



RELLIS Campus Area Annexation Feasibility and Strategy Study

September 2018



RELLIS Campus Area Annexation Feasibility and Strategy Study

Highlights of Study Findings and Results

Below are essential answers to key questions this study was commissioned to address. The responses also point to specific locations in the report where more details may be found, as applicable, as well as in the two supplemental reports to this main report (one focused on road and utility infrastructure considerations, and the other on fiscal impact considerations).

Should the City of Bryan annex area in the immediate vicinity of the Texas A&M University System’s RELLIS Campus in the near term?

No. It is possible for the City to do so, and to do it relatively quickly using the most expeditious method available under state law (“exempt” annexation). This would bring new territory into the City at the north edge of the campus along SH 21 and at the east edge along Riverside Parkway/SH 47. However, the upfront cost to the City would be steep given steps the Bryan Fire Department would have to take immediately to serve as first responder to this relatively remote area, including building, personnel and vehicle expenditures. Even with the uptick in activity and building occupancy on the RELLIS Campus this year, the surrounding area still has limited utility infrastructure and market conditions to support any significant new residential or commercial development in the very near-term future.

For more detail, see the Annexation Recommendations discussion on page 49 of this report, and the accompanying Map 18A-D, Recommended and Alternative Annexation Scenarios.

Should the City annex any territory on the west side in the near term?

Yes. The City has various options for completing exempt annexations in the “horseshoe” area of its west side extraterritorial jurisdiction (ETJ), northwest of Leonard Road between Riverside Parkway/SH 47 and N. Harvey Mitchell Parkway/FM 2818. Focusing annexation activity in this area would result in less territory being incorporated, but it should be much easier for the City to serve given its proximity to existing developed and developing areas within the city limits. An exempt annexation process should typically take 5-7 months to complete, which is significant given the concern among Texas cities that the Texas Legislature and Governor may further restrict municipal annexation authority during the next legislative session in 2019.

For more detail, see the Annexation Recommendations discussion on page 49 of this report, and the accompanying Map 18A-D, Recommended and Alternative Annexation Scenarios. Also see the Potential Timeline for Recommended Annexation Strategy discussion on page 65.

Assuming the City is able to continue pursuing City-initiated annexations in the years ahead, under current or amended statutes, should it proceed with additional annexations on the west side?

Yes. This report recommends that the City, ideally, should eventually annex the entire final study area delineated for this evaluation process. The land use, infrastructure and fiscal impact evaluations completed through the study were done for the entire area. Only late in the study process, based on the findings, were first potential annexation moves considered for recommendation to the City. The overall area encompasses approximately 5,455 acres, or 8.52 square miles, and would require a series of

exempt annexations to accomplish, likely spread over several years at least. This would enable the City to manage land use and development activity in the ETJ horseshoe area and around the RELLIS Campus, as well as focus revitalization efforts on the segment of SH 21 nearest the existing city limits, just west of N. Harvey Mitchell Parkway/FM 2818.

For more detail, see the Annexation Recommendations discussion on page 49 of this report, and the accompanying Map 18A-D, Recommended and Alternative Annexation Scenarios. Also see the Executive Summary of the Fiscal Impact Analysis Report.

Will west side annexation activity “pay for itself” in terms of projected new or increased revenues to the City meeting or exceeding the expected costs to extend or upgrade City services?

Yes, although not immediately. The supplemental Fiscal Impact Analysis Report concludes that after 10 years, based on the conceptual development scenarios evaluated for the study area, the revenues generated by growth would offset both the operating and capital costs borne by the City, resulting in an annual positive fiscal impact from then on. The analysis also found that the City would reach a break-even point in Year 16, at which time the positive net impact already achieved earlier on the operational side would also cover the initial large capital expenditures the annexations required.

For more detail, see the Executive Summary of the Fiscal Impact Analysis Report.

Should the City annex the RELLIS Campus and not just areas around it?

Yes. During this study, City officials cited the intangible benefits of having RELLIS associated with Bryan. Based on this, this report recommends that the City add a sixth criterion to five others that City Council adopted by resolution in 2007 to “provide guidance on the annexation of areas within Bryan’s extraterritorial jurisdiction.” The added criterion would address “strategic” annexations that may not have a direct and quantifiable financial benefit to the City but will bring prestige and recognition, which generally enhances the community’s economic development and tax base potential. In such cases, annexation would enable the City to ensure that the environs around a community and regional asset, especially one situated at a highly visible gateway location or along a key corridor, will be protected over the long term to ensure that only quality development emerges around the asset.

Additionally, unlike most government-owned properties, the RELLIS Campus has the potential to generate some revenue for the City from the public/private partnership and research commercialization activities envisioned by the Texas A&M University System. (Note that projecting the potential scale of such revenue was not an objective of this study, and the extent and timing of such on-campus activity is unknowable at this point even for the A&M System.) The City will also have to extend certain public services to the campus which are not already handled by the A&M System (e.g., University police), especially the need for full fire response services. The City will also assume responsibility from Brazos County for maintaining and upgrading Goodson Bend Road as it runs along the south edge of the RELLIS Campus. The RELLIS Campus Master Plan indicates one or two secondary access points along Goodson Bend.

Annexing the 1,877-acre campus – a property owned by the state and used for a public purpose – also would not count against the City’s ability under state law to annex acreage each year equivalent to 10 percent of its current total city limits area. Finally, discussions with senior officials early in this study indicated that the A&M System likely would be amenable to seeing the RELLIS Campus incorporated into the City of Bryan.

Are there opportunities for the City to partner with the Texas A&M University System on interim and ongoing service provision arrangements and/or potential cost-sharing agreements?

Yes. The RELLIS Campus is in Bryan’s ETJ, so the first responder for fire incidents is currently the Brazos County Precinct 4 volunteer fire department. The campus is entirely dependent on such external service relative to other service types where it is self-sufficient (e.g., police, shuttle buses, etc.). Therefore, in light of the significant public investments and building construction occurring on the RELLIS Campus, and potentially for insurance reasons, the A&M System may wish to expedite a higher level of fire service from the City of Bryan by cost-sharing on some aspect. A logical element would be a facility on or near the campus to house Bryan Fire Department apparatus and personnel since, as highlighted above, this is a key factor making it imprudent for the City to annex out to the RELLIS Campus vicinity sooner rather than later. Also, if the RELLIS Campus were to be annexed as well, then the City would become responsible for maintaining and likely upgrading Goodson Bend Road, at least to the point where this roadway turns more southward and is no longer along the south edge of the campus. The RELLIS Campus Master Plan indicates one or two secondary access points along Goodson Bend Road, so the A&M System may be willing to consider cost-sharing with the City to expedite and/or expand the scope of roadway improvements.

Is the potential scope of the Texas A&M University System’s RELLIS Campus initiative as substantial as announced and reported?

Yes. A senior A&M System official stated early in the study process that the campus population could reach 25,000 persons in 25 years depending on how scenarios play out for the less predictable campus activities other than more traditional academic programs (i.e., public/private partnerships, business incubation, etc.). The system released its 20-year *RELLIS Campus Master Plan* soon after the start of this study in early 2018. The Master Plan states that:

- 680 of the campus’s 1,877 total acres will be developed over the plan’s 20-year horizon.
- This will yield 4.9 million gross square feet of new building area compared to the existing 500,000 gross square feet (and could increase to as much as 8 million gross square feet).
- Approximately 1,500 beds in student/guest housing will eventually be built on campus.
- The projected ultimate student population will be 15,000 (2,000-2,500 students within five years, another 2,000-2,500 in the 5-10 year timeframe, and another 4,000-5,000 by the 20-year master plan horizon).
- The campus could generate nearly 15,000 weekday vehicular trips within five years and reach nearly 45,000 per weekday in 20 years.

For more detail, see the Implications of RELLIS Campus discussion on page 27.

What was the most significant challenge for this study?

The greatest challenge was arriving at reasonable assumptions on the pace of RELLIS Campus growth and development in the years ahead (relying on the *Campus Master Plan* forecasts), and especially the potential timing, extent and nature of private land development on Bryan’s west side in general and as a result of RELLIS. For purposes of the urban planning, infrastructure and fiscal impact evaluations completed through this study, various “best guess” assumptions had to be made involving:

- The amount and types of new land use that might emerge in the area and by when;
- The road and utility infrastructure improvements and public service extensions and upgrades that would be necessary and by when; and

- To what extent the Texas A&M University System may be self-sufficient in some of these areas versus relying on City services.

The City will need to monitor and assess the actual trends and pace of these items in the coming years, whether the City ultimately chooses to annex any of these west side areas.

For more detail, see the Development Outlook portion of this report on page 39.

How many people currently reside in the study area, and how did the study approach the issue of potentially annexing properties in existing residential use?

Based on recent figures from the Bryan-College Station Metropolitan Planning Organization, the study area had just under 3,000 residents in 2017. The preliminary study area from the start of the study was estimated to have only 315 dwellings in an area of just over 13 square miles. (For perspective, the Bryan city limits currently include 45.72 square miles.) After the study area was later reduced to approximately 8.5 square miles, 266 dwelling units remained.

The recommended annexation strategy purposely aims to minimize incorporation of existing residential properties and population as:

- This has been a prime concern of and reason for action by the Texas Legislature and Governor to further restrict municipal annexation authority.
- Annexing primarily residential areas often does not “pay for itself” as the cost of extending City services is typically more than the added revenue to the City (primarily from property taxes, and depending on the appraised value of the property and improvements).
- Also, residential uses are service intensive, requiring water, sanitary sewer, storm drainage, local streets, police/fire/EMS response, parks/recreation, library, solid waste collection, etc.
- The study focus was chiefly on highway frontages and large and/or well-situated properties most likely to draw developer interest in the RELLIS Campus vicinity.

For more detail, see the Socioeconomic Indicators discussion on page 19 and the Residential Properties for Potential Exempt Annexation Scenarios discussion on page 47 (including Map 15, Residential Properties within Study Area).

Should the City use the three-year Municipal Annexation Plan process at all, especially as a way to expedite annexation of more west side territory than can be accomplished through exempt and owner-requested annexations?

No, unless as a last resort. According to the Texas Municipal League (TML) and anecdotal information, only a small number of Texas cities have attempted and/or completed the full three-year process since this annexation method for larger areas was imposed by the Texas Legislature and Governor in 1999. The process is complex and an administrative burden for the City. As TML states in its *Municipal Annexation in Texas* guide, the annexation procedures established by Texas Local Government Code Chapter 43 and periodically changed and added to by the Texas Legislature, “... are a mess, rife with pitfalls.”

For more detail, see the Procedural Considerations portion of this report on page 55.

If the City completes some immediate or near-term annexation on the west side, will it still be able to annex in other ETJ locations elsewhere around the City (i.e., east, north, etc.)?

Yes. Even if the City was to annex the entire study area (approximately 8.52 square miles), this would still leave 5.196 square miles of unused annexation capacity from the City's current accumulated limit of 13.716 square miles. Additionally, as the state-imposed annual limit on the amount of annexation is 10 percent of the current city limits size, the quantity reflected by that 10 percent will grow larger over time as each round of annexation increases the area within the city limits (i.e., taking 10 percent slices from an ever expanding "pie").

For more detail, see the annexation capacity discussion at page 53 of the Annexation Recommendations section, as well as the later discussion entitled Potential Expansion of City Limits through Ongoing Annexation on page 54.

If the RELLIS Campus vicinity is not a viable candidate area for annexation in the near term, what can the City do in the meantime as the campus continues to see increased activity and daytime population?

The City should:

- Continue to entertain and/or solicit more owner-initiated annexations on the west side and/or pursue development agreements that address annexation (near-term or mutually deferred), service provision, compliance with City development and building codes and standards, and potential cost-sharing arrangements.
- Not extend City utility infrastructure or other City services into the ETJ without requiring annexation as a condition of such service provision.
- Continue regular communication and coordination with Texas A&M University System and RELLIS Campus officials.
- Continue coordination with Bryan District contacts at the Texas Department of Transportation on traffic management and safety measures at the main campus access points along Riverside Parkway/SH 47 and SH 21.
- Complete another special area plan, as a supplement to the Comprehensive Plan and similar to the West Area Plan, to flesh out the "Western Gateway" designation on the adopted Future Land Use Plan map and other land use and development considerations and strategies in the RELLIS Campus vicinity. Through this planning effort, the extent of new industrial use indicated for the west side on the Future Land Use map should also be revisited as City economic development staff consider it unrealistic given area market trends and industrial and business park development elsewhere in and around Bryan (e.g., Texas Triangle Park on north side, Biocorridor, etc.).

Acknowledgments

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Prentiss Madison, Councilmember, Single Member District 2
Greg Owens, Councilmember, Single Member District 3
Mike Southerland, Councilmember, Single Member District 4
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Brazos Central Appraisal District	Research Valley Partnership
Brazos County (and Emergency Services District 4)	Texas A&M Transportation Institute
Brazos Transit District	Texas A&M University
Brazos Valley Council of Governments	Texas A&M University Transportation Services
Bryan Business Council	Texas A&M University System
Bryan-College Station Metropolitan Planning Org.	(and RELLIS Campus officials)
Bryan Independent School District	Texas Department of Transportation - Bryan

And special thanks to Smetana area property owners for their perspective and input.

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Introduction

This report documents the results of a special study commissioned by the City of Bryan to ensure careful planning and consideration of how best to proceed in light of a substantial investment by the Texas A&M University System in the former Riverside Campus, now known as the RELLIS Campus. The 1,877-acre (2.93 square mile) campus is located just west of Bryan in western Brazos County, within the City's 3.5-mile extraterritorial jurisdiction (ETJ). The campus is situated immediately southwest of the interchange between SH 21 and Riverside Parkway/SH 47, with a primary access point along Riverside Parkway/SH 47 and a secondary access point along SH 21.

The City sought consulting teams with expertise in four subject matter areas pertinent to assessing whether and by what method the City should unilaterally annex areas around the RELLIS Campus. The selected team included:

- Kendig Keast Collaborative (KKC) as prime consultant and fulfilling the urban planning role on the project;
- Kimley-Horn and Associates, fulfilling the civil engineer role;
- TischlerBise, fulfilling the fiscal/economic impact analyst role; and
- Randle Law Office, fulfilling the attorney role.

Study Purpose and Background

The City framed the overall goal as creating an annexation feasibility and strategy study to assist the City Council in determining whether to, and if so, how to pursue any annexation effort in the RELLIS Campus vicinity. During its regular meeting on August 16, 2016, the City Council had first discussed potential annexation following announcement of the RELLIS Campus initiative. It was opined that annexing the area around the campus would protect the perimeter and benefit the City, by being able to direct and regulate growth and development. It was stated that the Council would need to know how much an annexation would cost the City and that more specific information was needed before any decisions could be made. During a later workshop meeting on January 10, 2017, the City Council directed staff to seek out a consultant team to provide options for unilateral annexation in the RELLIS Campus area, either under the exempt or three-year annexation plan procedures, or a combination thereof, provided in Chapter 43 of the Texas Local Government Code.

Study Process

The consultant team began its work in late January 2018 and made its final presentation and report to City Council in September. Steps in the study process included:

- A joint workshop presentation and discussion with City Council and Planning and Zoning Commission (February).
- Project kickoff discussions and a driving tour of the RELLIS Campus vicinity with City staff (February).
- A series of meetings with various agencies and interests, including some area residents and representatives of economic development entities, Brazos County and Emergency Services District 4, the Texas A&M University System and Blinn College, and City departments (February).
- An existing conditions assessment phase (February).

- Additional meetings with City staff and stakeholders, including more discussion with some area residents and representatives of the Texas Department of Transportation and the Texas A&M Transportation Institute, plus later phone interviews with officials at Blinn College, Bryan Independent School District and the Brazos Valley Council of Governments (March-April).
- Further interaction with City departments on the various study details and inputs (March-June).
- Draft study report compiled for City staff review (July).
- Final report and presentation to City Council (September).

Report Organization

This study report includes the following sections based on the project work program:

- **Existing Conditions**, providing summary information about the study area as it is today in terms of physical features, local government jurisdictions, population and employment, property detail and parcel pattern, land use and development, roadway network and traffic levels, and public safety services.
- **Annexation Context**, providing summary information about Texas A&M University System plans for the RELLIS Campus, the City of Bryan's current ability to annex additional territory, and the City's general annexation policy.
- **Annexation Factors and Considerations**, describing the final refined study area and associated sub-areas, and providing additional background information that factored into the study process and the resulting recommendations.
- **Development Outlook**, describing three development scenarios considered for the study area (Residential, Employment and Hospitality), which provided a basis for assessing potential road and infrastructure needs and analyzing the potential fiscal impact on the City of Bryan under these scenarios.
- **Scenario Evaluation and Implications**, involving further information and evaluation related to specific statutory requirements the City must consider and abide by should it move forward with any City-initiated annexation activity in the RELLIS Campus vicinity.
- **Annexation Recommendations**, providing the consultant team's final recommendations and observations, as well as details on procedural, cost and time considerations for the City should it pursue the recommended course of action.
- **Engineer's Report**, as a supplement to the main study report, documenting the results of the study tasks focused on current road and utility infrastructure in the study area, and the capital improvement implications for the City to satisfy statutory requirements and support desired development outcomes in any areas annexed.
- **Fiscal Impact Analysis Report**, as a supplement to the main study report, documenting the results of the study tasks focused on the revenue and cost outlook for the City from the development and annexation scenarios considered through the study.

Existing Conditions

Along with early interaction with City officials, staff and other stakeholders, the initial study phase focused on compiling and assessing a base of information on the existing conditions and outlook for the overall RELLIS Campus area. [The campus name derives from six core values identified in the Texas A&M University Purpose Statement: R for Respect, E for Excellence, L for Loyalty, L for Leadership, I for Integrity, and S for Selfless Service.]

RELLIS Campus Overview

Founded in 2016, the RELLIS Campus is a significant strategic and public/private investment initiative of the Texas A&M University System, which describes it as:

An ecosystem that fosters cutting-edge research, technology development, higher education and workforce training. The Texas A&M Transportation Institute (TTI) and the Texas A&M Engineering Experiment Station (TEES), along with academic, corporate and private partners, conduct valuable research for world-changing technologies, processes and products with state-of-the-art research laboratories, testing and proving grounds.

As displayed in **FIGURE 1: RELLIS Campus Location**, the RELLIS Campus is comprised of nearly 2,000 acres of land located on the southwest corner of State Highway (SH) 21 and Riverside Parkway/SH 47, about seven miles northwest of Texas A&M University's main campus in College Station. The RELLIS Campus is located within the City of Bryan's extraterritorial jurisdiction (ETJ). The current city limits extend to the easternmost corner of the campus along the Riverside Parkway/SH 47 corridor.

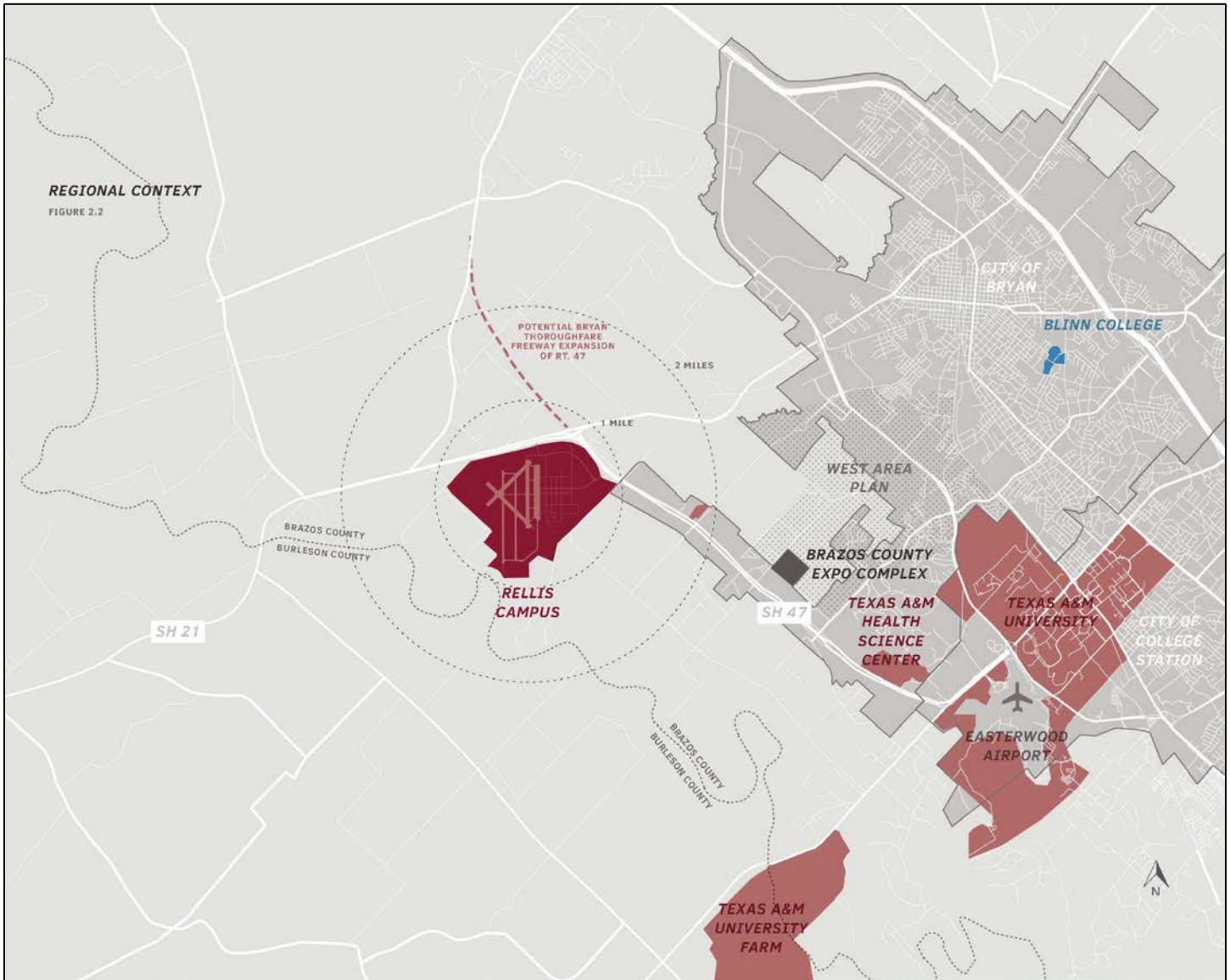
On September 26, 2016, the A&M System broke ground and plans to develop seven engineering research facilities and two education centers on the RELLIS Campus. Three of the main tenants to be located at the RELLIS Campus are the Texas A&M Transportation Institute (TTI), the Texas A&M Engineering Experiment Station (TEES), and the Texas A&M Engineering Extension Service (TEEX). One of the first campus facilities that is slated to open in fall 2018 is the Center for Infrastructure Renewal. This structure will be a 138,000 square foot research, testing and training facility.

The RELLIS Campus will also include a Blinn College presence. Through this partnership with the A&M System, Blinn will have an estimated 15 acres to build both academic and related support services facilities. Texas A&M University System Chancellor John Sharp estimates that as many as 10,000 students from both schools could eventually be studying on the RELLIS Campus. In sum, principal functions and activities on the RELLIS Campus are expected to include, as illustrated in **FIGURE 2: RELLIS Campus Conceptual Development Plan**:

- Applied research, technology development and testing facilities, involving more than one million square feet of laboratory and office space.
- Business incubation.
- Workforce development, professional certificates and hands-on career training.
- Academics, including awarding of Associate degrees and four-year degrees from the Texas A&M System's various campuses statewide. The RELLIS Academic Complex will include a roughly 68,000 square foot building to start.

Both the Blinn footprint at RELLIS and space for other potential partners will be accommodated through ground leases from the Texas A&M University System.

FIGURE 1: RELIS Campus Location



SOURCE: RELIS Campus Master Plan, Texas A&M University System, February 2018.

FIGURE 2: RELIS Campus Conceptual Development Plan



SOURCE: *RELLIS Campus Master Plan*, Texas A&M University System, February 2018.

SOURCES:

Texas A&M University System RELIS Website. <https://rellis.tamus.edu/>. Retrieved during January-February, 2018.

