TENNESSEE ST
VIRGINIA ST
CHESTNUT ST
JOHNSON ST
DAVIS ST
HENRY ST
HOWELL ST
ANTHONY ST
BEVOE ST
STANDIFER ST
DUNN ST
KENTUCKY ST
SHORT ST
IDA ST
MCDONALD ST
WOLFE ST
RAILROAD ST
WALNUT ST

General Parking Summary
City-Owned Northern Sites (Secondary Sites 5, 6, 7, 8, 9)
Occupancy Data Collected in 2009

Site 5 (Development Services block)

- Land 41,000 sq ft (0.94 acres)
- Building 22,300 sq ft
- 42 off-street public parking spaces
    - 95% occupied weekday (peak)
    - 10% occupied weeknight
    - 40% occupied weekend

Site 6 (City Hall block)

- Land 40,000 sq ft (0.92 acres)
- Building 21,150 sq ft
- 36 off-street public parking spaces
    - 75% occupied weekday (peak)
    - 10% occupied weeknight
    - 10% occupied weekend

Site 7 (old Wysong Hospital blocks)

- Land 78,500 sq ft (1.8 acres)
- 58 off-street public parking spaces (north half)
    - 15% occupied weekday (peak)
    - 5% occupied weeknight
    - 5% occupied weekend

- 48 off-street public parking spaces (south half)
    - 95% occupied weekday (peak)
    - 5% occupied weeknight
    - 5% occupied weekend

Site 8 (City vehicle parking block)

- Land 39,000 sq ft (0.90 acres)
- 108 off-street public parking spaces
    - 15% occupied weekday (peak)
    - 30% occupied weeknight
    - 30% occupied weekend

Site 9 (western side of Central Fire Station block)

- Land 26,000 sq ft (0.60 acres)
- 51 off-street public parking spaces
    - 0% occupied weekday (peak)
    - 0% occupied weeknight
    - 0% occupied weekend

General Parking Summary
City-Owned Southern Site (Primary Site)
Occupancy Data Collected in 2012

Primary Site (old Collin County Government Center Property)

- Land 378,972 sq ft (8.7 acres)
- Building 9,200 sq ft (Annex B)
- 480 off-street public parking spaces
    - 20% occupied weekday (peak)
    - 5% occupied weeknight
    - 30% occupied Saturday morning Farmers Market at Chestnut Square
    - 5% occupied weekend (not during Farmers Market)