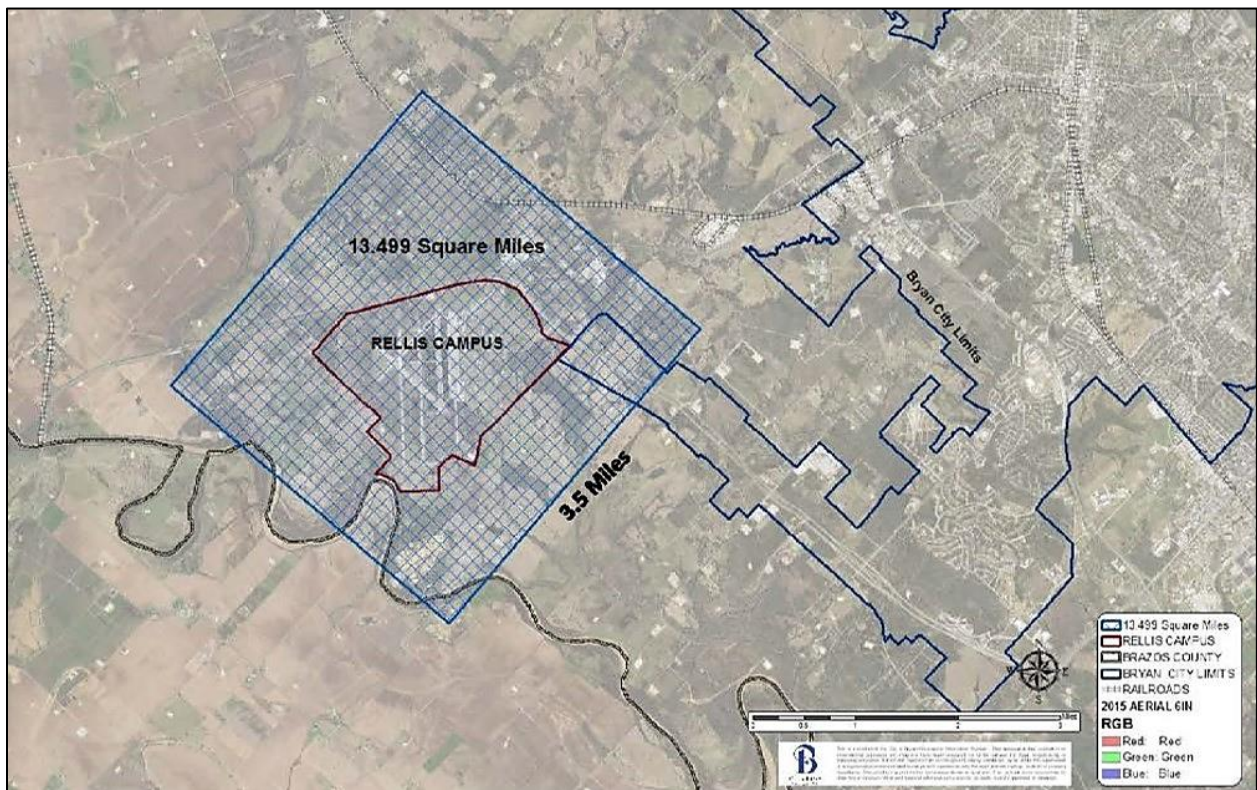
Texas Engineering Experiment Station (TEES) Website. <http://tees.tamu.edu/research/facilities/rellis/>. Retrieved during January-February, 2018.

Texas A&M Engineering Extension Service (TEEX). <https://teex.org/Pages/about-us/rellis-campus.aspx>. Retrieved during January-February, 2018.

Study Area

The preliminary project study area was adapted from a scenario City staff presented to City Council during 2017 in preparation for this study. The staff presentation pointed out the City's current ability to annex up to approximately 13.5 square miles of unincorporated territory (per Texas Local Government Code Section 43.055, which specifies the maximum amount a municipality may annex each year and cumulatively over three years if no annexations have occurred). Displayed in **FIGURE 3: Maximum Potential Annexation Area**, are two views provided by staff: (1) a 13.5 square mile box centered on the RELLIS Campus, and (2) a variation on the 13.5 square mile area if stretched along the SH 21 corridor and other unincorporated areas on the west side.

FIGURE 3: Maximum Potential Annexation Area



SOURCE: City of Bryan City Council workshop presentation (January 10, 2017).



SOURCE: City of Bryan City Council workshop presentation (January 10, 2017).

The preliminary study area begins at the Bryan city limits on the SH 21 corridor, just west of the intersection of SH 21 and N. Harvey Mitchell Parkway/Farm-to-Market Road (FM) 2818, where Quality Park Lane intersects with SH 21. The study area then continues west, encompassing areas generally north and south of SH 21, to the vicinity of where SH 21 crosses the Brazos River, which is also the Brazos County line.

Aside from the SH 21 focus, another major portion of the study area involves the unincorporated “horseshoe” area that is east of the RELLIS Campus and generally between SH 21 on the north, the Riverside Parkway/SH 47 corridor on the west-southwest, and the N. Harvey Mitchell Parkway/FM 2818 corridor on the east-northeast, including areas in the vicinity of and past Leonard Road/FM 1688 toward W. Villa Maria Road/FM 1179 at the southeast end of the study area.

Annexation History

Areas around the Riverside Parkway/SH47 corridor were incorporated during the last major City-initiated annexations in 1999. For context, displayed in **MAP 1: Annexation History, 1999-2017**, are all specific areas brought into the city limits over this timeframe.

Study Area Features

The next series of three maps shows other aspects of the study area and its context:

- **MAP 2: Local Government Jurisdictions**, which shows the extent of the current Bryan city limits and unincorporated extraterritorial jurisdiction (ETJ), other unincorporated areas overseen by Brazos County Precinct Four, and the Bryan Independent School District.
- **MAP 3: Bryan City Council Districts**, which shows district boundaries based on the current geographic distribution of Bryan’s population, which could be affected by future annexation activity depending on how many people live in areas under consideration.

- **MAP 4: Physical Features**, including general topography, water bodies and courses, and their associated flood hazard areas, as well as the locations of historic cemeteries and historical markers.

Land Elevation and Drainage

Land elevations in the study area generally range between 200 to 350 feet above sea level. The lowest land elevation, of approximately 200 feet, is located at the bend in the Brazos River due south of the intersection of Leonard Road and Riverside Parkway/SH 47. Farther north, where the Brazos River crosses under SH 21, elevation is closer to 240 feet (and near 250 feet at the Little Brazos River crossing). In between these points, the western terminus of Leonard Road near the river is in the 230-foot range. Reference points with some of the highest elevations include:

- An elevation of 344 feet just south of Leonard Road where Leonard re-enters the city limits from the unincorporated “horseshoe” area going toward N. Harvey Mitchell Parkway/FM 2818.
- An elevation of 311 feet between SH 21 and W. 28th Street, just west of the city limits at Quality Park Lane.
- An elevation in the 300-foot range where Jones Road skirts the current city limits to the west-southwest of Riverside Parkway/SH 47.

Within the RELLIS Campus, elevation ranges from 245 feet at one reference point near the Brazos River to the 250-foot range near SH 21 by the campus’ northwest edge, and just above 270 feet at the northernmost point adjacent to the SH 21/SH 47 interchange.

The study area generally drains to the west and south via Thompsons Creek and its smaller tributaries and ultimately toward the Brazos River (and the Little Brazos River on the north side of the study area).

SOURCE:

“Annexation Planning and Possible Options for Annexation in Northwest Brazos County.” City of Bryan Staff Presentation to City Council. January 10, 2017.

Development and Land Use History

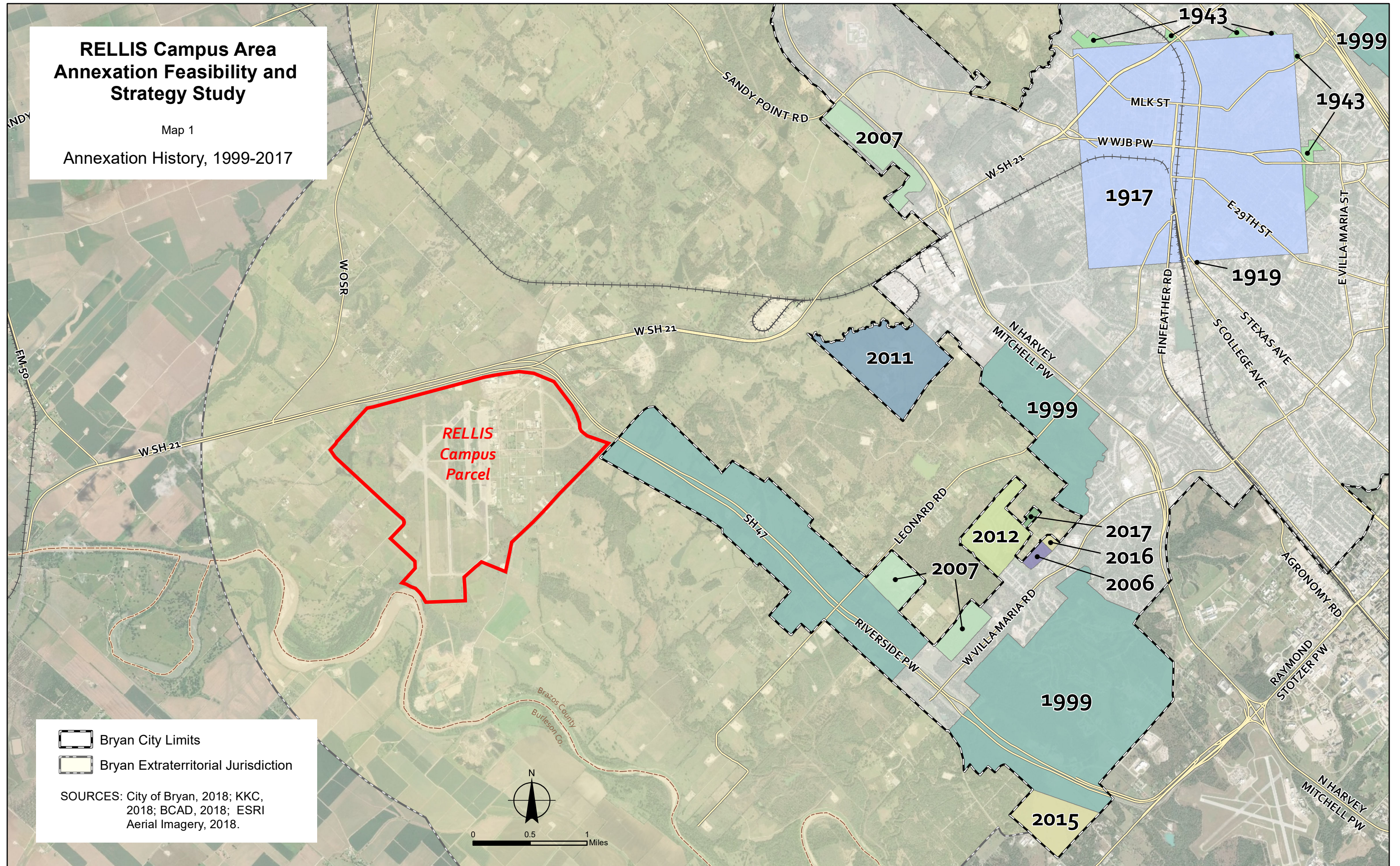
Displayed in **FIGURE 4: Recent Land Use Change in Study Area** is a series of aerial images of the study area, from 1995 to fall 2017, which shows some degree of land use change in recent years, but generally scattered where such activity has happened away from the current fringes of Bryan’s developed area and available public infrastructure. Aside from the relatively recent Edgewater subdivision and other nearby residential developments in the area between Leonard and W. Villa Maria roads, a fair amount of the activity involves energy-related extraction and sand/gravel operations, as well as development of public sites (e.g., RELLIS Campus, Texas A&M Health Science Center, and Brazos County Expo Complex).



Displayed in **MAP 5: New Development Inside the City Limits, 2012-17**, are locations of residential (yellow) and commercial (red) development that has occurred near the study area but within the current city limits between 2012 and 2017. Next, in **MAP 6: Subdivision Activity**, is a view of platted subdivisions in the study area, both within and outside the current city limits. Finally, displayed in **MAP 7: Existing Land Use in 2016** is the mapping of existing land use that was completed for the City’s recent Comprehensive Plan update, *Blueprint 2040*.

RELLIS Campus Area Annexation Feasibility and Strategy Study

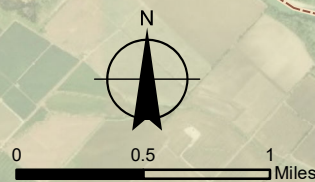
Map 1

Annexation History, 1999-2017



-  Bryan City Limits
-  Bryan Extraterritorial Jurisdiction

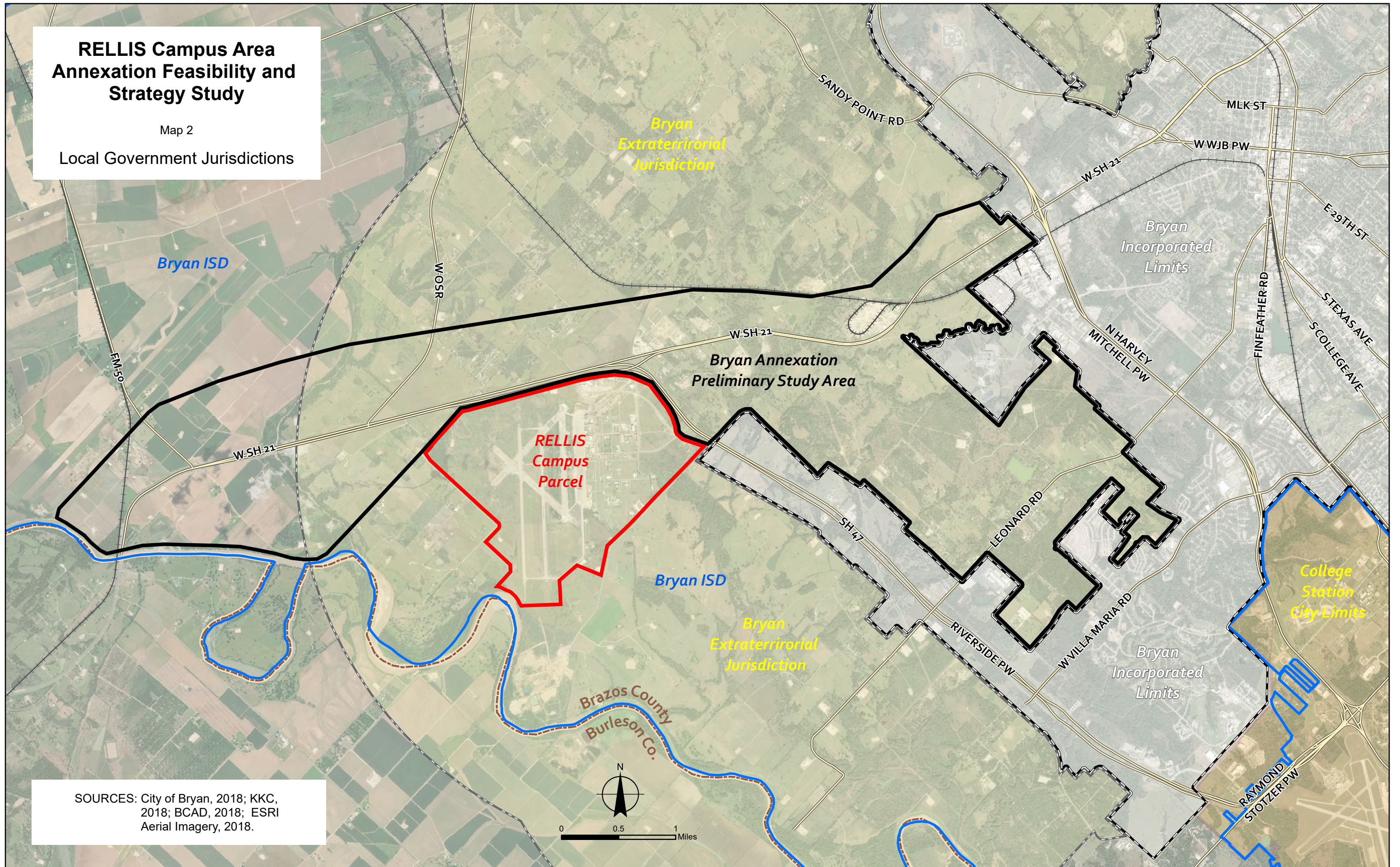
SOURCES: City of Bryan, 2018; KKC, 2018; BCAD, 2018; ESRI Aerial Imagery, 2018.



RELLIS Campus Area Annexation Feasibility and Strategy Study

Map 2

Local Government Jurisdictions

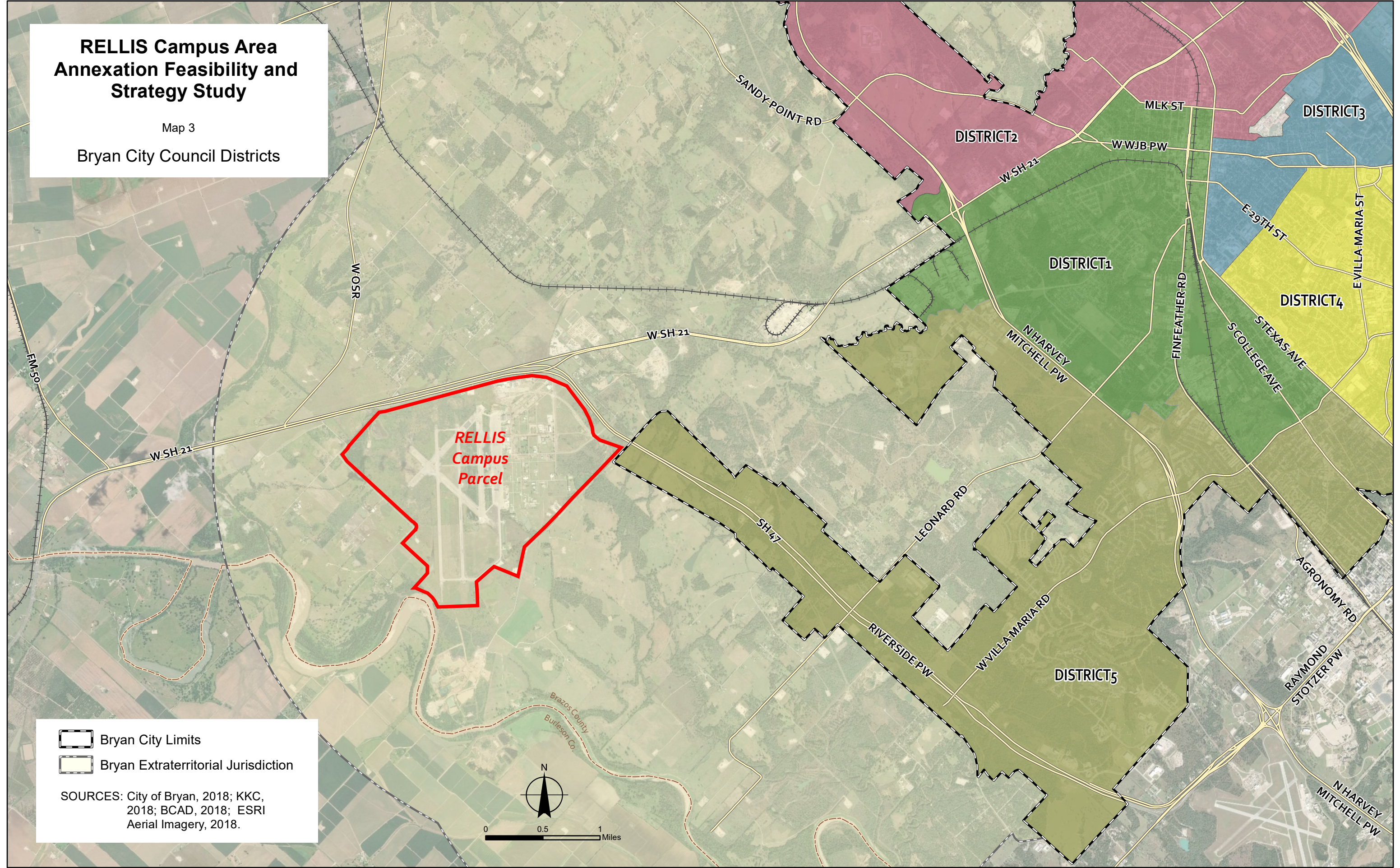


SOURCES: City of Bryan, 2018; KKC, 2018; BCAD, 2018; ESRI Aerial Imagery, 2018.

RELLIS Campus Area Annexation Feasibility and Strategy Study

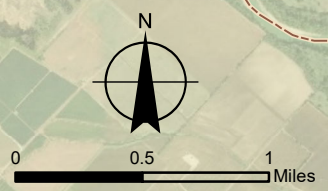
Map 3

Bryan City Council Districts



- Bryan City Limits
- Bryan Extraterritorial Jurisdiction

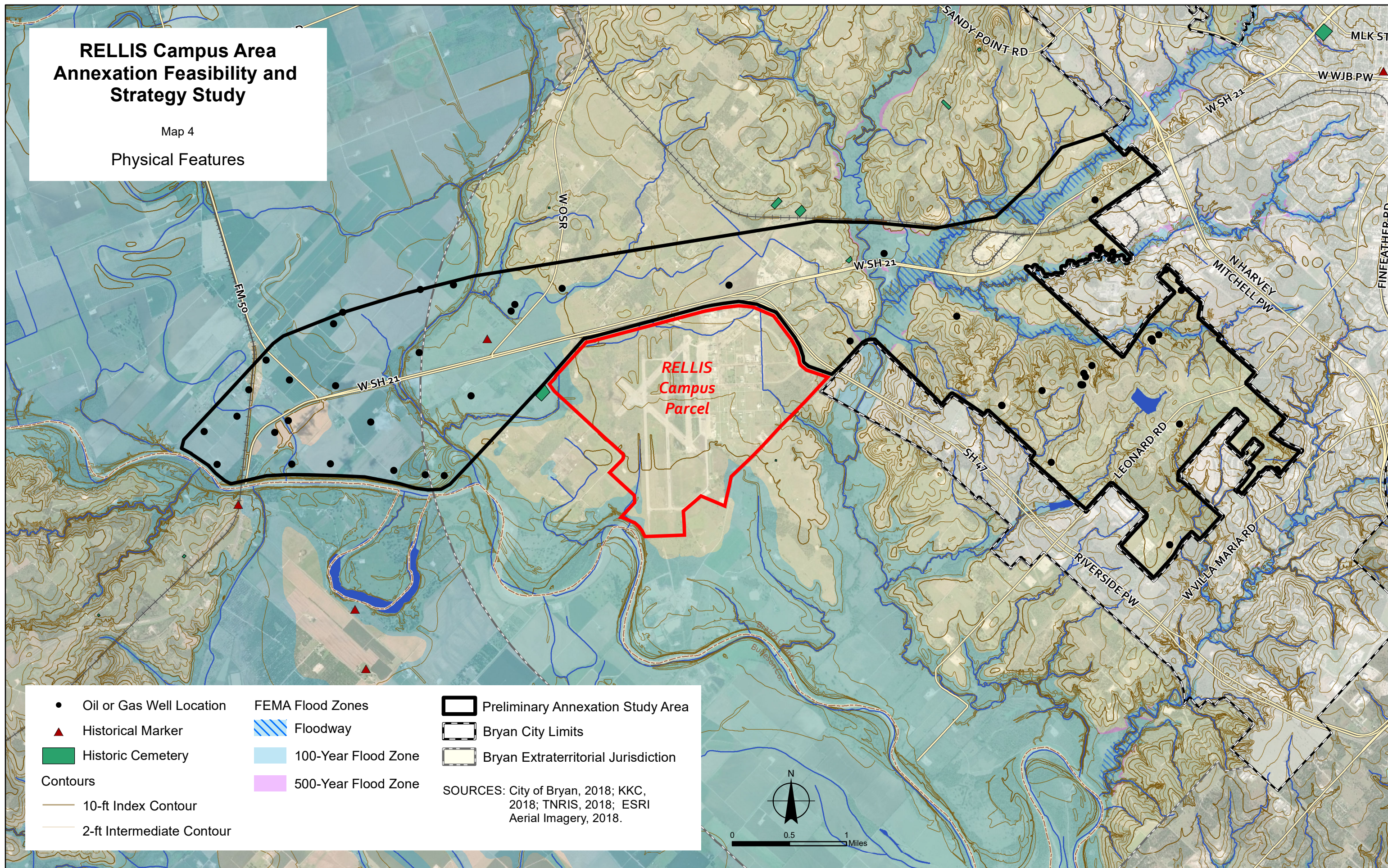
SOURCES: City of Bryan, 2018; KKC, 2018; BCAD, 2018; ESRI Aerial Imagery, 2018.



RELLIS Campus Area Annexation Feasibility and Strategy Study

Map 4

Physical Features



*RELLIS
Campus
Parcel*

• Oil or Gas Well Location	FEMA Flood Zones	▭ Preliminary Annexation Study Area
▲ Historical Marker	Floodway	▭ Bryan City Limits
Historic Cemetery	100-Year Flood Zone	▭ Bryan Extraterritorial Jurisdiction
Contours	500-Year Flood Zone	
10-ft Index Contour		
2-ft Intermediate Contour		

SOURCES: City of Bryan, 2018; KKC, 2018; TNRIS, 2018; ESRI Aerial Imagery, 2018.

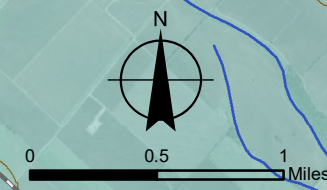
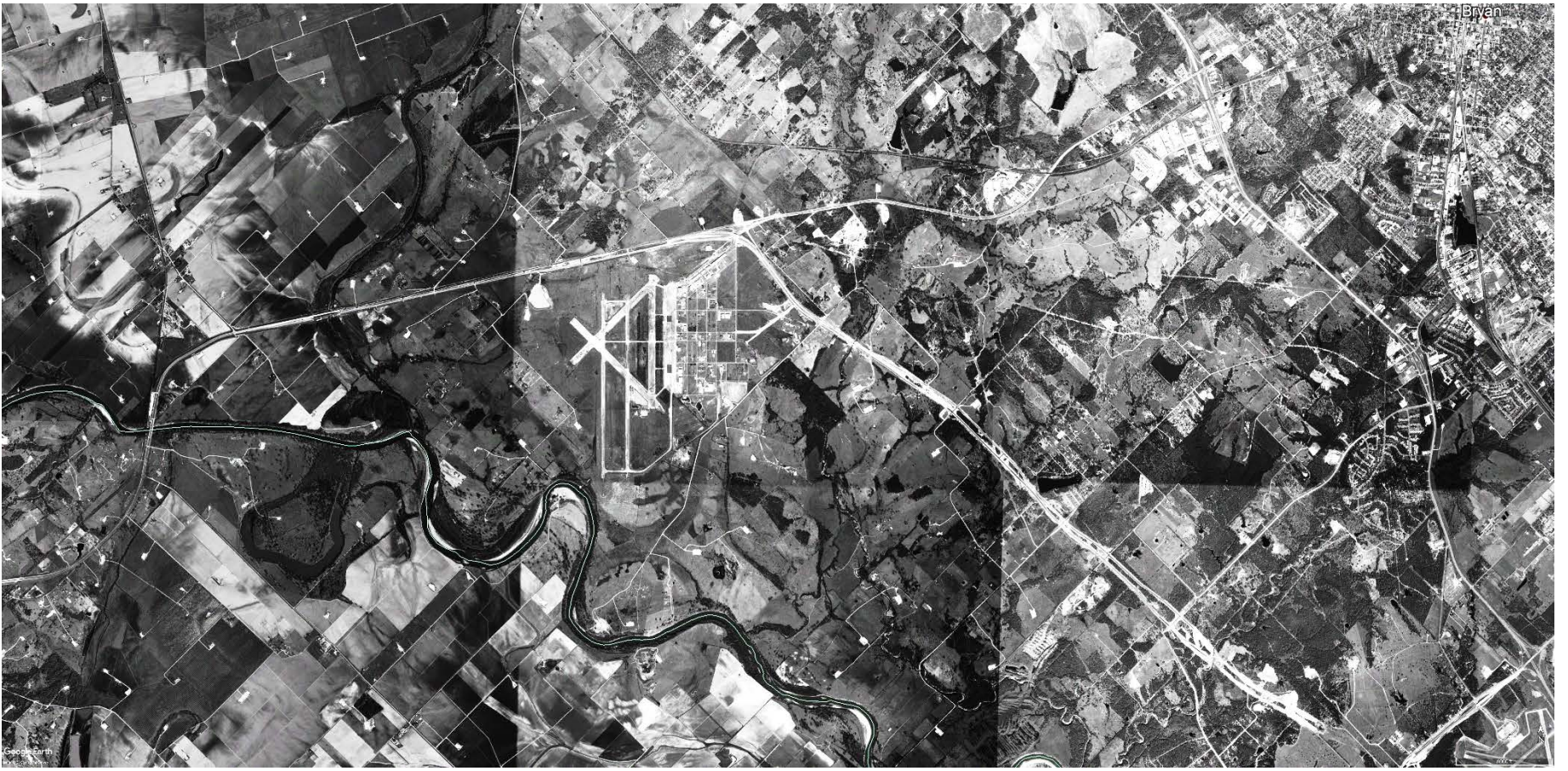


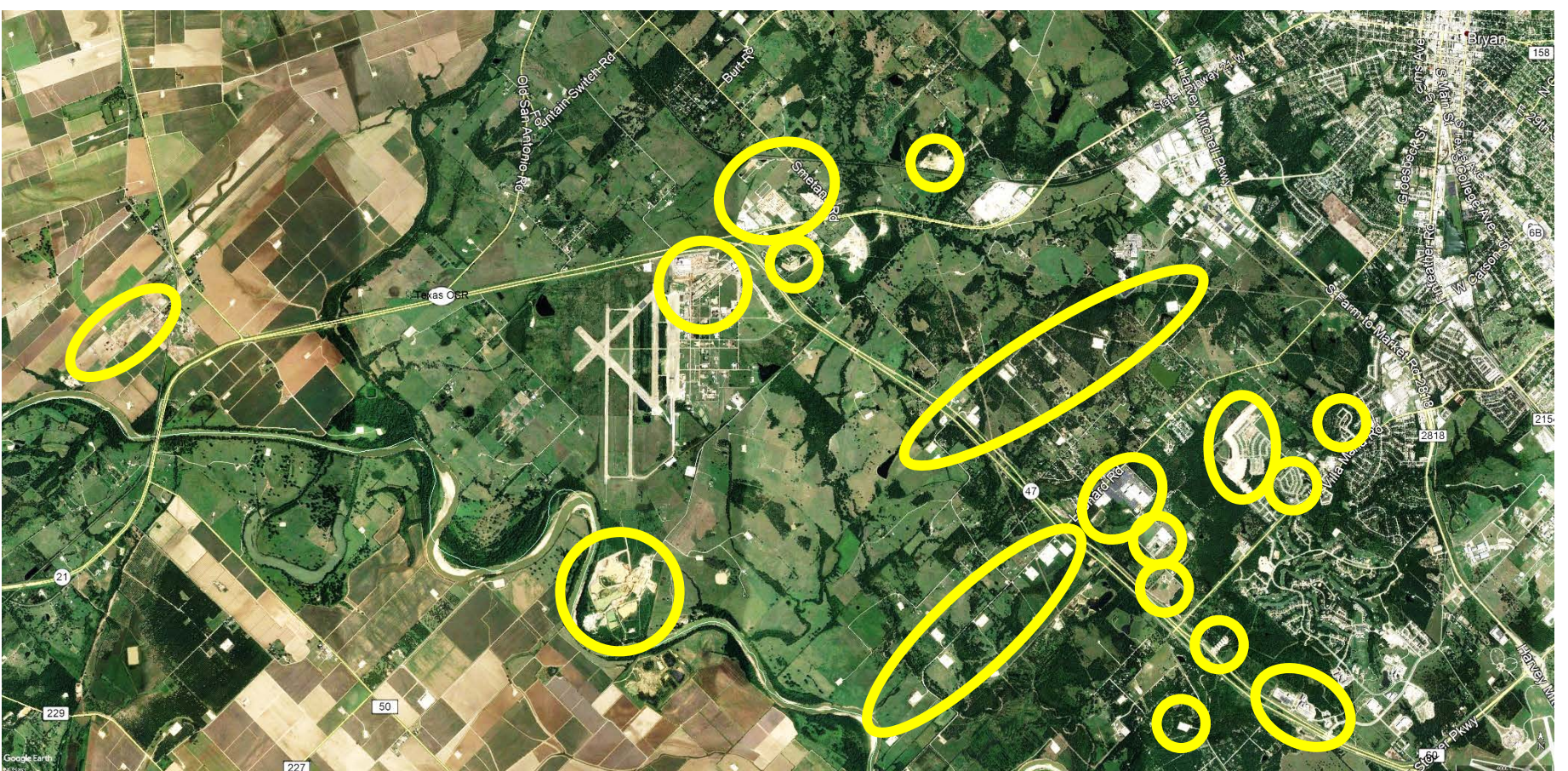
FIGURE 4: Recent Land Use Change in Study Area



February 1995



October 2008



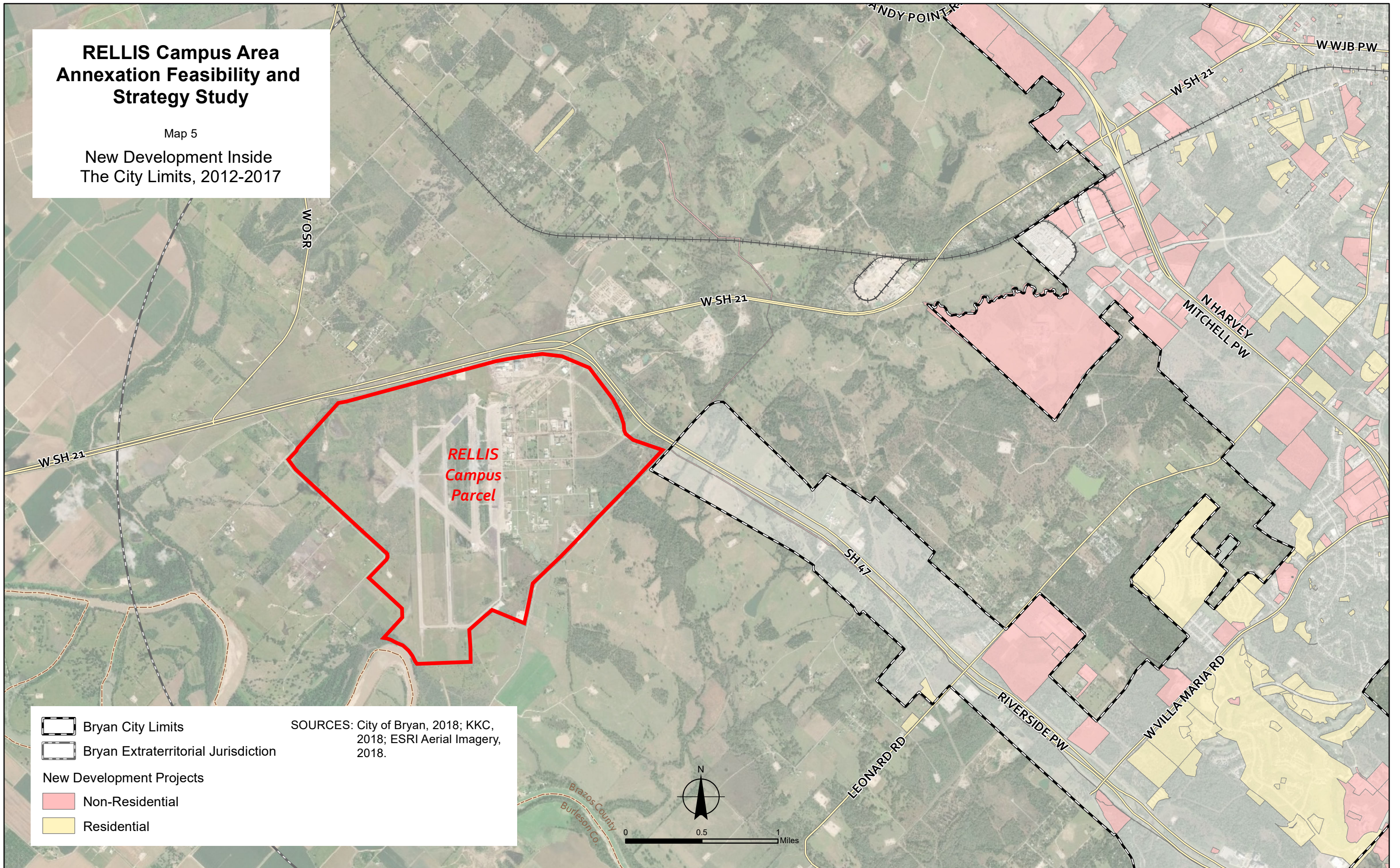
September 2017 (with areas of new development or land use activity highlighted)

SOURCE: Google Earth.

RELLIS Campus Area Annexation Feasibility and Strategy Study

Map 5

New Development Inside
The City Limits, 2012-2017



- Bryan City Limits
- Bryan Extraterritorial Jurisdiction
- New Development Projects**
- Non-Residential
- Residential

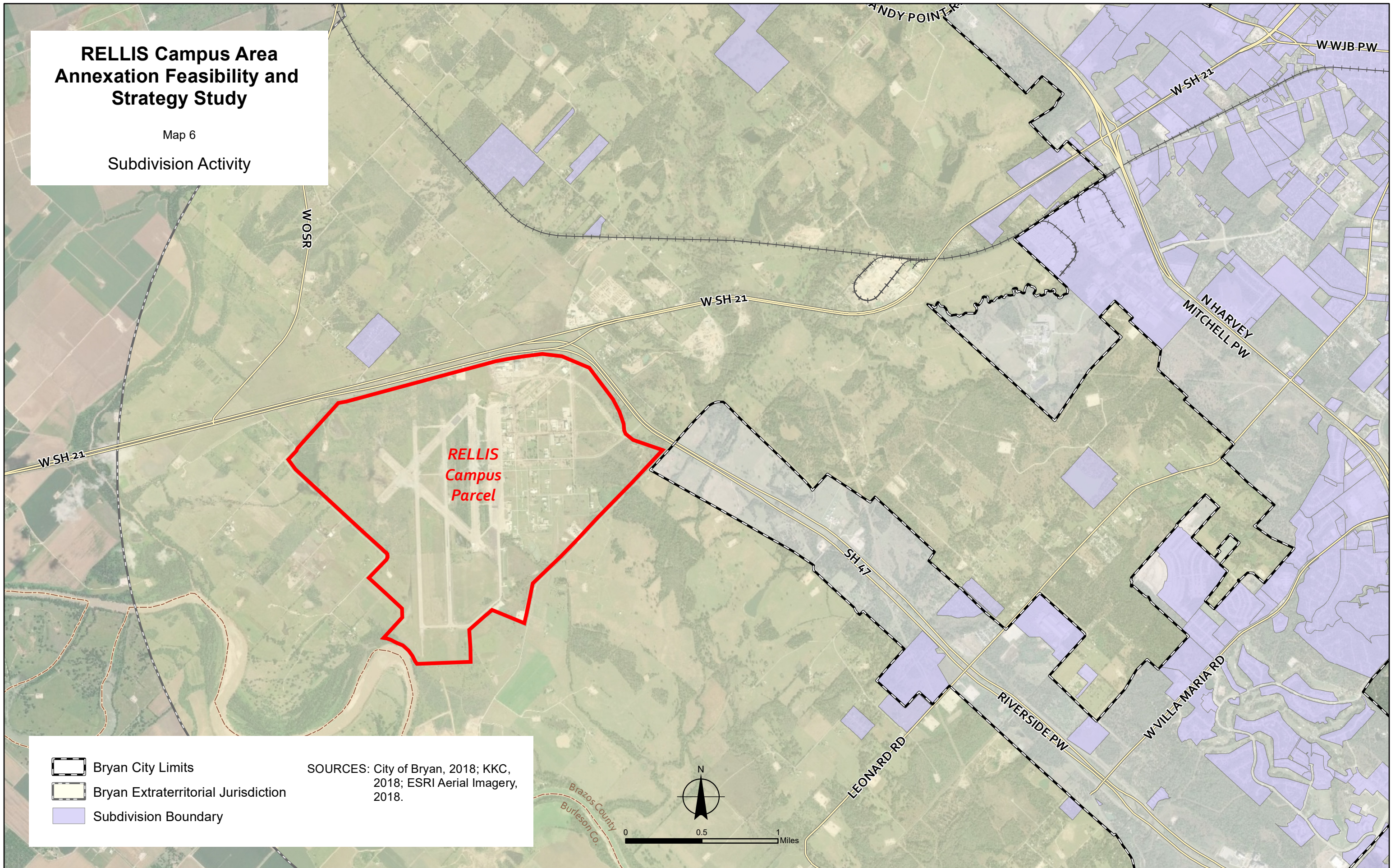
SOURCES: City of Bryan, 2018; KKC, 2018; ESRI Aerial Imagery, 2018.



RELLIS Campus Area Annexation Feasibility and Strategy Study

Map 6

Subdivision Activity

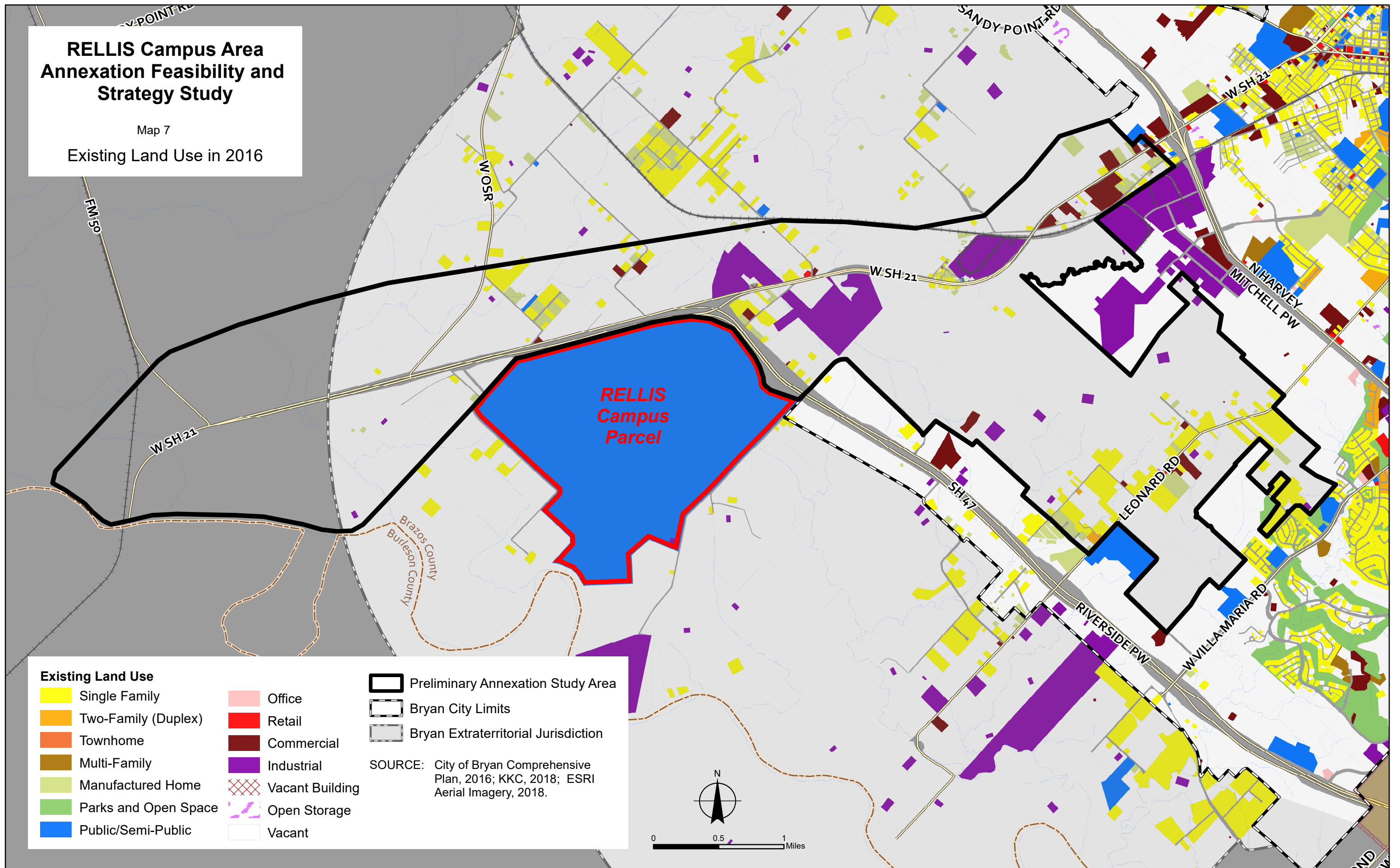


- Bryan City Limits
- Bryan Extraterritorial Jurisdiction
- Subdivision Boundary

SOURCES: City of Bryan, 2018; KKC, 2018; ESRI Aerial Imagery, 2018.

RELLIS Campus Area Annexation Feasibility and Strategy Study

Map 7
Existing Land Use in 2016

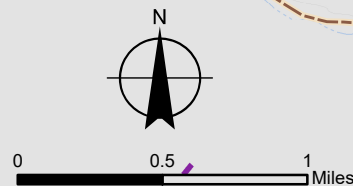


Existing Land Use

- | | |
|---|---|
| Single Family | Office |
| Two-Family (Duplex) | Retail |
| Townhome | Commercial |
| Multi-Family | Industrial |
| Manufactured Home | Vacant Building |
| Parks and Open Space | Open Storage |
| Public/Semi-Public | Vacant |

- | |
|---|
| Preliminary Annexation Study Area |
| Bryan City Limits |
| Bryan Extraterritorial Jurisdiction |

SOURCE: City of Bryan Comprehensive Plan, 2016; KKC, 2018; ESRI Aerial Imagery, 2018.



Socioeconomic Indicators

Given that block-level data from Census 2010 is approaching nearly a decade old, socioeconomic estimates generated locally for transportation planning purposes are another excellent source of information on study area demographics. Like other regional transportation planning agencies, the Bryan/College Station Metropolitan Planning Organization (BCSMPO) utilizes geographic units of analysis known as Transportation Analysis Zones (TAZs) to develop necessary input data for its transportation demand modeling. Displayed in **MAP 8: Transportation Analysis Zones in Study Area** are 13 TAZs that generally correspond with the preliminary study area.

As can be seen on the map, some of the larger TAZs extend well beyond the study area. However, most encompass largely rural areas with only limited residential development or population, so this set of TAZs can be used to approximate key indicators within the study area. Compiled in **TABLE 1: Socioeconomic Estimates by TAZ for 2017** are the BCSMPO’s recently updated estimates of population, households, and employment within each of the relevant TAZs in 2017 (starting on the western end and going clockwise).

TABLE 1: Socioeconomic Estimates by TAZ for 2017

TAZ	Population	Households	Employment
85	71	38	71
114	78	35	12
130	352	122	320
152	20	9	415
106	75	28	99
149	112	40	36
157	242	121	206
221	359	163	7
210	117	56	17
234	1,330*	492*	38
228	155	60	9
199**	0	0	0
217	44	24	4
TOTAL	2,955	1,188	1,234

*Includes developed residential areas within the city limits.

**RELLIS Campus.

SOURCE: BCSMPO.

Transportation Context

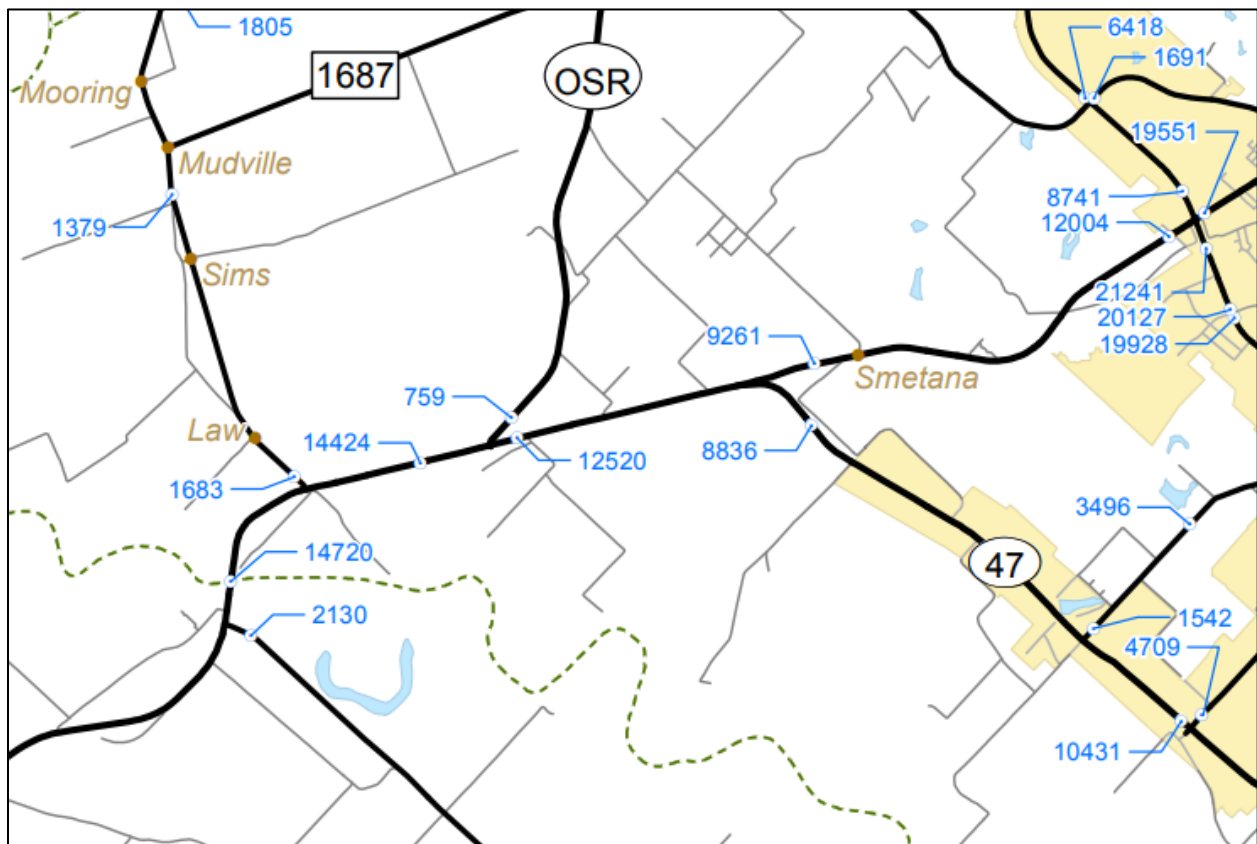
Traffic Data

The Bryan District of the Texas Department of Transportation (TxDOT) collects and publishes data on Annual Average Daily Traffic (AADT) at select locations on area highways and major roadways. Displayed in **FIGURE 5: Annual Average Daily Traffic Volumes in 2016** is the newest available data from 2016 at

various locations in and around the RELLIS Campus area. In particular, the average daily volumes at these key locations were:

- 3,496 on Leonard Road within the unincorporated “horseshoe” area between Riverside Parkway/SH 47 and N. Harvey Mitchell Parkway/FM 2818.
- 8,836 on Riverside Parkway/SH 47, just south of the SH 21 interchange.
- 9,261 on SH 21, just east of the SH 21 interchange.
- 10,431 on Riverside Parkway/SH 47 at W. Villa Maria Road/FM 1179.
- 12,004 on SH 21 near the current city limits.
- 12,520 on SH 21, just east of the SH OSR intersection (and 759 on OSR just north of SH 21).
- 14,424 on SH 21 near the Little Brazos River crossing.
- 14,720 on SH 21 at the Brazos River crossing (and Brazos County line).

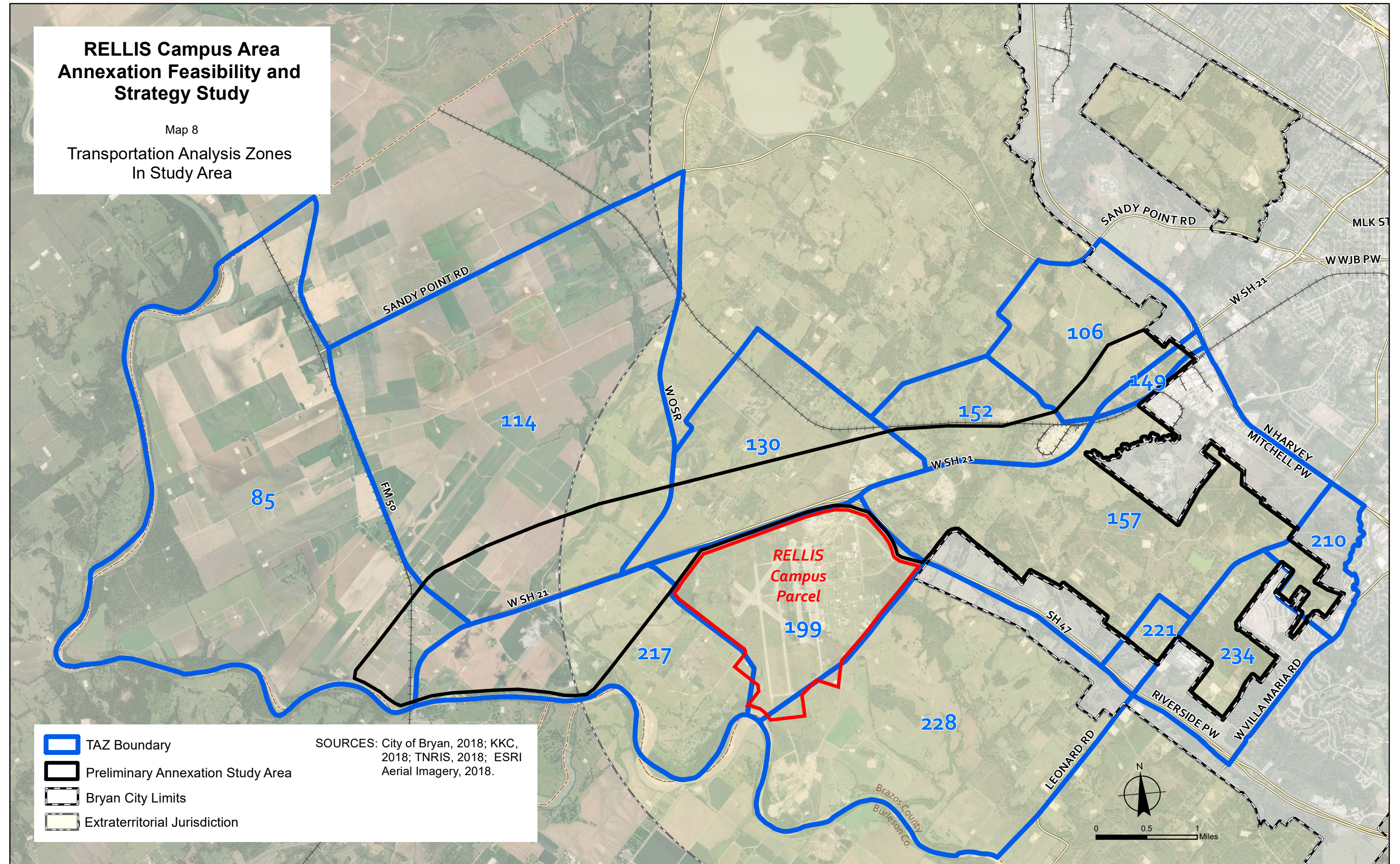
FIGURE 5: Annual Average Daily Traffic Volumes in 2016



SOURCE: Texas Department of Transportation, Bryan District.

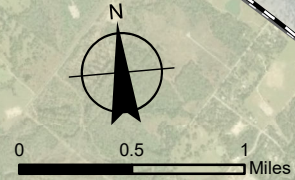
RELLIS Campus Area Annexation Feasibility and Strategy Study

Map 8
Transportation Analysis Zones
In Study Area



- TAZ Boundary
- Preliminary Annexation Study Area
- Bryan City Limits
- Extraterritorial Jurisdiction

SOURCES: City of Bryan, 2018; KKC, 2018; TNRI, 2018; ESRI Aerial Imagery, 2018.



Thoroughfare Plan

Displayed in **MAP 9: City of Bryan Thoroughfare Plan**, is a clip from the City's adopted street system plan, showing the existing and potential future network of roadways on the west side in the vicinity of the RELLIS Campus. The future planning aspects of this and other City and regional plans were factored into the remainder of the study process. This map confirms and illustrates the functional classifications of existing roadways and the locations of existing interchanges and grade-separated intersections as itemized below.

Existing Freeway Classifications (Blue) in RELLIS Campus Vicinity

- Riverside Parkway/SH 47

Existing Super Arterial Classifications (Purple)

- SH 21
- N. Harvey Mitchell Parkway/FM 2818

Existing Major Arterial Classifications (Red)

- W. Villa Maria Road/FM 1179

Existing Minor Arterial Classifications (Green)

- SH OSR
- Pleasant Hill Road (north of SH 21)
- Leonard Road/FM 1688 (primarily east of Riverside Parkway/SH 47)
- HSC Parkway

Existing Thoroughfare Interchanges

- Riverside Parkway/SH 47 at SH 21
- Riverside Parkway/SH 47 at Leonard Road
- Riverside Parkway/SH 47 at W. Villa Maria Road/FM 1179

Existing Thoroughfare Grade Separations

- Riverside Parkway/SH 47 at HSC Parkway

Within the RELLIS Campus vicinity, the most significant existing at-grade street crossings of railroads are all located north of SH 21 on SH OSR, Fountain Switch Road, Smetana Road and Fred Hall Road.

Transit Service

Displayed in **FIGURE 6: Texas A&M University RELLIS Bus Service** is a view of the Route 47 RELLIS shuttle currently operated by Texas A&M Transportation Services. Buses depart from the Wisenbaker Engineering Building, along Bizzell Street on the main campus in College Station, starting at 7:00 a.m. Each successive bus departs 55 minutes later, for a total of 14 shuttle runs each day. Travel time to and from the current RELLIS Campus drop-off point is 25 minutes. The last bus from College Station to RELLIS is at 6:55 p.m., and the last bus from RELLIS is at 7:20 p.m., arriving at Wisenbaker at 7:45 p.m.

Brazos Transit District currently operates six fixed routes in Bryan, but, as displayed in **FIGURE 7: Brazos Transit District Routes**, these routes are focused in more populated areas away from the RELLIS Campus vicinity. Only two routes, Green and Purple, have any segments west of N. Harvey Mitchell Parkway/FM 2818, and still at some distance from Riverside Parkway/SH 47.

FIGURE 6: Texas A&M University RELLIS Bus Service



SOURCE: Texas A&M Transportation Services.

RELLIS Campus Area Annexation Feasibility and Strategy Study

Map 9

City of Bryan Thoroughfare Plan

Road Classification

- Freeway
- Freeway - Proposed
- Super-Arterial (6 Lanes)
- Super-Arterial - Proposed (6 Lanes)
- Major Arterial (4 Lanes)
- Major Arterial - Proposed (4 Lanes)
- Minor Arterial
- Minor Arterial - Proposed
- Major Collector
- Major Collector - Proposed

- Existing Grade Separation
- Proposed Grade Separation
- Existing Interchange
- Proposed Interchange
- Bryan City Limits
- Bryan Extraterritorial Jurisdiction

SOURCES: City of Bryan, 2018; KKC, 2018; ESRI Aerial Imagery, 2018.

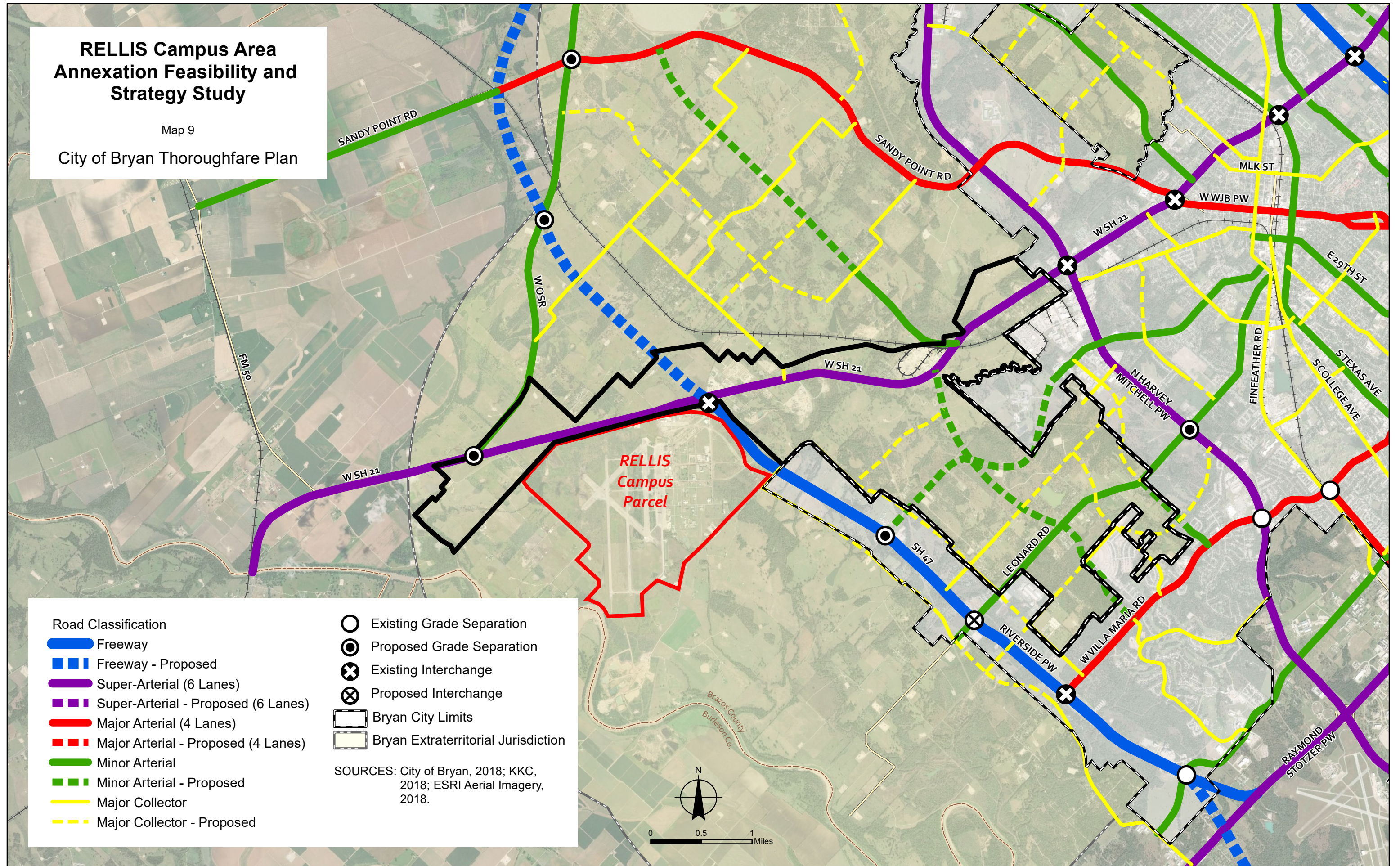
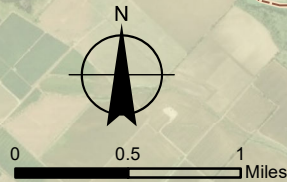
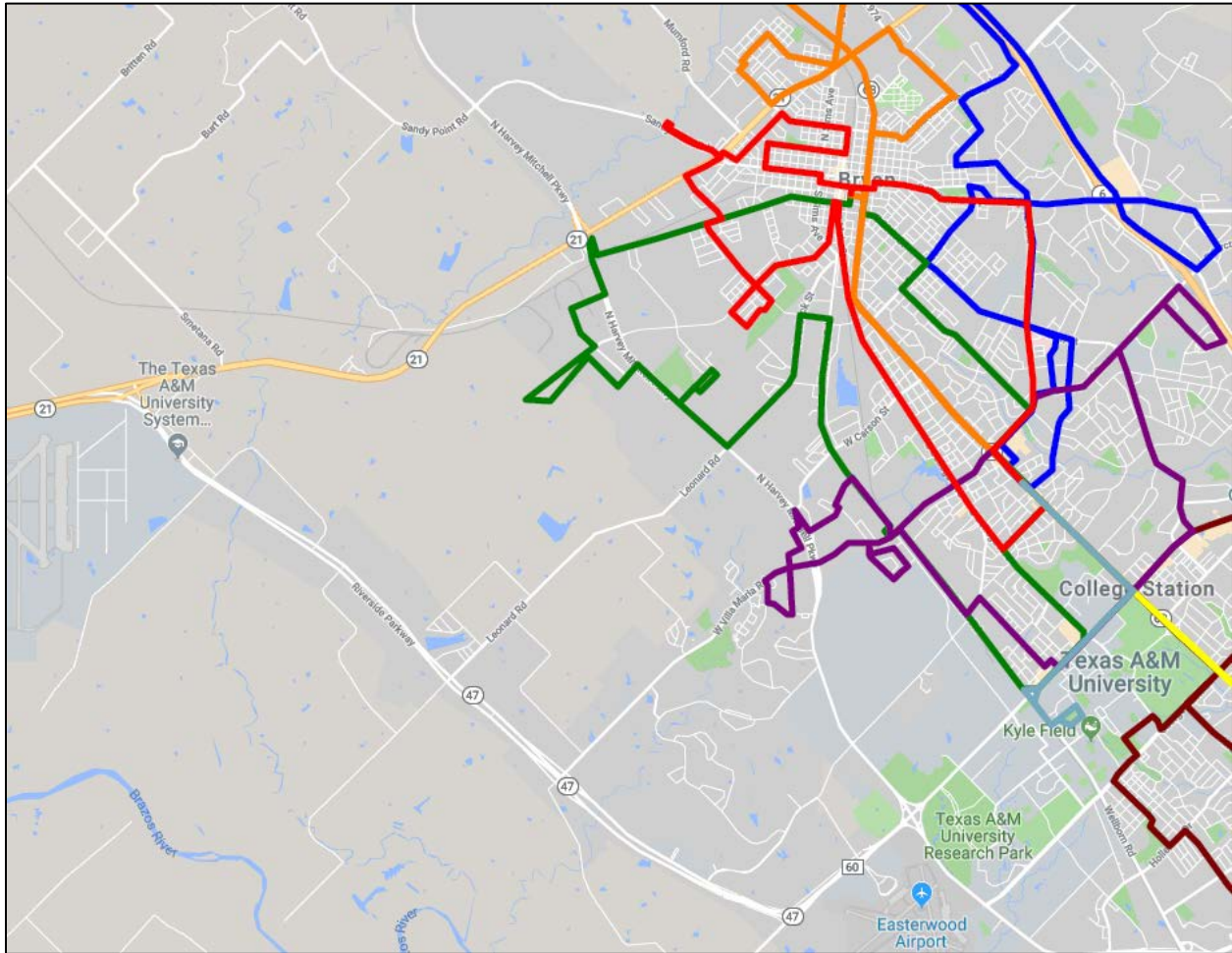


FIGURE 7: Brazos Transit District Routes



SOURCE: Brazos Transit District.

Parcel Pattern and Data

Parcel information for the preliminary study area was assessed utilizing data from the Brazos County Appraisal District. Displayed in **MAP 10: Existing Parcels in Annexation Study Area** is the current parcel coverage and pattern in the RELLIS Campus vicinity.

Related data for this overall set of parcels is compiled below in **TABLE 2: Selected Data Points from RELLIS Campus Area Parcels**, recognizing that some parcels extend beyond the preliminary study area boundary, similar to the Transportation Analysis Zones discussed above.

TABLE 2: Selected Data Points from RELIS Campus Area Parcels

Overall Statistics	
Total Number of Parcels	593
Total Acreage	9,345.9
Number of Parcels with No Improvements	226
Total Land Value	\$53,569,774
Total Improvement Value	\$39,888,976
Total Market Value (Land + Improvements)	\$93,458,750
Parcel Size	
Average Parcel Size (in acres)	15.76
Median Parcel Size (in acres)	2.28
Largest Parcel Size (in acres)	745.7
Smallest Parcel Size (in acres)	0.01
Land and Improvement Values	
Average Land Value	\$90,337
Median Land Value	\$39,670
Highest Land Value	\$3,000,000
Lowest Land Value	\$100
Average Improvement Value	\$67,266
Median Improvement Value	\$10,540
Highest Improvement Value	\$2,432,800
Lowest Improvement Value	\$0
Dwellings	
Number of Parcels with Dwelling Units	315
Average Dwelling Unit Age	40 years (1978)
Median Dwelling Unit Age	39 years (1979)
Oldest Dwelling Unit Age	78 years (1940)
Newest Dwelling Unit Age	1-2 years (2016)

SOURCE: Brazos County Appraisal District.

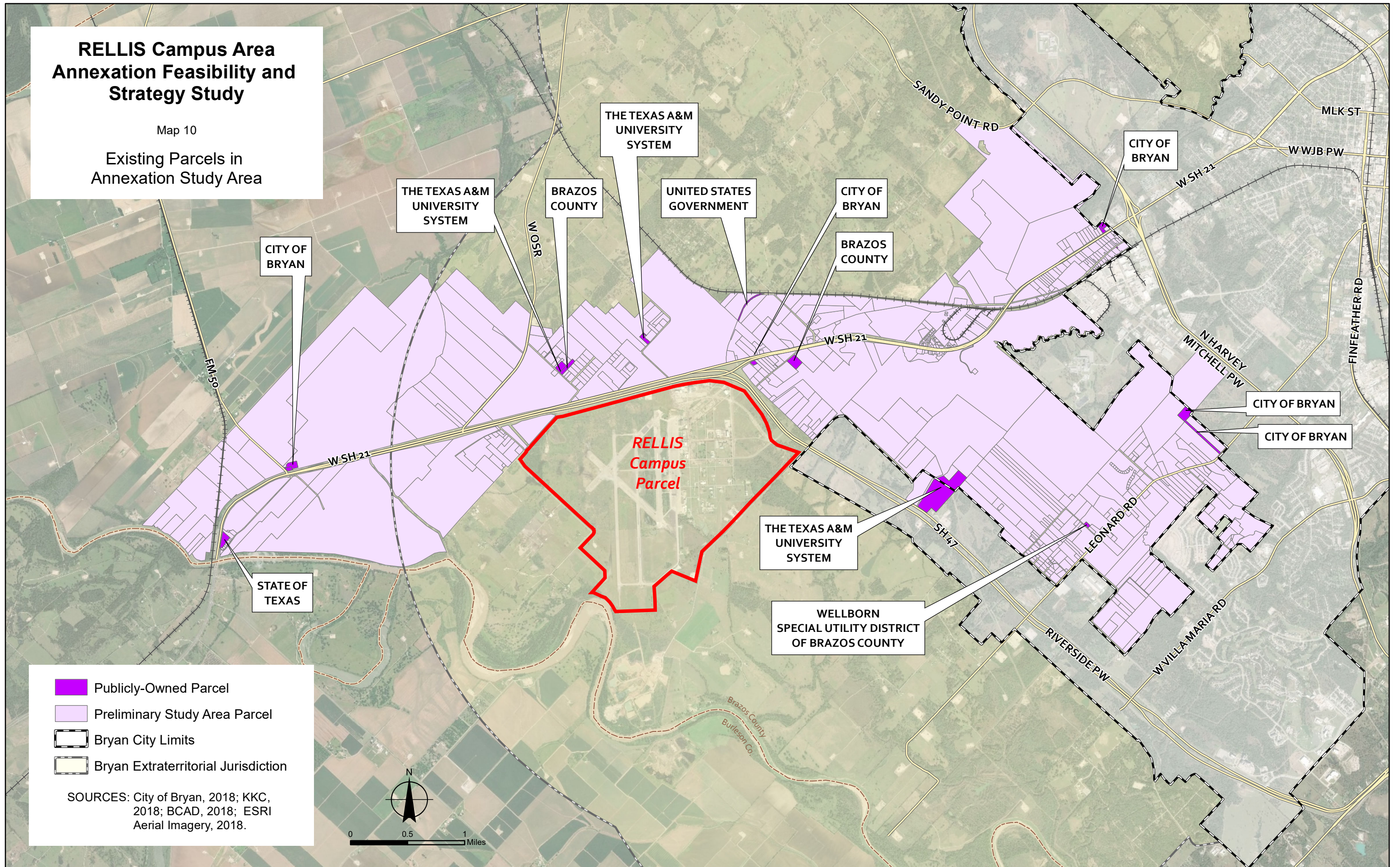
Among the nearly 600 parcels researched, 18 are listed as being in public ownership:

- City of Bryan (7 parcels)
- Texas A&M University System (3)
- Wellborn Special Utility District of Brazos County (2)
- Brazos County Precinct 4 - Volunteer Fire Department (1)
- Brazos County (1)
- State of Texas (1)
- U.S. Government (1)

RELLIS Campus Area Annexation Feasibility and Strategy Study

Map 10

Existing Parcels in
Annexation Study Area



- Publicly-Owned Parcel
- Preliminary Study Area Parcel
- Bryan City Limits
- Bryan Extraterritorial Jurisdiction

SOURCES: City of Bryan, 2018; KKC, 2018; BCAD, 2018; ESRI Aerial Imagery, 2018.

- Riverside Wastewater Treatment Plant, LLC (1)
- Cemetery on Smetana Road (1)

Zoning of Nearby Incorporated Areas

As displayed in **MAP 11: Zoning of Nearby Incorporated Areas**, the current zoning for areas immediately adjacent to the preliminary study area includes a variety of zoning districts, as well as two overlays zones: the SH 47 Corridor Overlay District, and the West Villa Maria Corridor Overlay District.

Relevant zoning district descriptions, as provided in the City’s zoning ordinance (Chapter 130 of the City Code), are included in **TABLE 3: Zoning District Descriptions**. The table begins with districts in the Riverside Parkway/SH 47 area and then moving counterclockwise around the unincorporated “horseshoe” area.

TABLE 3: Zoning District Descriptions

District	General Purpose and Description
A-O, Agricultural-Open District	This district is intended to provide a location for principally undeveloped or vacant land situated on the fringe of an urban area and used primarily for agricultural purposes, but may become an urban area in the future.
MU-1, Mixed Use Residential District	This district is intended as an interim zoning classification to aid in transition of certain areas of the city to a permanent zoning district classification in the future. The uses in the MU-1 district are envisioned to be primarily single-family detached dwellings.
C-2, Retail District	This district is intended to provide locations for various types of general retail trade, business and service uses. The district allows shopping areas or uses which are generally compatible near or adjacent to, but not usually directly in, residential neighborhoods.
RD-5, Residential District - 5000	This district is intended to provide for development of detached dwelling units on lots of not less than 5,000 square feet.
PD, Planned Development District	This district accommodates planned associations of uses developed as integral land use units such as industrial districts, offices, commercial or service centers, shopping centers, residential developments of multifamily or mixed housing including attached single-family dwellings or any appropriate combination of uses which may be planned, developed or operated as integral land use units either by a single owner or a combination of owners. A PD district may be used to permit new or innovative concepts in land utilization not permitted by other zoning districts.
RD-7, Residential District - 7000	This district is intended to be composed of detached dwelling units on lots of not less than 7,000 square feet.
C-1, Office District	This district is established to create a flexible district for low intensity office and professional uses generally in smaller buildings.

District	General Purpose and Description
MF, Multiple-Family Residential District	This district is a residential district intended to provide the highest residential density of a maximum of 25 dwelling units per acre.
C-3, Commercial District	This district is intended predominantly for heavy retail and commercial uses of a service nature which typically have operating characteristics or traffic service requirements generally compatible with typical retail or shopping, but generally not with residential environments.
I, Industrial District	The I industrial district is intended primarily for the conduct of manufacturing, assembling and fabrication, and for warehousing, wholesaling and service operations which may depend upon frequent customer or client visits.

SOURCE: City of Bryan.

The SH 47 and West Villa Maria Corridor Overlay Districts supplement the standards of the underlying base districts with new or different standards, which may be more restrictive. The intent is to exercise greater control over the aesthetic and functional characteristics of development along major thoroughfares. For these particular overlays, this includes standards for screening, building materials, utility equipment, vehicle loadings, and solid waste, among others.

Existing Public Safety and Other Services

As displayed in **MAP 12: City of Bryan Police and Fire Locations**, the Bryan Police Department operates from its headquarters location downtown, with patrol officers allocated across the city. The current Bryan Fire Department location closest to the RELLIS Campus vicinity is Station Number 5 at 2052 W. Villa Maria Road/FM 1179, between N. Harvey Mitchell Parkway/FM 2818 and Riverside Parkway/SH 47.

The Brazos County Sheriff provides police coverage in unincorporated areas. Unincorporated areas on the west side of Bryan, in the vicinity of the RELLIS Campus, are served by the Brazos County Precinct 4 Volunteer Fire Department (VFD). The VFD's Central Station (Station Number 1) is located just across SH 21 from the RELLIS Campus at 3098 Fazzino Lane. The Brushy Station (Station Number 3) is located south of the area at 6357 Raymond Stotzer Parkway/FM 60.

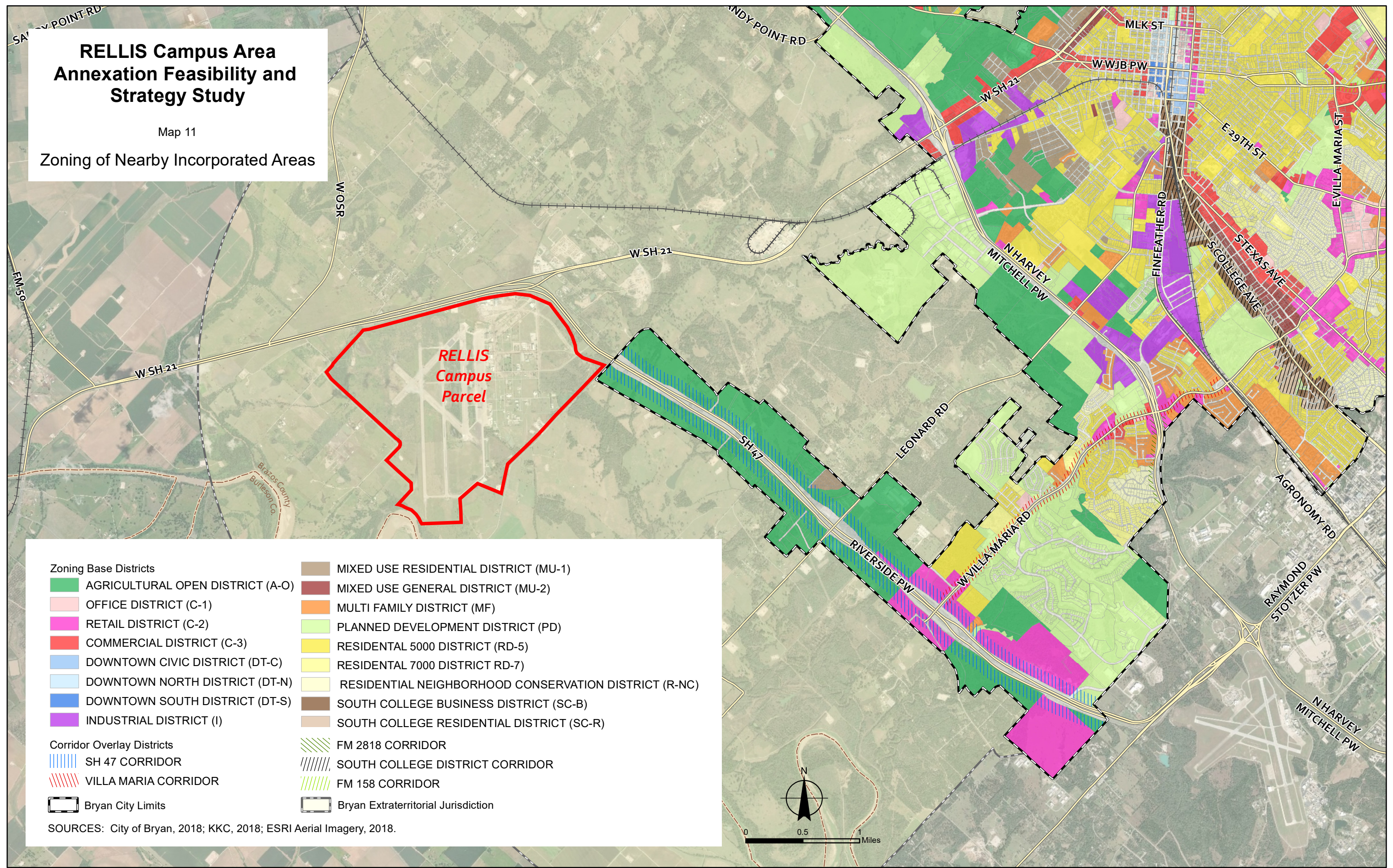
Other service providers relevant to the study area, to be considered further through this study, include:

- Atmos Energy (natural gas).
- Brazos County (roads/bridges, drainage, solid waste disposal options, emergency management).
- Bryan Independent School District (primary/secondary education).
- Bryan Texas Utilities, BTU (electricity).
- Frontier Communications and Suddenlink Communications (cable television, Internet, phone).

RELLIS Campus Area Annexation Feasibility and Strategy Study

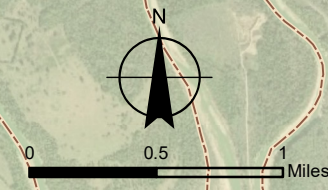
Map 11

Zoning of Nearby Incorporated Areas



- | | |
|-----------------------------------|---|
| Zoning Base Districts | MIXED USE RESIDENTIAL DISTRICT (MU-1) |
| AGRICULTURAL OPEN DISTRICT (A-O) | MIXED USE GENERAL DISTRICT (MU-2) |
| OFFICE DISTRICT (C-1) | MULTI FAMILY DISTRICT (MF) |
| RETAIL DISTRICT (C-2) | PLANNED DEVELOPMENT DISTRICT (PD) |
| COMMERCIAL DISTRICT (C-3) | RESIDENTIAL 5000 DISTRICT (RD-5) |
| DOWNTOWN CIVIC DISTRICT (DT-C) | RESIDENTIAL 7000 DISTRICT RD-7) |
| DOWNTOWN NORTH DISTRICT (DT-N) | RESIDENTIAL NEIGHBORHOOD CONSERVATION DISTRICT (R-NC) |
| DOWNTOWN SOUTH DISTRICT (DT-S) | SOUTH COLLEGE BUSINESS DISTRICT (SC-B) |
| INDUSTRIAL DISTRICT (I) | SOUTH COLLEGE RESIDENTIAL DISTRICT (SC-R) |
| Corridor Overlay Districts | FM 2818 CORRIDOR |
| SH 47 CORRIDOR | SOUTH COLLEGE DISTRICT CORRIDOR |
| VILLA MARIA CORRIDOR | FM 158 CORRIDOR |
| Bryan City Limits | Bryan Extraterritorial Jurisdiction |

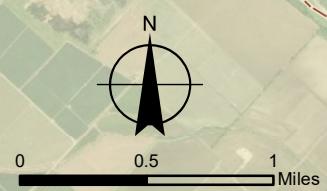
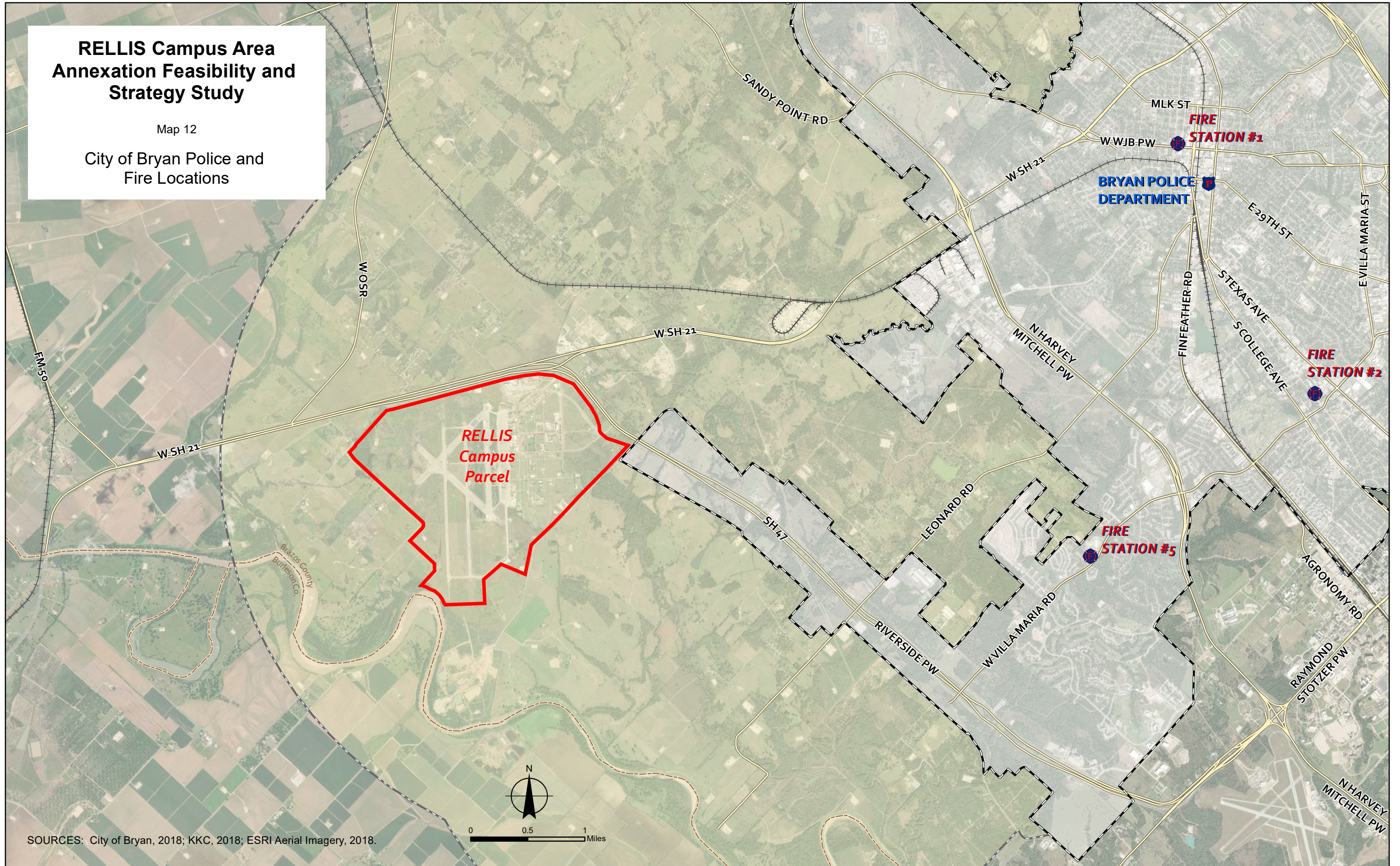
SOURCES: City of Bryan, 2018; KKC, 2018; ESRI Aerial Imagery, 2018.



RELLIS Campus Area Annexation Feasibility and Strategy Study

Map 12

City of Bryan Police and
Fire Locations



SOURCES: City of Bryan, 2018; KKC, 2018; ESRI Aerial Imagery, 2018.

Annexation Context

This report section provides more information about Texas A&M University System plans for the RELLIS Campus, the City of Bryan’s current ability to annex additional territory, and the City’s general policy on annexation.

Implications of RELLIS Campus

The Texas A&M University System released its *RELLIS Campus Master Plan* in late February 2018, shortly after this study was initiated. The master plan is a 223-page document providing both a high-level vision and specific details and renderings of how the campus and its various components may develop and evolve over the next 20 years and beyond. The following information was gleaned from the master plan as most pertinent to the annexation study in terms of the potential scale, nature, implications and timing of the envisioned development of the Texas A&M System RELLIS Education and Research Campus (RELLIS Campus):

Campus Size

The intent of the campus master plan, as stated in its introduction, is to “transform the largely undeveloped 1,877 acres of land into a multi-institutional research, testing, and workforce development campus that directly benefits society at large.” Nearly 900 acres on the current site are in pasture use.

Campus Uses and Functions

The master plan summarizes the current and projected future use mix on campus:

The campus currently accommodates a wide range of uses such as research in agricultural and life sciences, veterinary medicine, and various engineering and training activities. The aircraft runways, a residual from the previous Bryan Army Air Field and Bryan Air Force Base, activated during World War II and the Korean War, respectively, provide facilities for vehicle and infrastructure testing as well as law enforcement and security training. Over time, some of these uses will be retained, while others will be replaced or augmented with academic programs and institutes, research entities, partner agencies and companies, and other collaborators.

Figure 2 in the Existing Conditions portion of this report includes a conceptual development plan rendering from the master plan that pinpoints the locations of projected campus activities. The master plan elaborates on the objective of creating amenity and activity zones in support of an innovation environment, where interaction and socializing among the on-site population enhances the campus experience. Such activities will be concentrated in the Central Core area of the campus, accessible to the entire campus population, and will take the form of pedestrian streets, parks, plazas, and collections of active uses such as:

- Conference or event spaces for campus tenants or outside groups;
- Food and coffee venues (including space for food trucks and other special events);
- Health, wellness and recreation facilities;
- Performance or special event spaces, indoors and out, for campus-wide or regional events; and
- Cultural facilities such as museums or galleries.

While laying out this vision, the master plan also includes six development principles, the first of which is Flexibility:

The development of RELLIS will occur over many years and while the core mission will remain, the specific tenants, users, and the focus of many activities may evolve. It is especially important to put in place a development framework that can adapt to changing facilities and operations while retaining the coherence and uniqueness of the campus environment.

Development Footprint and Intensity

The RELLIS Campus currently has approximately 500,000 gross square feet in existing buildings. The master plan assumes adding 4.9 million new gross square feet, intended to provide flexibility for “the projected facilities as well as undetermined infill development.” Additionally, the Executive Summary states that the current built space “may grow by up to eight million new gross square feet to fully support the A&M System’s growth needs.” This is a longer-term forecast based on the overall site capacity, recognizing that:

Research campuses typically increase their densities over time. Often beginning with lower density buildings, as they become more successful and attract more tenants, land becomes more scarce and development intensifies. In some cases, such as Stanford Research Park and Research Triangle Park, growth after many decades can evolve to include uses never previously anticipated, such as employee housing or extensive retail and conference facilities. University campuses tend to be of a higher density than research parks, especially as demands for enrollment growth occur without land for acquisition. For reference the Texas A&M College Station main campus has a density over twice that of its Research Campus.

The master plan uses the concept of Floor Area Ratio (FAR) – the ratio of square feet of developed building area to square feet of site area – to frame the potential intensity of campus development. The projected buildout numbers in the master plan include:

- 680 acres of developed area.
- Only 11 percent of the site as ultimate built area (680 of 1,877 total acres).
- Average campus-wide floor area ratio (FAR) of 0.16, with a peak of 0.22 in the Central Core district and 0.21 in the Public Perimeter development area along Riverside Parkway/SH 47. The lowest FARs of 0.08-0.09 would be in the Training/Testing district (southeast area toward Goodson Bend Road) and the Flex/Public Secure Perimeter area (northwest toward SH 21).
- Combined 4,880,000 gross square feet of new building area, with the largest amount by far in the Central Core district (1.8 million).

The master plan points out that, “Because campus needs are constantly changing, the exact phasing of developments are not explicitly shown”:

Although a significant number of buildings are shown, much of the developable area remains in open space, and all parking is shown in surface lots. Improvements to open space, road and utility infrastructure, thresholds, and signage systems will be required throughout the development timeline in order to support campus functionality and to attract future partners and entities.

The master plan also emphasizes the importance of managing the development pattern in the Central Core and its amenity and active use features for students, researchers and visitors as “special events, conferences, and recreation can enliven this area and attract all campus users as well as outside parties.” A coherent development pattern on the campus’s west side is also highlighted, given that it will likely have less density of use or activity than the mixed-use Central Core but “can accommodate major research partners and can include significant usable open space for tenants.”

Finally, related to parking, the master plan anticipates the eventual feasibility and desirability of parking structures as development densities increase in various portions of the campus. The master plan provides that such structures “should be designed to be minimally visually intrusive, generally located behind or adjacent to buildings and buffered with vegetation,” and should contain shared car parking and charging stations.

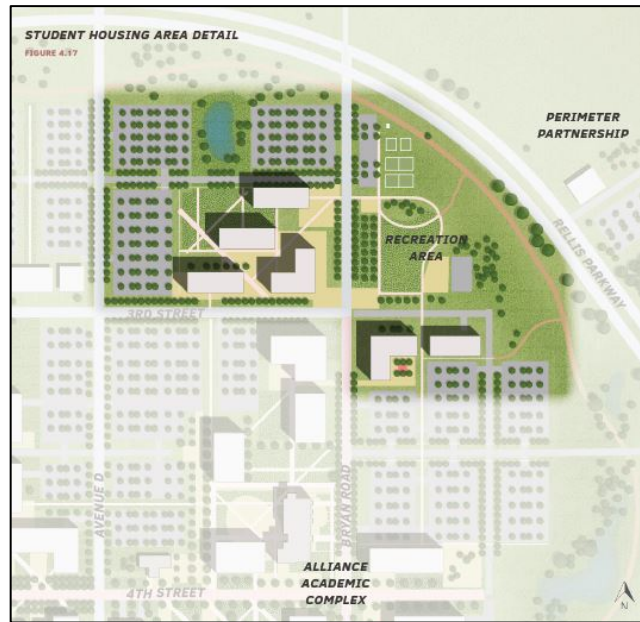
On-Campus Housing

The master plan anticipates that the development and growth of on-campus housing “is likely to be incremental” and indicates two locations on the illustrative development plan. As shown in the upper graphic on this page, one area is in the northeast part of the campus, at the north edge of the Central Core district and near the perimeter partnership area along Riverside Parkway/SH 21. The development plan devotes 25 acres in this location to “graduate/guest housing” within six projected apartment buildings, for a total of +/- 1,500 beds.

The lower graphic shows a second “residential opportunity” southeast of the Central Core, “envisioned as an academic community for upper-division and graduate students, visiting faculty or researchers, and institutional guests.” The location is described as providing proximity to the campus’s primary functions while allowing options for retreat. Both apartment-style and townhouse options are indicated in the conceptual layout, with convenient access to trails and recreational open space:

For this type of housing, more privacy is typically desired. Units intended for families or older students might include a yard or porch. Shared outdoor space can be provided adjacent to lounge, laundry, or study areas.

This secondary area encompasses 24 acres in all, with two apartment buildings and 60 townhouse buildings, for a total of +/- 500 more beds.



A broader multi-use concept is also described for this location:

Depending on the ultimate program for this type of housing and the demand for additional campus amenities, a retail or other mixed use site might be provided off Goodson Bend Road to the east of the housing area. This could be used for short stay housing, convenience retail, school, child care, or other uses and could be integrated with the housing as a small village.

Quality, Innovative Development

In addition to Flexibility, the six development principles for the RELLIS Campus include Unique Image and Smart Campus. The image principle aims to retain aspects of the campus's historic character and grassland prairie setting "while adding state-of-the-art new facilities will help to create a memorable environment that will be attractive to researchers, students, and staff and will aid in recruitment and retention." The smart campus principle emphasizes smart technologies for buildings, the campus (e.g., smart grid, water efficiency, and recycling), and the systems to operate and connect the campus (e.g., autonomous shuttles, car and bike share facilities, etc.).

In support of these principles, the master plan includes extensive RELLIS Campus Design Guidelines that complement Texas A&M University System Facility Design Guidelines and address building architecture, public realm treatments, preservation and maintenance of open space, site and perimeter landscaping, and internal, perimeter and entryway signage plus wayfinding signage. District-specific provisions outline additional or relaxed conditions for areas outside the Central Core. The master plan also recognizes the campus's high visibility along SH 21 and Riverside Parkway/SH 47 and refers to "using campus edges and entries to communicate the RELLIS brand":

The edges of the campus, retained in their natural, grassland and forested form, will be an important visual image for the campus to nurture. Vistas into the campus and views of the major facilities along the north edges of the site offer the contrasting research campus image.

Campus Population and Visitors

A master plan appendix titled Potential Future Facilities provides specific projected numbers for various facets of the RELLIS Campus. This includes academic components with more definite building plans and numbers of anticipated students:

- 2,000-2,500 students within five years through RELLIS Academic Complex Phases 1a and 1b.
- Another 2,000-2,500 students in the 5-10 year timeframe through RELLIS Academic Complex Phase 2.
- Another 4,000-5,000 students by the 20-year master plan horizon through RELLIS Academic Complex Phases 3 and 4.
- Three additional Blinn College buildings, totaling just over 200,000 gross square feet, within 10 years (with the master plan's trip generation numbers based on an assumed 5,000 Blinn students at RELLIS ultimately).

Of the projected ultimate student population of 15,000, up to 2,000 students would be housed on campus less residential beds/space that are allocated for campus visitors, including visiting academics. The master plan indicates that 337,500 gross square feet involving 1,500 beds for "lower division" students will be in place within 5-10 years. Then another 125,000 gross square feet involving the other

500 expected on-campus beds will be constructed in the 10-20 year timeframe for “upper division” students and visitors.

Other future functions at RELLIS have less certain population numbers associated with them depending on the nature and timing of ultimate building sizes and uses, the intensity of space demands and utilization, etc., especially involving the public/private partnership and business incubation objectives for the RELLIS Campus. However, during informal discussions for this study, Texas A&M University System representatives indicated that the campus population could reach 25,000 persons in 25 years depending on how scenarios play out for the less predictable campus activities.

Trip Generation and Parking

A master plan appendix titled Parking and Trip Generation includes a detailed table of estimated trip generation based on the overall projected campus building program, assumed building uses, and levels of activity. The projected trip generation is provided in terms of total weekday trips and AM and PM peak hour trips (both inbound and outbound). Overall, and based on the potential campus development sequence and pace, the master plan estimates:

- Just under 15,000 weekday trips within five years (with 1,250-1,300 AM/PM peak hour trips);
- Approximately 27,500 after 10 years (with 1,800-2,700 AM/PM peak hour trips); and
- Approaching 45,000 weekday trips in 20 years (with 2,900-4,200 AM/PM peak hour trips).

An interim projection involving nearly 34,000 weekday trips has the on-campus residential population (equivalent to 2,000 beds) generating roughly one-fifth of these trips (6,693 each weekday). The main academic functions on campus, involving both Texas A&M and Blinn College students and related personnel (as opposed to research/testing, business partnership activity, and other RELLIS activities), would generate 43 percent of the weekday trips (14,370, including from an assumed 5,000 Blinn students).

The illustrative development plan for the RELLIS Campus shows the current principal entries along Riverside Parkway/SH 47 on the east and SH 21 on the north. Two secondary access points are indicated farther west on SH 21 (at Fazzino Lane and Kuder Road), as well as several more potentially along the campus’s southeast edge that fronts on Goodson Bend Road. The Parking and Trip Generation appendix includes tables with projected peak hour turning movements at each of the principal entries, with the Riverside Parkway/SH 47 entry assumed to be the most significant campus access point and the access point along SH 21 as next most active. The turning movement numbers are based on “the near-term build-out of the campus” and indicate:

- A high of 356 inbound left turns from Riverside Parkway/SH 47 during the AM peak hour within five years, increasing to 1,143 after 20 years.
- A high of 301 outbound right turns onto Riverside Parkway/SH 47 during the PM peak hour within five years, increasing to 888 after 20 years.
- A high of 260 inbound left turns from SH 21 during the AM peak hour within five years, increasing to 770 after 20 years.
- A high of 202 outbound right turns onto SH 21 during the PM peak hour within five years, increasing to 597 after 20 years.

Collaboration between Texas Department of Transportation (TxDOT) and Texas A&M Transportation Institute (TTI) personnel during the timeframe of this study led to immediate traffic management

measures at both principal campus entries. This was done in anticipation of the sudden uptick in vehicular traffic going to/from the RELLIS Campus starting with a new fall semester in August 2018, and given safety concerns related to driver sight distance, significant speed differentials between highway traffic and vehicles making in or outbound turns, and especially the challenge for outbound large shuttle buses to accelerate rapidly to highway speed once turning south onto Riverside Parkway/SH 47. The interim adjustments involve closure of some previous median openings, new or extended acceleration/deceleration lanes, roadway striping and channelization to prioritize and better accommodate the primary left turn traffic movement into the campus from Riverside Parkway/SH 47 on the east side and from SH 21 on the north side. The measures also recognize right turns as the primary outbound turning movement at both entries and aim to divert and/or manage other turning movements in a safer manner.

With regard to parking, the detailed building program projections in the master plan appendices indicate the ultimate need for just under 6,000 on-campus spaces, including 1,340 for the eventual on-site residential population. With regard to plans for an on-site multi-modal trail network, the master plan also states: “On campus trails will ultimately be connected to the regional bicycle system.”

Transit Services and Trip Reduction

The master plan prioritizes planning for shuttle access to and from the campus “once students begin to regularly attend classes at RELLIS.” Shuttle stops and shelters are to be designed into the streetscape along shuttle routes. The master plan also calls on the Texas A&M University System to “work with Texas A&M Transportation Services and regional jurisdictions to bring future shuttle routes through RELLIS.” Furthermore, a detailed transit needs study is recommended to determine key “orientation and destination points on campus.”

Additionally, an array of Transportation Demand Management (TDM) strategies is suggested to reduce trip generation, traffic congestion and on-campus parking demands. This includes design and incentive measures to encourage pedestrian and bicycle activity, use of shuttle services, car share/rideshare use, and commuting and other trips at off-peak times.

Current Annexation Capacity

At the start of 2018, the City of Bryan had 45.72 square miles within its city limits. Under Section 43.055 of the Texas Local Government Code, during each calendar year, a municipality may annex a total area that is no more than 10 percent of the incorporated area of the municipality as of January 1 of that year. For the City of Bryan, the current 10 percent limit is 4.572 square miles. Additionally, a municipality may carry over to the next year any of the 10 percent amount that it did not annex. This carry-over may continue over multiple years until the City is able to annex a maximum of 30 percent of the amount of its incorporated area on January 1. As the City of Bryan has not annexed any additional territory on its own initiative in some years, the City currently has this 30 percent annexation capability. The 30 percent amounts to 13.716 square miles in 2018 based on the total incorporated area on January 1.

Section 43.055 also specifies that the percentage calculations involve only those annexations initiated by the City and not those requested by property owners and/or the qualified voters within a particular area of the City’s ETJ. These types of “by petition” annexations have occurred periodically in recent years. Furthermore, the statute excludes from the calculations any annexed area that is “owned by the municipality, a county, the state, or the federal government and used for a public purpose.” This means that should the City decide to bring the RELLIS Campus into Bryan’s incorporated area, the 1,877 acres

(2.93 square miles) encompassed by the RELLIS Campus will not count against the City’s current accumulated annexation capacity of 13.716 square miles.

Illustrated on **MAP 13: Maximum Potential Annexation** are visual examples of the amount of territory that a west side annexation initiative could involve while staying within the 30-percent-of-current-incorporated-area limitation. For purposes of this exercise, various chunks of territory were delineated around the RELLIS Campus to use as building blocks for assembling different combinations. These areas are labeled A through I on the map. Displayed in **TABLE 4: Example Annexation Combinations Within 30 Percent Limitation** are five examples of varying combinations that are approaching but below the 13.716 square mile limit (8,778.24 acres).

TABLE 4: Example Annexation Combinations Within 30 Percent Limitation

89% of Limit	87% of Limit	85% of Limit	83% of Limit	81% of Limit
Area A = 5,174 + Area H = 498 + Area I = 2,151	Area A = 5,174 + Area D = 1,380 + Area E = 1,068	Area A = 5,174 + Area F = 937 + Area G = 839 + Area H = 498	Area A = 5,174 + Area C = 2,137	Area A = 5,174 + Area B = 1,474 + Area H = 498
7,823 acres 12.2 square miles	7,622 acres 11.9 square miles	7,448 acres 11.6 square miles	7,311 acres 11.4 square miles	7,146 acres 11.2 square miles

SOURCE: Kendig Keast Collaborative.

City of Bryan Annexation Posture

The Bryan City Charter, in Section 3, Annexation of Territory, provides City Council the power to bring additional area into the city’s boundaries “with or without the consent of the inhabitants in the territory annexed,” subject to provisions and procedures of state law.

Similar to many other Texas cities, the City of Bryan has an adopted City Council resolution from 2007 which states that, with regard to the three-year annexation plan process required by Texas Local Government Code Section 43.052, the City has no intention “to annex any territory that in order to be annexed is required to be in an annexation plan” (Resolution No. 3127 adopted by City Council on November 13, 2007). The resolution also points out: (1) the City’s ongoing ability to annex territory under certain exceptions provided by state law, and (2) the City Council’s ability to change course in the future, should circumstances change, and pursue annexation under the three-year plan process.

Additionally, the City Council put the City of Bryan ahead of most other Texas cities by adopting an accompanying resolution that established “criteria to be used to provide guidance on the annexation of areas within Bryan’s extraterritorial jurisdiction” (Resolution No. 3128, also adopted on November 13, 2007). In the preamble to this resolution, it was stated that the City may, from time to time, consider annexation of territory in its extraterritorial jurisdiction (ETJ):

... to promote orderly growth by facilitating long-range planning for the provision of municipal services and by applying appropriate land use regulations, development standards, fire codes, construction codes and environmental regulations ...

The body of the resolution spells out the following guidance for potential future annexation initiatives and decision-making:

1. The City will consider annexation of any area within its ETJ if and only if the area meets one or more of the following five criteria:

- A. Enclave. The area is surrounded by the corporate limits of the City of Bryan and/or the corporate limits or extraterritorial jurisdiction of other municipalities and its citizens would benefit from a logical city limit boundary that provides for the orderly and efficient provision of services.
 - B. Urban Development. The City is aware of or anticipates development activity of an urban nature in the area.
 - C. Revenue Source. The area (1.) has desirable ad valorem values; or (2.) is an area with commercial activities that produce sales tax revenues; or (3.) is an area that produces current or future utility revenues.
 - D. Adverse Impact. Without annexation, potential development activity is likely to have an adverse fiscal or environmental impact on the City due to unregulated land uses and the City's inability to enforce development standards, building codes and environmental regulations.
 - E. Option to Expand. Without annexation, interested parties may incorporate one or more separate municipalities or take other legal action that might be detrimental to the City's orderly growth.
2. The City will consider annexation of any area within its extraterritorial jurisdiction if and only if the City is able to provide municipal services upon annexation in accordance with State law, without negatively impacting service provision within the city.
 3. An area to be annexed should be contiguous to current city limits, should have regular, logical boundaries, and should include all, not just part, of a subdivision, recognized neighborhood or community area.
 4. Public health and welfare of an area to be annexed and the City as a whole should be enhanced through annexation and provision of city services.

As part of the current annexation study, the consultant team was tasked with recommending any additions or modifications to the City's existing annexation criteria as stated in Resolution No. 3128. Given the RELLIS Campus scenario and statements by City officials during this study about the intangible benefits of having RELLIS associated with Bryan, **we suggest that the City consider adding a sixth criterion to the list above to address "strategic" annexations, such as:**

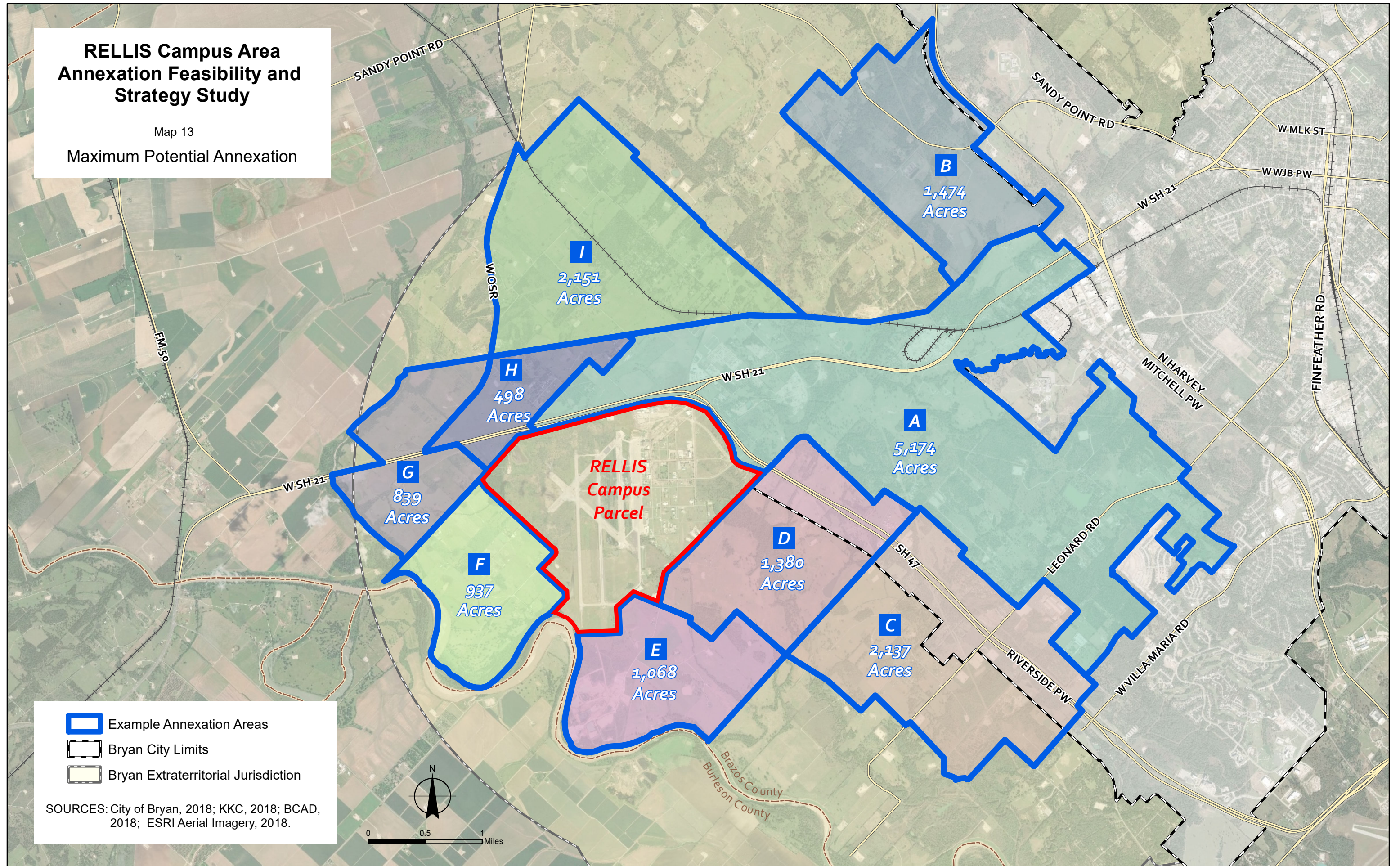
- F. Strategic. The annexed area and particular high-profile public or private investments it encompasses will bring further recognition and prestige to Bryan, enhancing the City's economic development and tax base potential in general if not directly from the specific area brought into the City's jurisdiction.

As in the RELLIS scenario, a motivation for annexation may also be the reverse of criterion D above. This would be the desire to ensure that the environs around a community and regional asset, especially one situated at a highly visible gateway location or along a key corridor, will be protected over the long term to ensure that only quality development emerges around the asset.

RELLIS Campus Area Annexation Feasibility and Strategy Study

Map 13

Maximum Potential Annexation



- Example Annexation Areas
- Bryan City Limits
- Bryan Extraterritorial Jurisdiction

SOURCES: City of Bryan, 2018; KKC, 2018; BCAD, 2018; ESRI Aerial Imagery, 2018.

Annexation Factors and Considerations

This report section describes the final refined study area and associated sub-areas. It also provides additional background information that factored into the study process and the resulting recommendations.

Refined Study Area and Sub-Areas

As discussed in the Existing Conditions portion of this report, a preliminary project study area was adapted from a scenario City staff had presented to City Council during 2017 in preparation for this study. The area was estimated to encompass some 13 square miles and was delineated based on the maximum amount of territory the City is currently able to annex under Texas Local Government Code (TLGC) Section 43.055, which is explained in more detail under the Current Annexation Capacity section earlier in this report.

This preliminary study area was later reduced somewhat as illustrated on **MAP 14: Final Annexation Study Area and Sub-Areas**. The reduction occurred mainly along the north side of the study area to focus on properties that either front on or are nearest to SH 21. Further reduction occurred on the western end of the study area to exclude various properties that are almost entirely within the floodplains associated with the Brazos River and Little Brazos River. The resulting final study area includes approximately 5,455 acres, or 8.52 square miles.

As called for in the project work program, the consultant team also considered potential sub-areas within the overall study area. These sub-area delineations might reflect distinctive physical or other characteristics, differing development potential or patterns between the sub-areas, or evident separation or barriers from other sub-areas. The consultant team ultimately identified four sub-areas as displayed in Map 14, numbered 1 through 4 from west to east:

Sub-area 1 (1,772 acres and 2.77 square miles)

Sub-area 1 focuses on properties closest to the RELLIS Campus, along and near the SH 21 corridor in the western portion of the study area. This includes the area that is across from the RELLIS Campus on the east side of Riverside Parkway/SH 47 and just south of SH 21. The floodplain associated with Thompsons Creek provided a natural break point from Sub-areas 2 and 3.

Sub-area 2 (873 acres and 1.36 square miles)

Sub-area 2 encompasses the eastern portion of the SH 21 corridor toward Downtown Bryan, including the area situated south of SH 21 toward the floodplain associated with the south fork of the Cottonwood Branch.

Sub-area 3 (1,335 acres and 2.09 square miles)

Sub-area 3 is the upper portion of the unincorporated “horseshoe” area that is generally between SH 21 on the north, the Riverside Parkway/SH 47 corridor on the west-southwest, the N. Harvey Mitchell Parkway/FM 2818 corridor on the east-northeast, and the W. Villa Maria Road/FM 1179 corridor on the east-southeast. Sub-area 3 is separated from Sub-area 1 by Thompsons Creek and its floodplain and from Sub-area 2 by the south fork of the Cottonwood Branch and its floodplain. Its separation from Sub-area 4 is at an evident break point in parcel lines in this vicinity.

Sub-area 4 (1,475 acres and 2.30 square miles)

Sub-area 4 involves the bottom of the “horseshoe” area. It was separated out from Sub-area 3 because it falls within the boundary of the West Area Plan that was completed in conjunction with the City’s Comprehensive Plan update in 2016.

Map 14 also highlights necessary considerations to comply with the provisions of TLGC Section 43.054. Under this section, all areas involved in a City-initiated annexation must be at least 1,000 feet wide at their narrowest point, or the city limits must be contiguous to the area on at least two sides. The narrowest point within Sub-area 1, at the north edge of the RELLIS Campus near SH 21, is only 875 feet wide. If the City chooses to annex the RELLIS Campus as well as areas adjacent, then the 1,000-foot minimum would be met at this point. Portions of the ETJ within Sub-area 4 are also less than 1,000 feet wide, such as the point labeled as 780 feet wide. However, this is called the “horseshoe” area of the ETJ because it is surrounded by incorporated area, which also establishes compliance with Section 43.054. It should also be noted that the 1,000-foot minimum required width does not apply in instances where the properties annexed were taken in by owner request or on the written petition of a majority of the qualified voters in a specified annexation area.

Lastly, any annexation activity by the City must comply with TLGC Section 43.057, which generally discourages a municipality from creating a “donut hole” area within its ETJ by surrounding the area with newly incorporated territory but not taking in the entire area:

If a proposed annexation would cause an area to be entirely surrounded by the annexing municipality but would not include the area within the municipality, the governing body of the municipality must find, before completing the annexation, that surrounding the area is in the public interest.

City Council Districts

As part of the study, the consultant team coordinated with the Bryan City Secretary to discuss the current City Council district geography, implications from potential new annexation activity by the City, and lessons learned from past annexation efforts. Map 3 in the Existing Conditions portion of this report shows the current Council districts in the RELLIS Campus vicinity (and a citywide view of the Council districts is available on the City’s website).

The City last completed a redistricting process after the last decennial U.S. Census in 2010. Reworking of the City’s single-member Council districts is necessary if any district population count varies from the others by more than 10 percent, to maintain equitable representation across the districts. District 1, which includes much of central Bryan and areas around SH 21, had the lowest population in 2010. Meanwhile, District 5 includes areas of south and southwest Bryan, in the Traditions area toward College Station and around W. Villa Maria Road/FM 1179 and Riverside Parkway/SH 47, that have seen significant growth and development in recent years. District boundary changes in 2010, including expanding a portion of District 1 south to Villa Maria Road, brought a 26 percent population deviation between these two districts down to approximately five percent.

District 1 remains largely landlocked and has limited growth and infill potential relative to other areas and edges of the city. Should the City choose to annex farther west along the SH 21 corridor, within Sub-area 2 on Map 14, then this area should be added to District 1 to bring new population into the district and help maintain balance among the districts. However, greater imbalance could occur over time if the City were to annex more in the ETJ “horseshoe” area or extend the city limits around the RELLIS Campus from the Riverside Parkway/SH 47 corridor. These areas would be separated from

RELLIS Campus Area Annexation Feasibility and Strategy Study

Map 14

Final Annexation Study Area
And Sub-Areas

FEMA
Flood
Zones

875 Feet

RELLIS
Campus
Parcel

780 Feet

- Refined Annexation Study Area
- Annexation Study Sub-Areas
- Preliminary Annexation Study Area
- Preliminary Study Area Parcels
- Bryan City Limits
- Bryan Extraterritorial Jurisdiction

SOURCES: City of Bryan, 2018; KKC, 2018;
BCAD, 2018; ESRI Aerial Imagery, 2018.



FEMA
Flood
Zones

Brazos County
Burleson County

SANDY POINT RD

W SH 21

W OSR

FM 50

W SH 21

W SH 21

N HARVEY
MITCHELL PW

SH 47

LEONARD RD

RIVERSIDE PW

W VILLA MARIA RD

1

2

3

4

District 1 and would logically need to be added to the adjacent District 5. As the City Secretary pointed out, if most all of the study area were annexed, especially in Sub-areas 2-4, then Council Districts 1 and 5 would have more extensive shared boundaries, providing more options for boundary adjustments.

Already, along with any potential west side scenario to address, a next round of redistricting after the 2020 Census will likely require some rebalancing between Council Districts 3 and 4 given the extent of growth on the City's east side in District 3, east of Earl Rudder Freeway/SH 6 in the Boonville Road vicinity. Each redistricting exercise also must look beyond just the City's Council districts to county, state, federal and school district implications from changing election precinct boundaries. Additionally, election precincts must align with and not be split by the city limits line, which can be one outcome from annexation activity. Some precinct lines follow creeks and other physical features versus streets and highways, including in some locations on the west side toward RELLIS.

Finally, if the City were to annex the RELLIS Campus, an election precinct would be assigned to the campus. Although RELLIS has no residential population now, its future resident population would have to be monitored, plus the factor of how many students make their on-campus residence their place of voter registration.

Bryan ISD Outlook

The consultant team also visited with a Bryan Independent School District (BISD) representative to learn more about the district's west side outlook and considerations. The district was previously aware of Blinn College's plans at the intersection of N. Harvey Mitchell Parkway/FM 2818 and Leonard Road and now must monitor the RELLIS Campus development and implications for west side growth. Through its own demographic studies, BISD is focused primarily on new development that will bring any significant number of added households with children. To the extent that RELLIS draws more residential development to the area that mainly involves housing oriented to college students, this would have little effect on BISD planning. However, any larger geographic shift in the overall housing market due to RELLIS, involving family locations, would be significant. BISD will also be monitoring what is next for the Blinn College property on N. Harvey Mitchell Parkway/FM 2818, especially if it involves new residential development and school-age population.

Elementary schools are the main concern with population growth and/or shifts. BISD has only two intermediate schools, one on the east side and one west, with no more needed for now. Jane Long Intermediate School, along N. Harvey Mitchell Parkway/FM 2818 north of Leonard Road, has an attendance zone that covers a large area, including into Downtown Bryan. Additionally, students can transfer for some special programs, so not all students stay within their attendance zones.

Mary Branch Elementary School on W. Villa Maria Road/FM 1179, between N. Harvey Mitchell Parkway/FM 2818 and Riverside Parkway/SH 47, has many homes nearby. However, its attendance zone also includes students from east of N. Harvey Mitchell Parkway/FM 2818 plus more sparsely populated areas toward Riverside Parkway/SH 47.

BISD was seeking but did not acquire another potential elementary school site in recent years, during a slower economic period. That campus mainly would have provided relief to schools in central Bryan but also would have drawn some students from farther rural areas, such as the Sandy Point Road vicinity. The district has since purchased an east side elementary school site given growth there and is not actively looking for another west side location. In all such searches, the challenge is finding a 10-acre site with all City services, unless development is occurring that will extend such services to the area.

Finally, because of the state’s current school financing system and how districts lose revenue if they experience substantial increases in property values, BISD is less focused on the tax base implications of growth and the type of development. Its primary focus is on anticipating residential development that will eventually bring kids to an area.

Blinn College Outlook

The consultant team spoke with a Blinn College administrator regarding the RELLIS Campus partnership with the Texas A&M University System. The primary message was that Blinn is “definitely all in” on the RELLIS opportunity. During the study timeframe, the College was in the process of negotiating a lease arrangement with the A&M System that would run “much longer” than the timeframe in the original Memorandum of Understanding between the institutions.

Blinn College’s last master plan was done in 2014 before the RELLIS Campus initiative was announced. Work on a new master plan that will factor in Blinn’s initial and longer-term presence at RELLIS is expected this year but will probably start in the fall after the latest enrollment levels are known. The College expects approximately 1,600 students to be part of the initial semester at RELLIS this fall. Blinn’s first building at RELLIS is the four-story, 83,000-square-foot Walter C. Schwartz Building with 18 classrooms and eight laboratories. At the time of this study, the College had no immediate plans for further construction beyond the Schwartz Building. Pending the College’s own new master plan, the A&M System’s *RELLIS Campus Master Plan* assumes eventual construction of three additional Blinn College buildings, totaling just over 200,000 gross square feet, within 10 years (with the master plan’s trip generation numbers based on an assumed 5,000 Blinn students at RELLIS ultimately).

The well-regarded Transfer Enrollment at A&M (TEAM) program has served as the leading national model for a co-enrollment partnership between a major university and a community college since 2001. A second A&M-Blinn co-enrollment partnership followed with the Texas A&M Engineering Academy at Blinn-Bryan. Each program currently has 500 students (a number set by Texas A&M). First-year students in these programs will start at RELLIS this fall, and second-year students will make the move from the Villa Maria campus in fall 2019. Blinn officials look forward to the research opportunities students will have by being located at RELLIS.

The only other Blinn students expected to be based entirely at RELLIS are those who will be pursuing bachelor degrees from various A&M System schools. After completing his or her freshman and sophomore year coursework, a student will effectively transfer to one of those System universities but remain at RELLIS to finish their degrees.

Also in fall 2019, some 400 more Blinn students pursuing degrees in nursing and various healthcare related programs will move from the Texas A&M Health Science Center campus to RELLIS, to be housed in lease space within a building the A&M System is constructing. Blinn may also relocate and/or consolidate other types of programs at RELLIS depending on further partnership and space possibilities.

Finally, Blinn College does not operate any bus service, relying on Texas A&M University shuttles that link the Villa Maria campus to A&M’s College Station campus and then to the RELLIS Campus. This is not a time-efficient option, however. It is possible that Brazos Transit may initiate some limited form of direct service in the future, if needed and depending on enrollment levels at both Villa Maria and RELLIS.

Development Outlook

Early in the study process, consultant team members completed a series of meetings with a variety of stakeholders for background and input to the study. While these informal discussions were recognized as a mix of fact sharing and anecdotal information, key takeaways from this initial round of project interactions are summarized below.

Considerations for Development Scenarios

RELLIS Campus Activity

The academic components of RELLIS will be more predictable than the innovation aspects (e.g., research commercialization and other activities involving players other than the Texas A&M University System and Blinn College).

- The System has no plans for on-campus student housing in the next five years, but the *RELLIS Campus Master Plan* does envision multi-unit construction for students eventually although not soon. The timeframe for planning of specific capital projects is five years as overseen by System Facilities Planning and Construction, so there will be advance notice of any on-campus housing plans.
- No on-campus activities should significantly affect any potential off-campus land uses nearby. Collaborative research activities are focused along SH 21. A secure area will be internal to the campus near where the old runways currently cross. High-risk training activities are planned on the south side of the campus.

Market and Real Estate Considerations for Private Development Potential

The timing and pace of the development of various planned components of the RELLIS Campus will be essential to so many factors of interest to the City and other stakeholders, including real estate market influences and development prospects in the RELLIS vicinity.

- If the planned development of the campus will further its self-sufficiency (e.g., on-campus food service, short-term housing for visitors), then there may be less immediate triggering of nearby commercial/hospitality/office development. Other basic services may emerge in the meantime (e.g., gas stations, limited retail).
- The first impact will be relocation of functions such as the Texas A&M Engineering Extension Service (TEEX), Texas A&M Engineering Experiment Station (TEES), and the Texas A&M Transportation Institute (TTI), which involves employees more than students. Significant additions of people and on-campus activity will be needed to drive spin-off activity in the vicinity.
- Infrastructure will be key. This includes technology infrastructure, with a regional effort already under way (through the Brazos Valley Council of Governments) to increase internet service speed in the area. Other area entities and projects need to match and capitalize on the Texas A&M University System's intent for a "smart" campus at RELLIS.
- The City is already planning for extension of utility infrastructure along the Riverside Parkway/SH 47 corridor in anticipation of potential development activity and to achieve other objectives such as a looped water system in the area.

- A significant question is whether RELLIS growth and relocation of various Texas A&M academic functions from the main College Station campus and Research Park area – with associated longer commutes for some faculty/staff – will spur residential development activity in the RELLIS vicinity? If so, what housing types and forms and at what price points?
- The RELLIS vicinity has physical constraints in some locations with the Brazos River and floodplain areas.
- Initial development activity nearby might be focused along the Riverside Parkway/SH 47 corridor frontage, which is already within the city limits, given synergy between the developing Texas A&M Health Science Center Campus and the RELLIS Campus. The Health Science Center Campus still has much development to come under its master plan. One meeting participant envisioned a teaching hospital someday on Bryan’s west side along with doctors’ offices and other office development.
- The Health Science Center is already generating development interest and activity, but lack of utility infrastructure is the current constraint to more immediate development (such as on the Armstrong property on the south side of Riverside Parkway/SH 47 near the Center).
- Along with a likely focus on the W. Villa Maria Road/FM 1179 intersection along Riverside Parkway/SH 47, another potential development node could emerge at the Leonard Road intersection. This is partly due to the northeast corner being under Brazos County ownership all the way from the County Expo Complex, plus with how the Expo would benefit from nearby lodging, restaurants and services.
- Developer inquiries to area economic development entities (as well as to the Texas A&M University System and RELLIS Campus officials) are already occurring, from both local and external sources, indicating what could unfold in the area. Inquiries to date are focused mostly on prospects for multi-family residential.
- Major retailers are not currently interested in the west side due to limited residential rooftops and the socioeconomic profile of the area relative to other regional focal points for such investment.
- “It’s just a matter of time” was the consensus among meeting attendees, with one making a comparison to the time it took for University Drive development to unfold in College Station. The development focus for now is on Traditions, ATLAS and the Lake Walk Town Center farther south near the Health Science Center and the main Texas A&M University campus. Some also noted potential for RELLIS spin-off effects in Downtown Bryan as the closest opportunity for urban living.
- In the meantime, some foresee the emergence of gas stations and other services at “hard corners” of key intersections, with potential for multi-use development at the interchange of SH 21 and Riverside Parkway/SH 47. However, one example of the timing uncertainty for potential near-campus development is how soon will meaningful food service be provided on the RELLIS Campus?
- One attendee noted that the ultimate development outcomes will depend on broader growth patterns in the market. Will in-migration of people relocating north from College Station to be closer to RELLIS spur higher-end residential on Bryan’s west side?

- An annexation program in the RELLIS Campus vicinity aimed primarily at managing corridor development could aim to minimize annexation of existing residential areas. However, annexation should result in adequate depths for viable and desirable development along highway corridor frontages.
- Other potential annexation objectives that would likely draw support from various area partners include:
 - › To ensure orderly, beneficial growth in the area.
 - › To support highest and best use of dormant and underutilized properties that, in many cases, would not be in play but for the RELLIS scenario.
 - › To spur redevelopment and revitalization along the SH 21 corridor toward Downtown given longstanding concerns about aesthetics and perception from this gateway direction, which was one of the reasons the SH 47 “bypass” was built.
 - › To ensure a high standard for development in the RELLIS vicinity to match the quality of architecture and level of investment occurring and envisioned on the campus. However, any City-imposed standards involving or going beyond the current SH 47 overlay standards (which have not really been tested to date given minimal corridor development) still have to be business and development friendly and not inhibit beneficial development.

Broader Perspective

City and regional officials, planners and economic development entities will need to consider other initiatives and potential synergies occurring in a broader area beyond the immediate RELLIS Campus vicinity, including:

- Focusing on a triangle between RELLIS, the Texas Triangle Business Park along SH 6 just north of Bryan, and Union Pacific Railroad’s Brazos Yard classification yard project (\$550 million, 1,875-acre facility to the north in Robertson County near Hearne).
- Monitoring the potential alignment to the north of RELLIS for the new Interstate 14, connecting to US 190 in the Killeen-Temple area, and how and when that project plays out given the federal focus on infrastructure, a new I-14 caucus in Congress, and the east-west mobility need across Central Texas.
- Tracking implementation of long-range transportation plans and project in the region through the Bryan-College Station Metropolitan Planning Organization, including plans for SH OSR and needed connections between SH 6 and the SH 21/SH 47 area, between SH 47 and FM 60, etc.).
- Recognizing that new companies that start out on the RELLIS Campus may then transition off campus and will need a business/industrial park in the vicinity “as RELLIS is more about the ‘D’ in ‘R&D.’” Need to plan strategically now to provide future location options, potentially focusing on the area between OSR, Sandy Point Road, N. Harvey Mitchell Parkway/FM 2818 and SH 21, as well as along the Riverside Parkway/SH 47 corridor toward the Health Science Center.
- Building on the strong foundation already in place with the Riverside Parkway/SH 47 corridor, plus the potential on Bryan’s east side for development around Coulter Field if its runways are extended – with SH 21 providing the link between RELLIS and Coulter Field, along with the proximity of RELLIS to Easterwood Airport.

Development Scenarios for Potential Annexation Areas

Geographic Focus

Once the project study area and associated sub-areas were refined, the consultant team turned to framing three potential development scenarios for areas subject to potential annexation in the RELLIS Campus vicinity. One aspect of the study area refinement process was to concentrate on areas nearest the RELLIS Campus that are available and most suitable for new growth and development activity. This led the team to focus on a prime area on the north side of SH 21 directly across from the RELLIS Campus. These properties are relatively large and few in number, are along or near the SH 21 frontage (which is also where future utility infrastructure would likely be extended first), and remain largely undeveloped and unconstrained by floodplain.

A secondary focus was an area just east of and across from the RELLIS Campus on the east side of Riverside Parkway/SH 47. This area at the eastern end of Sub-area 1 has some similarities to the area just north of the RELLIS Campus across SH 21. However, it is separated from Riverside Parkway/SH 47 by Silver Hill Road and also involves more parcels with some scattered pre-existing development.

Consideration of RELLIS Self Sufficiency

Consideration of development potential around and near the RELLIS Campus, whether immediate, near term or longer term, had to take into account the on-campus improvements and amenities envisioned through the Texas A&M University System's *RELLIS Campus Master Plan*. As stated in the master plan, the particular use mix and design of these on-campus features would be intended, in part, to engage both the daytime and (future) resident population, as well as visitors to RELLIS, to where many of their daily and routine dining, service, recreation and leisure needs could be accommodated within the campus. In an appendix titled Potential Future Facilities, the master plan forecasts on-site uses such as:

- Food service facilities.
- 2,000 beds for students and campus visitors, including visiting academics (337,500 gross square feet involving 1,500 beds within 5-10 years for “lower division” students; then another 125,000 gross square feet involving the other 500 expected beds in the 10-20 year timeframe for “upper division” students and visitors).
- A retail strip center on 20+ acres, plus other pad sites for retail (100,000 gross square feet total in the Central Core district and elsewhere within 5-10 years).
- A wellness facility (15,000 gross square feet within 10 years) and outdoor recreational fields, trails and equipment.
- An expo/conference center in the 30-40,000 gross square foot range that could accommodate up to approximately 3,000 persons (within 10 years).

Future Land Use Considerations

Both the prime and secondary areas described above are shown within the “Western Gateway” designation on the City’s adopted Future Land Use Plan map. As City staff confirmed, this designation was intended as a placeholder pending a special area plan for this gateway area, similar to the West Area Plan completed nearby. In the meantime, the Western Gateway narrative provides limited guidance on envisioned land uses other than general statements that:

- Developments that create local employment and jobs are of paramount importance.
- Developments should create maximum (highest and best use) land values in order that the long term stability and prosperity of the area can be realized.

City staff also advised that Western Gateway did not necessarily rule out multi-family residential or other forms of residential development in areas so designated. The Land Use portion of the Comprehensive Plan also specifies that floodplain areas be preserved for future trails and greenspace rather than any type of urban development, so the scenarios exercise assumed no development within mapped floodplains.

Three Development Scenarios

The three development scenarios involve the entire study area, which, after the further refinement and reduction described above, includes approximately 5,455 acres, or 8.52 square miles. In focusing only on non-floodplain areas for purposes of the scenarios, the overall area was further reduced to approximately 4,170 acres or 6.5 square miles. The main variation between the three alternatives occurs only within Sub-area 1, and this variation is focused entirely on the prime area on the north side of SH 21 across from the RELLIS Campus. The alternatives are summarized as:

1. Residential Scenario – Focused more on residential use, especially apartments, close to the RELLIS Campus.
2. Employment Scenario – This involves more industrial/business park space plus retail (with the “industrial” component assumed to be a broad range of potential use mixes and outcomes that could include substantial office or research/development-oriented floor space relative to more traditional notions of industrial use).
3. Hospitality Scenario – This includes more hotel/restaurant potential near the campus along with residential, retail/office and industrial/business uses (with the caveat that the retail/office designation would include any potential hotel uses across the entire study area, while specific numbers of hotels were called out only for the prime locations along SH 21).

The development assumptions for the rest of the overall study area, in Sub-areas 2, 3 and 4, are the same under each of the three scenarios. Compiled in **TABLE 5: 20-Year Development Projections for Three Scenarios** are the projected quantities of residential dwellings and square footage of nonresidential space under the alternative scenarios (with these numbers later undergoing some further refinement through the fiscal impact analysis phase, including to factor in existing development that will still be new to the city if annexed). The projections do not include future student housing or any other ongoing development activity on the RELLIS campus.

TABLE 5: 20-Year Development Projections for Three Scenarios

Residential Scenario Near RELLIS	Dwellings	Square Feet
High Density Residential	2,400	
Medium Density Residential	200	
Low Density Residential	1,600	
Retail/Office (including 1 hotel)		976,000
Industrial/Business Park		624,000
	4,200	1,600,000

Employment Scenario Near RELLIS	Dwellings	Square Feet
High Density Residential	1,600	
Medium Density Residential	200	
Low Density Residential	1,600	
Retail/Office (including 1 hotel)		905,600
Industrial/Business Park		828,800
	3,400	1,734,400

Hospitality Scenario Near RELLIS	Dwellings	Square Feet
High Density Residential	1,600	
Medium Density Residential	200	
Low Density Residential	1,600	
Retail/Office (including 3 hotels + restaurants)		1,060,000
Industrial/Business Park		600,000
	3,400	1,660,000

SOURCE: Kendig Keast Collaborative.

The consultant team worked through the following steps to arrive at projected development outcomes for each of the scenarios:

1. Acreages within the non-floodplain portions of each sub-area were estimated from GIS mapping of the study area and existing parcels.
2. The resulting acreage was further reduced to account for land that will be devoted to roads and rights-of-way, utility infrastructure/easements, storm drainage improvements/easements, recreation and open space, and other pre-development set-asides.
3. The Future Land Use Plan designations and most likely zoning categories were considered to arrive at assumed use intensities. (Within Sub-area 4, the more refined Future Land Use Map adopted through the West Area Plan was directly applied, the overall Comprehensive Plan map was used for Sub-area 2 and portions of 3, and the consultant team made land use assumptions for the remainder of Sub-area 3 and all of Sub-area 1 within the Western Gateway designation.)

4. Existing dwellings and nonresidential structures were identified and factored into build-out calculations for each of the sub-areas.
5. The nonresidential build-out figures for the study area were adjusted downward based on the actual scale and intensity of retail, office, lodging and industrial development elsewhere in Bryan.
6. The residential and nonresidential building permit history for the last five years (2013-2017) was considered to arrive at an assumed development pace in Bryan for the next 20 years (recognizing that units and square feet of new development tend to occur in periodic “lumps” rather than in a steady flow):
 - a) Approximately 400 units per year of new Low Density Residential (single-family detached), or 8,000 units over 20 years.
 - b) Approximately 50 units per year of new Medium Density Residential (townhome, duplex, 3-4 unit residential), or 1,000 units over 20 years.
 - c) Approximately 400 units per year of new High Density Residential (multi-family with 5+ units), or 8,000 units over 20 years.
 - d) Approximately 400,000 square feet per year of new nonresidential construction, or 8 million square feet over 20 years.
7. By assuming that the study area might become more of a growth area over the next several decades, to where it might account for 20 percent of the projected city-wide development, the following 20-year amounts were allocated to the study area:
 - a) 1,600 single-family detached dwellings.
 - b) 200 medium density dwellings.
 - c) 1,600 multi-family units.
 - d) 1.6 million square feet of nonresidential floor area.

Note that the Residential scenario above shows 2,400 multi-family units versus the 1,600 indicated here. This is because the Residential scenario assumes that the RELLIS Campus vicinity will draw an even larger share of Bryan’s overall apartment development over the next 20 years.

8. These quantities were then further allocated to the four sub-areas. The largest shares were assigned to Sub-area 4 given its proximity to existing developed areas of Bryan and the development progression already occurring between W. Villa Maria and Leonard Roads. The smallest shares were assigned to Sub-area 2 and then 3. The remaining shares were placed in Sub-area 1 in line with the varying development scenarios for the immediate RELLIS Campus vicinity.

For purposes of the fiscal impact element of this study, it was generally assumed that the sub-areas closest to the existing incorporated city – Sub-areas 2 and 4 – would see the earliest development activity (years 1-5), followed by Sub-area 3 (years 5-10), and then Sub-Area 1 nearest the RELLIS Campus (10+ years).

9. The resulting numbers in Table 5, above, were also compared against the newest available population projections from the Bryan-College Station Metropolitan Planning Organization (BCSMPO), which now extend to 2045. Like other regional transportation planning agencies, BCSMPO utilizes geographic units of analysis known as Transportation Analysis Zones (TAZs) to develop necessary input data for its transportation demand modeling. After refining and reducing the study area, as described above, only nine TAZs overlapped with the study area

relative to 15 originally. All but one of the remaining TAZs extend beyond the study area. For purposes of the comparison, it is assumed that all of the population assigned to each TAZ is within the study area, which should be especially true for the more rural and least developed TAZs nearest to the RELLIS Campus. Even with this assumption, the projected development in the study scenarios is considerably higher than the BCSMPO projections as displayed in **TABLE 6: Comparison of BCSMPO Projections and Development Scenarios**. This likely reflects that the scenarios involve more projected development in the immediate RELLIS vicinity than is anticipated under the BCSMPO projections.

TABLE 6: Comparison of BCSMPO Projections and Development Scenarios

	MPO Estimated 2017 Population	MPO Projected 2045 Population	MPO Population Added to 2045	New Dwelling Units at 2.3 Persons Per Household	New Dwelling Units in Development Scenarios
Sub-area 1	420	497	77	33	980 - 1,780 (800-1,600 multi-family)
Sub-area 2	207	295	88	38	0
Sub-area 3	12	83	71	31	180
Sub-area 4	2,012	4,135	2,123	923	2,240 (800 multi- family)
	2,651	5,010	2,359	1,025	3,400 - 4,200

SOURCE: BCSMPO, Kendig Keast Collaborative.

It should be noted that after the scenario work above was largely done, steps were taken by the Texas Department of Transportation (TxDOT) to improve traffic safety conditions for the upcoming fall 2018 semester at both of the primary RELLIS Campus entries along Riverside Parkway/SH 47 and SH 21 (as described further within the *RELLIS Campus Master Plan* overview in the Annexation Context section of this report). At least in the near term, until or if highway overpasses and/or direct campus flyovers are eventually constructed at one or both of these campus entries, the traffic management measures that were rightly implemented by TxDOT could also have the side effect of discouraging initial basic service uses (e.g., gas stations, convenience retail, fast food restaurants) near these busy entries. This is because the traffic diversions will disallow some turning movements and affect passerby traffic and access opportunities for some nearby properties, especially involving outbound traffic from the campus (e.g., at the lunch hour, weekday evening peak periods, etc.). It will be interesting to see if such traffic pattern considerations are noted by potential investors/developers that otherwise see enhanced private development potential around the expanding RELLIS Campus.

Scenario Evaluation and Implications

This brief report section includes further information and evaluation related to specific statutory requirements the City must consider and abide by should it move forward with any City-initiated annexation activity in the RELLIS Campus vicinity. Additionally, this main study report is supported by two supplemental reports that resulted from in-depth evaluations of the infrastructure and fiscal “cost/benefit” implications of the development and annexation scenarios considered through the study.

Residential Properties for Potential Exempt Annexation Scenarios

Since 1999, Chapter 43 of the Texas Local Government Code has required municipalities to complete a more involved, three-year process for City-initiated annexations. The specific ETJ areas and properties under consideration for potential annexation must be identified within a three-year Municipal Annexation Plan. However, Section 43.052 (in subsection (h)) provides an exemption from the Municipal Annexation Plan procedure if “the area contains fewer than 100 separate tracts of land on which one or more residential dwellings are located on each tract.”

Illustrated on **MAP 15: Residential Properties within Study Area** are all parcels within the study area that currently have one or more residential dwellings, which are also identified by housing type. This provides a starting point for considering areas that might be eligible for the more expeditious “exempt” annexation procedure. The specific number of such properties is compiled in **TABLE 7: Residential Parcels by Sub-Area**.

TABLE 7: Residential Parcels by Sub-Area

Area	Number
Sub-Area 1	40
Sub-Area 2	85
Sub-Area 3	17
Sub-Area 4	124
TOTAL	266

SOURCE: Brazos Central Appraisal District.

Next, **MAP 16: Examples of Potential Exempt Annexations** shows three examples of groupings of properties in the study area that are within the fewer-than-100-residential-tracts limit and, therefore, would qualify as exempt annexations. Two of the examples are right at the 99 residential parcels count. The first, with a gray outline on the map, would encompass all the area within Sub-area 1, closest to the RELLIS Campus, plus portions of Sub-areas 3 and 4 within the ETJ “horseshoe” area and adjacent to the existing city limits along the Riverside Parkway/SH 47 corridor. The second example, with a green outline on the map, would enable incorporation of nearly all of Sub-area 4 – the “bottom” of the horseshoe in the Leonard Road vicinity. The third example, with a blue outline on the map, involves another variation for annexing most of Sub-area 4 with 95 residential parcels included.

Extent of Development Agreements Needed

Illustrated on **MAP 17: Properties within Study Area Requiring Development Agreement Offer** are all parcels within the study area that are appraised for ad valorem tax purposes as being in agricultural use. Under Texas Local Government Code Section 43.016 (formerly 43.035), the City must offer the owners of such properties a development agreement that would: (1) guarantee the continuation of the extraterritorial status of the property, and (2) authorize the City to enforce all of its municipal regulations and planning authority that do not interfere with the use of the property for agriculture (or wildlife management or timber). The City is free to annex any such property if the landowner declines to enter into the agreement with the City. The specific number of agreement-eligible properties in the study area is compiled in **TABLE 8: Development Agreement Parcels by Sub-Area**.

TABLE 8: Development Agreement Parcels by Sub-Area

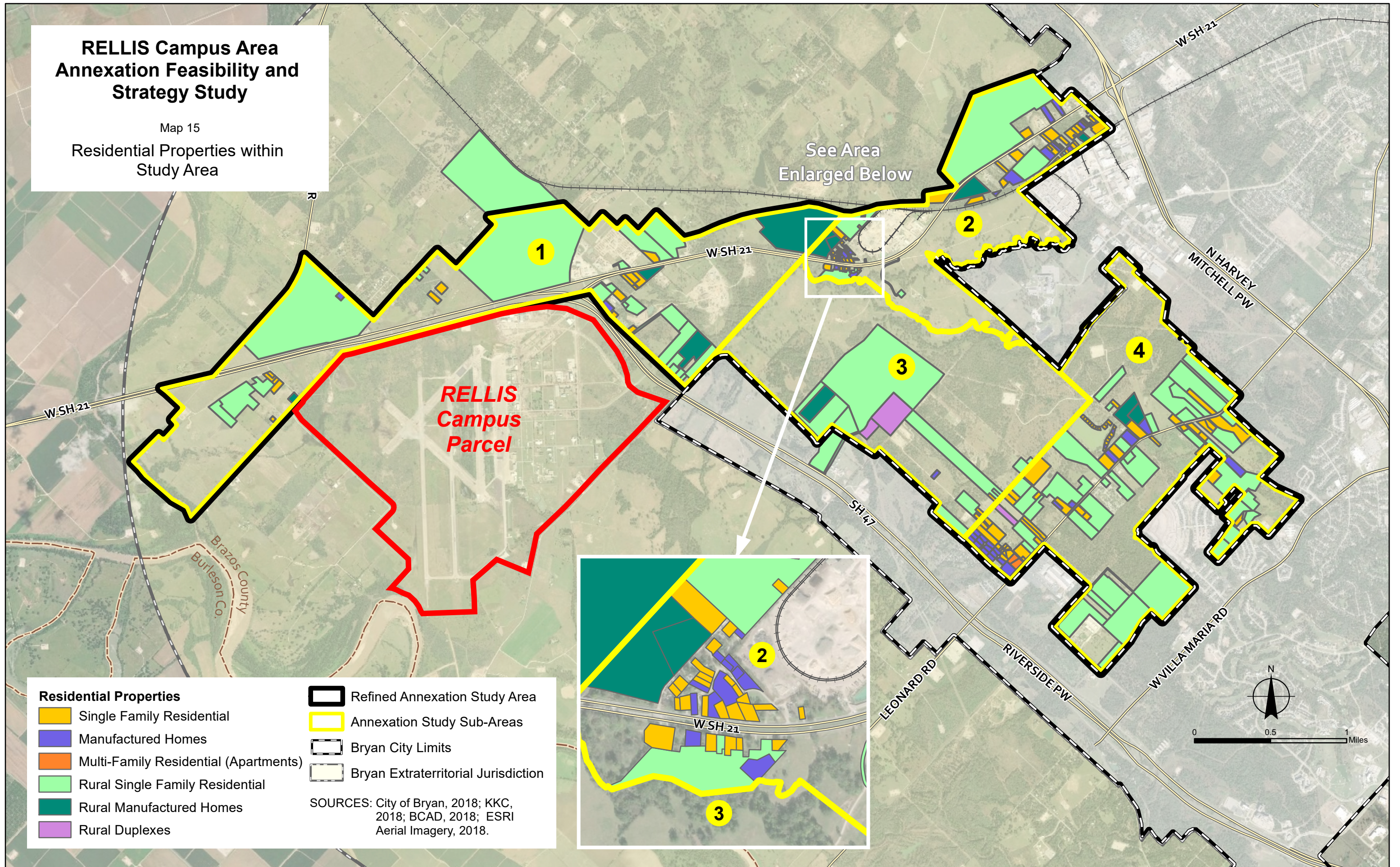
Area	Number
Sub-Area 1	18
Sub-Area 2	3
Sub-Area 3*	13
Sub-Area 4	19
TOTAL	53

*Sub-Area 3 includes one large parcel partially in Sub-Area 1 and two large parcels partially in Sub-Area 2.

SOURCE: Brazos Central Appraisal District.

RELLIS Campus Area Annexation Feasibility and Strategy Study

Map 15
Residential Properties within
Study Area



**RELLIS
Campus
Parcel**

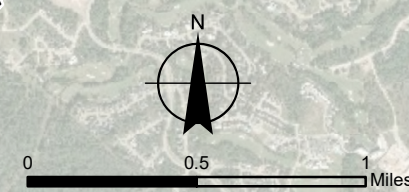
See Area
Enlarged Below

Residential Properties

- Single Family Residential
- Manufactured Homes
- Multi-Family Residential (Apartments)
- Rural Single Family Residential
- Rural Manufactured Homes
- Rural Duplexes

- Refined Annexation Study Area
- Annexation Study Sub-Areas
- Bryan City Limits
- Bryan Extraterritorial Jurisdiction

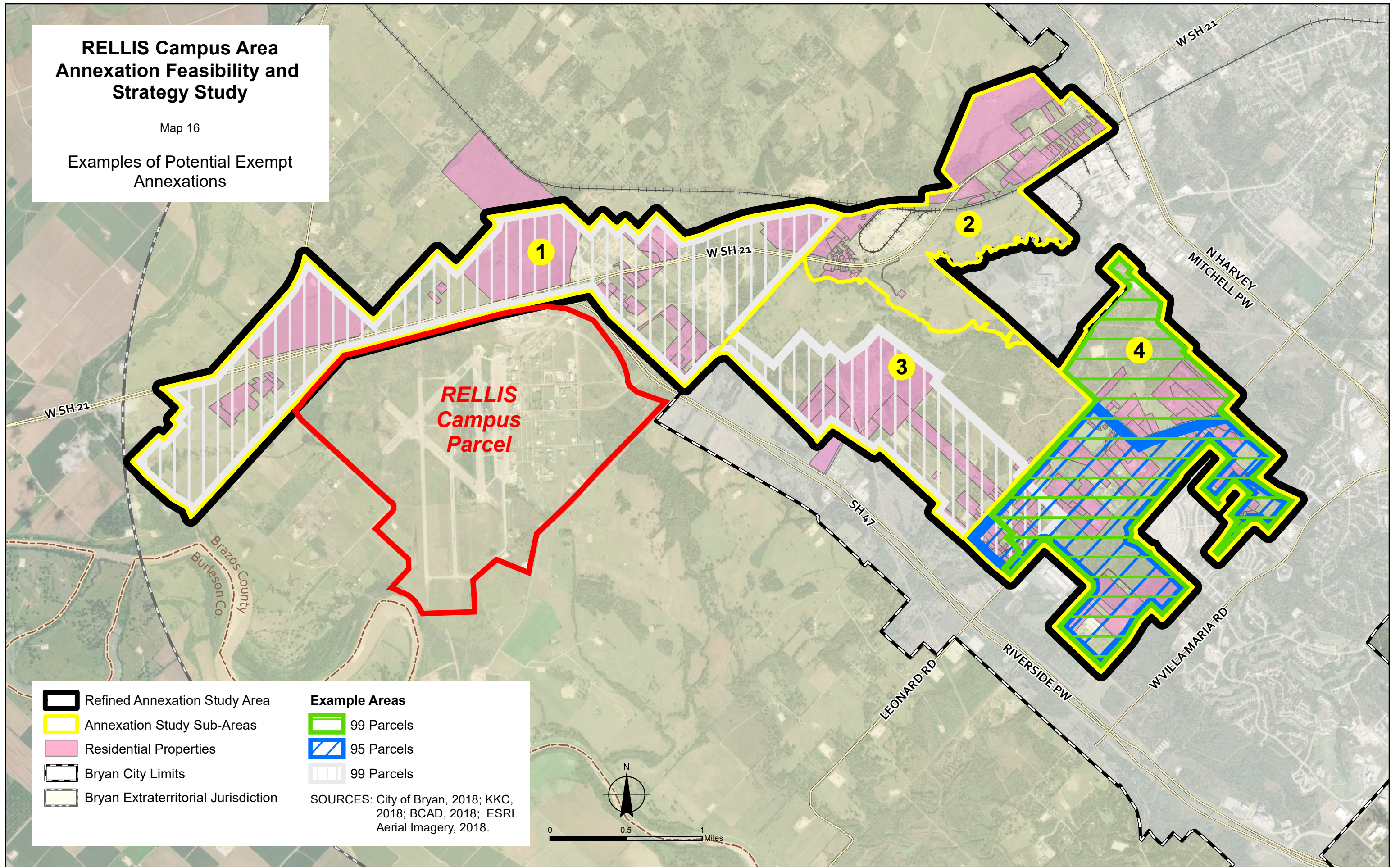
SOURCES: City of Bryan, 2018; KKC, 2018; BCAD, 2018; ESRI Aerial Imagery, 2018.



RELLIS Campus Area Annexation Feasibility and Strategy Study

Map 16

Examples of Potential Exempt
Annexations

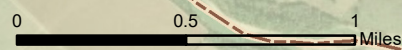


**RELLIS
Campus
Parcel**

- Refined Annexation Study Area
- Annexation Study Sub-Areas
- Residential Properties
- Bryan City Limits
- Bryan Extraterritorial Jurisdiction

- Example Areas**
- 99 Parcels
 - 95 Parcels
 - 99 Parcels

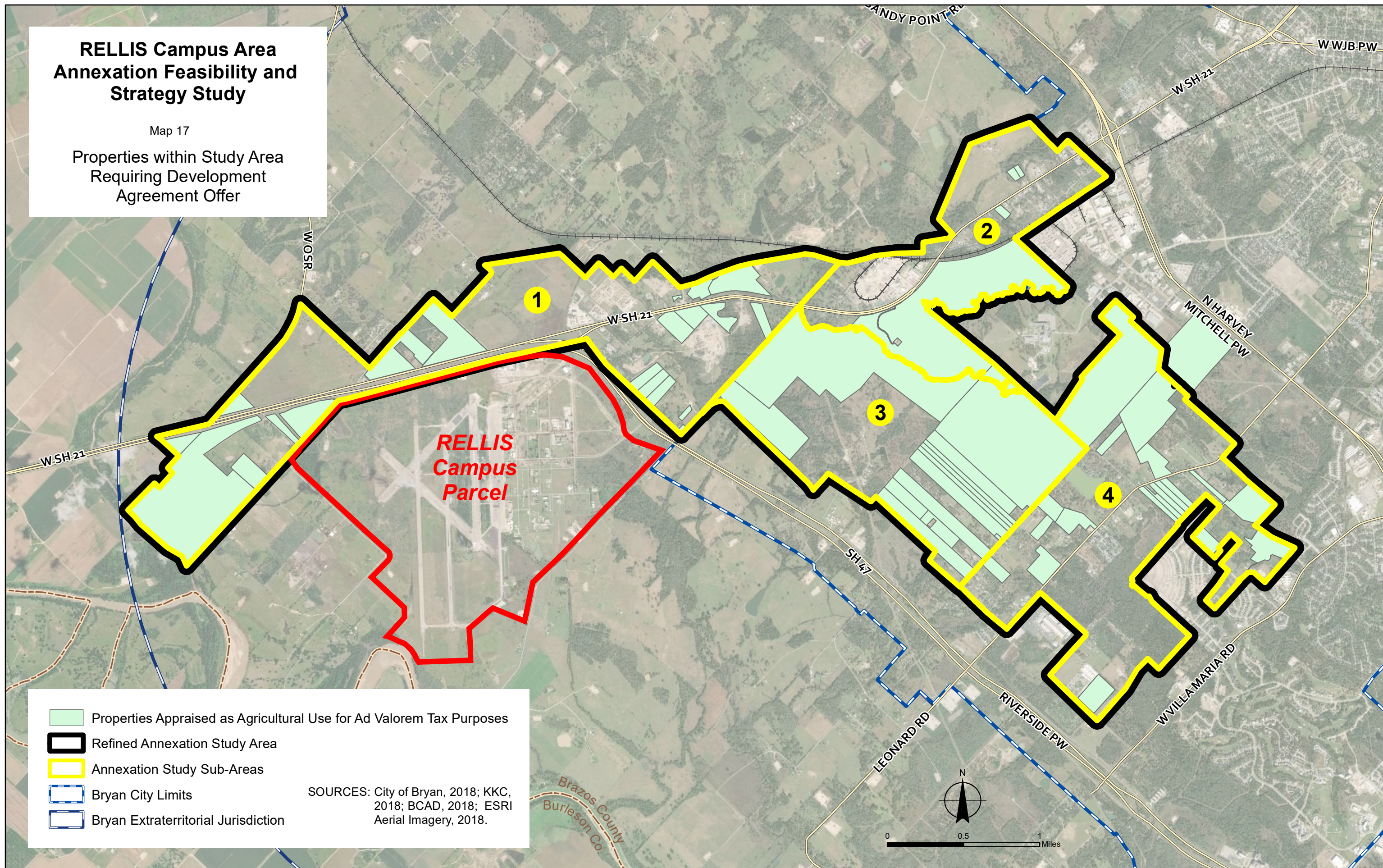
SOURCES: City of Bryan, 2018; KKC, 2018; BCAD, 2018; ESRI Aerial Imagery, 2018.



RELLIS Campus Area Annexation Feasibility and Strategy Study

Map 17

Properties within Study Area
Requiring Development
Agreement Offer



Annexation Recommendations

This last report section provides the consultant team’s final recommendations and observations, along with those included in the supplemental infrastructure and fiscal impact reports. This section also includes details on procedural, cost and time considerations for the City should it pursue the recommended course of action.

Recommended Annexation Strategy

The Recommended Annexation Strategy, starting with a first candidate area for the City to annex plus two alternatives, is discussed below and summarized visually on **MAP 18: Recommended and Alternative Annexation Scenarios** (Map 18A shows the recommended first area, 18B shows a first alternative, 18C shows a second alternative, and 18D shows the three alternatives combined). As displayed on the map, all of these options are within a “refined annexation study area.” That final study area resulted from reducing a preliminary study area delineated at the start of the study (Map 14 shows the area reduction).

The entire discussion that follows is based on the notion that, ideally, the City should eventually annex all or most of the final annexation study area, which encompasses approximately 5,455 acres, or 8.52 square miles. However, the recommendations in this section focus on the City’s potential first move given the chance that the Texas Legislature and Governor will further restrict municipal annexation authority for cities of Bryan’s size during the next legislative session in 2019. The most advisable action is also based on two overriding considerations:

1. The core objective for this study: whether the City should annex the vicinity of the RELLIS Campus – and potentially the campus itself – as soon as possible, and the associated service provision and cost implications.
2. The options available to the City under Texas Local Government Code Chapter 43 for annexing territory relatively quickly (i.e., through “exempt” annexation), within the limits Chapter 43 imposes on such expedited action relative to the three-year Municipal Annexation Plan process.

Therefore, the recommended annexation approach, based on the findings from this study and related interactions with City officials, staff and various City partners and stakeholders, includes the following elements:

1) *Do not annex the RELLIS Campus vicinity as a first move.*

Alternative Scenario 2, which is outlined in purple on Map 18C, would accomplish the objective of bringing the RELLIS Campus vicinity into the Bryan city limits to enable the City to manage land use and development in the area. The City could achieve this objective relatively quickly, and incorporate significant additional territory (7.1 square miles), through an exempt annexation of the area.

However, this option is not shown as the recommended first annexation as it would put the Bryan Fire Department (BFD) in a very difficult position given the distance of the RELLIS Campus area from the City’s nearest existing fire station (Station Number 5 at 2052 W. Villa Maria Road/FM 1179), plus the limited road network for reaching the area promptly. To ensure more timely and effective response in the RELLIS area while maintaining its overall responsiveness within the existing city limits, BFD would have to take immediate steps involving significant capital and personnel expenses which the City was not anticipating even through its longer-term budget forecasting.

BFD has confirmed with its consultant for the Insurance Service Office (ISO) rating process that the RELLIS vicinity currently has an ISO 8 rating (on the ISO scale of 1 to 10, where higher numbers mean a progressively worse rating). This is with the current fire coverage provided by the Brazos County Precinct 4 volunteer fire department. The BFD consultant advised that the area's ISO rating would effectively drop to 10 upon annexation as the sheer distance and drive time from Station 5 would amount to the area having minimal or no fire coverage. Additionally, BFD recently attained the coveted rating of ISO 1 within the current city limits, so the City likely would not want to risk undermining this rare achievement shared by only a small number of cities nationwide.

Any annexation of the RELLIS Campus vicinity, whether sooner or later, will almost certainly require construction of a new west side fire station. This would especially be the case if the City also were to annex the RELLIS Campus and take on that added service responsibility as fire response is one essential service type where the Texas A&M University System is not self-sufficient. If and when the RELLIS area is slated for near-term annexation, then BFD would have to prepare to take over as first responder on day one of the area's incorporation:

- BFD would immediately search for temporary quarters in the area – or closer to it – to house apparatus and firefighters. For purposes of the fiscal impact analysis, a nominal cost was assumed for the temporary base of operations relative to the \$4.3 million allocated for a new full-fledged fire station, recognizing that interim personnel costs will be as much or more than the uncertain space costs. A potential partnership and cost-sharing arrangement with the A&M System could be pursued, including a possible on-campus location if an appropriate structure could be repurposed. For now, however, it should be assumed that the upfront cost would be borne entirely by the City.
- All of the involved personnel would be new BFD hires versus any transfer of current firefighters. It would also take time to recruit and train the necessary personnel.
- BFD would first assign an engine truck and ambulance to the temporary location, which would require an initial staffing level of 21. A ladder truck and its associated personnel would be necessary due to the taller buildings at RELLIS, but they would likely not be added for a few years. As an interim step, BFD could possibly relocate an engine truck and ambulance from its current reserve vehicles. In the meantime, a new engine truck would be ordered and take 14-16 months for delivery as they are custom built (with less time required for a new ambulance).

Given these practical considerations and cost implications, any near-term annexation of the RELLIS Campus and/or its vicinity would have to be treated as a strategic move by the City, with expected intangible benefits, as it would likely involve a significant net negative fiscal commitment early on.

2) *Prioritize initial annexation in the ETJ “horseshoe” area rather than the RELLIS Campus vicinity for the reasons cited above, completing an initial exempt annexation at the bottom of the horseshoe closest to Leonard Road.*

The recommended first annexation area is outlined in green on Map 18A and includes 2.2 square miles. This area has 99 residential parcels – the maximum number allowed for an exempt annexation. It would result in the near-term incorporation of nearly all of Sub-area 4, except for a cluster of smaller lots closest to Riverside Parkway/SH 47 near Higgs Drive.

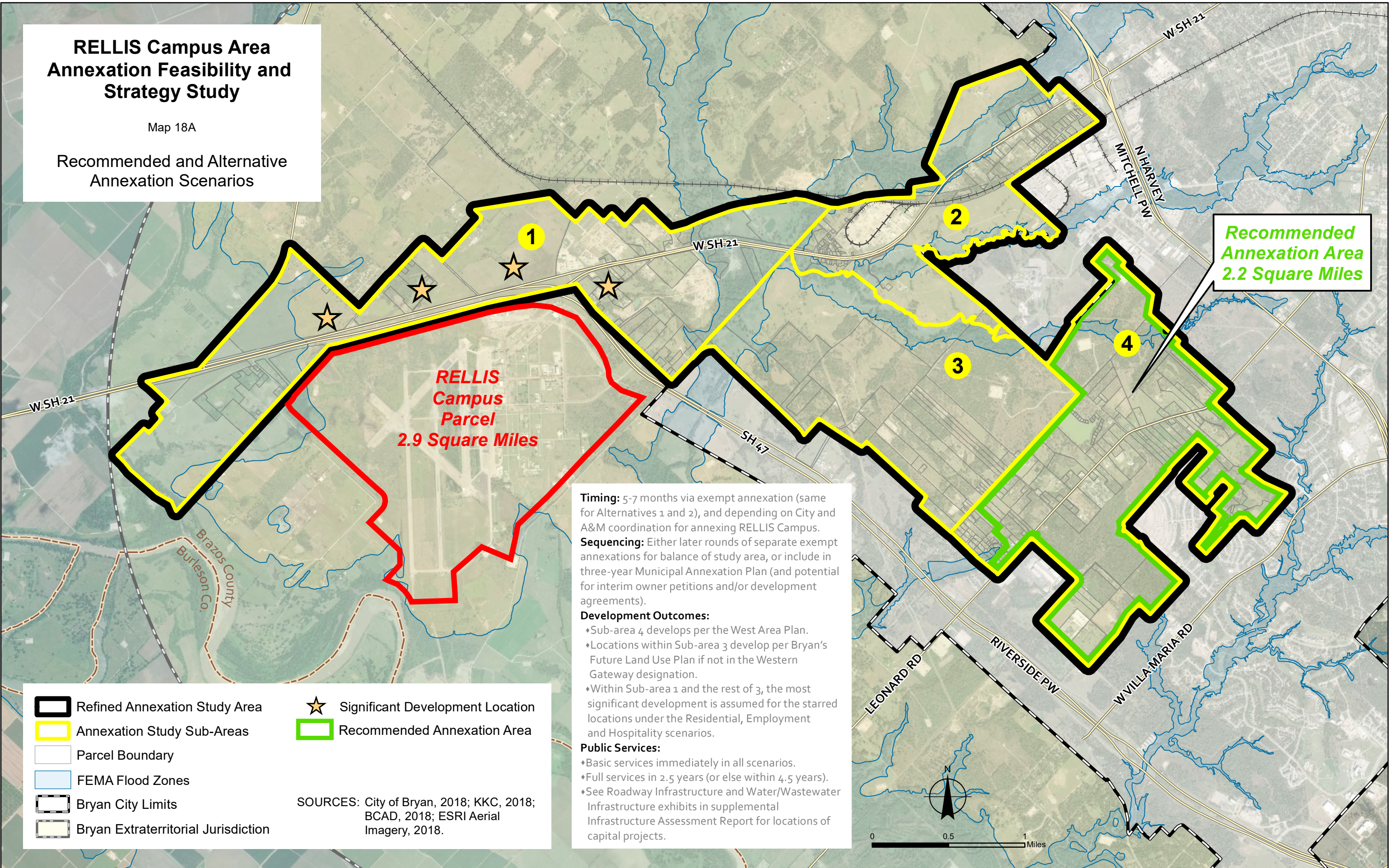
Significantly, Sub-area 4 has more and smaller existing residential parcels relative to larger-parcel areas closer to RELLIS in Sub-areas 1 and 3. As a result, using exempt annexation here will cause the residential parcel limit to be reached sooner and much less ETJ area to be annexed through this



RELLIS Campus Area Annexation Feasibility and Strategy Study

Map 18A

Recommended and Alternative
Annexation Scenarios



**RELLIS
Campus
Parcel
2.9 Square Miles**

**Recommended
Annexation Area
2.2 Square Miles**

Timing: 5-7 months via exempt annexation (same for Alternatives 1 and 2), and depending on City and A&M coordination for annexing RELLIS Campus.

Sequencing: Either later rounds of separate exempt annexations for balance of study area, or include in three-year Municipal Annexation Plan (and potential for interim owner petitions and/or development agreements).

Development Outcomes:

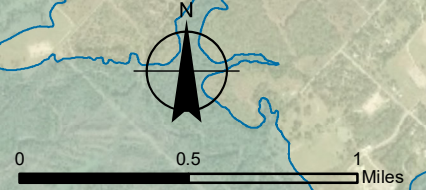
- ♦ Sub-area 4 develops per the West Area Plan.
- ♦ Locations within Sub-area 3 develop per Bryan's Future Land Use Plan if not in the Western Gateway designation.
- ♦ Within Sub-area 1 and the rest of 3, the most significant development is assumed for the starred locations under the Residential, Employment and Hospitality scenarios.

Public Services:

- ♦ Basic services immediately in all scenarios.
- ♦ Full services in 2.5 years (or else within 4.5 years).
- ♦ See Roadway Infrastructure and Water/Wastewater Infrastructure exhibits in supplemental Infrastructure Assessment Report for locations of capital projects.

- Refined Annexation Study Area
- Annexation Study Sub-Areas
- Parcel Boundary
- FEMA Flood Zones
- Bryan City Limits
- Bryan Extraterritorial Jurisdiction
- Significant Development Location
- Recommended Annexation Area

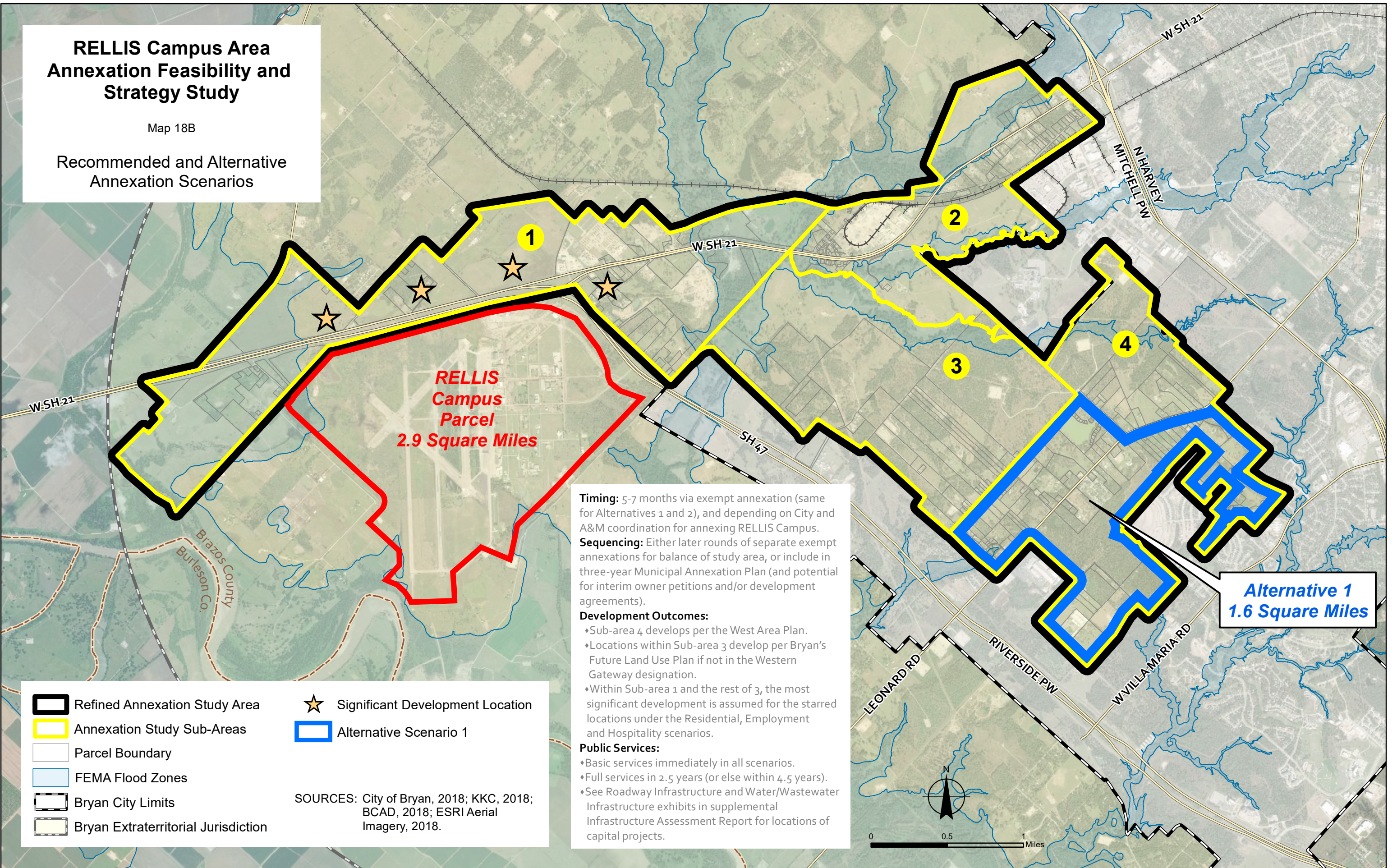
SOURCES: City of Bryan, 2018; KKC, 2018; BCAD, 2018; ESRI Aerial Imagery, 2018.



RELLIS Campus Area Annexation Feasibility and Strategy Study

Map 18B

Recommended and Alternative
Annexation Scenarios



**RELLIS
Campus
Parcel
2.9 Square Miles**

**Alternative 1
1.6 Square Miles**

Timing: 5-7 months via exempt annexation (same for Alternatives 1 and 2), and depending on City and A&M coordination for annexing RELLIS Campus.

Sequencing: Either later rounds of separate exempt annexations for balance of study area, or include in three-year Municipal Annexation Plan (and potential for interim owner petitions and/or development agreements).

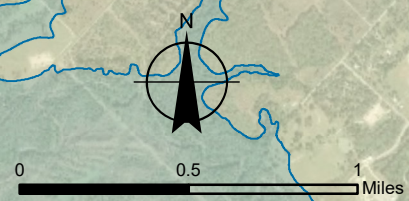
Development Outcomes:

- ♦ Sub-area 4 develops per the West Area Plan.
- ♦ Locations within Sub-area 3 develop per Bryan's Future Land Use Plan if not in the Western Gateway designation.
- ♦ Within Sub-area 1 and the rest of 3, the most significant development is assumed for the starred locations under the Residential, Employment and Hospitality scenarios.

Public Services:

- ♦ Basic services immediately in all scenarios.
- ♦ Full services in 2.5 years (or else within 4.5 years).
- ♦ See Roadway Infrastructure and Water/Wastewater Infrastructure exhibits in supplemental Infrastructure Assessment Report for locations of capital projects.

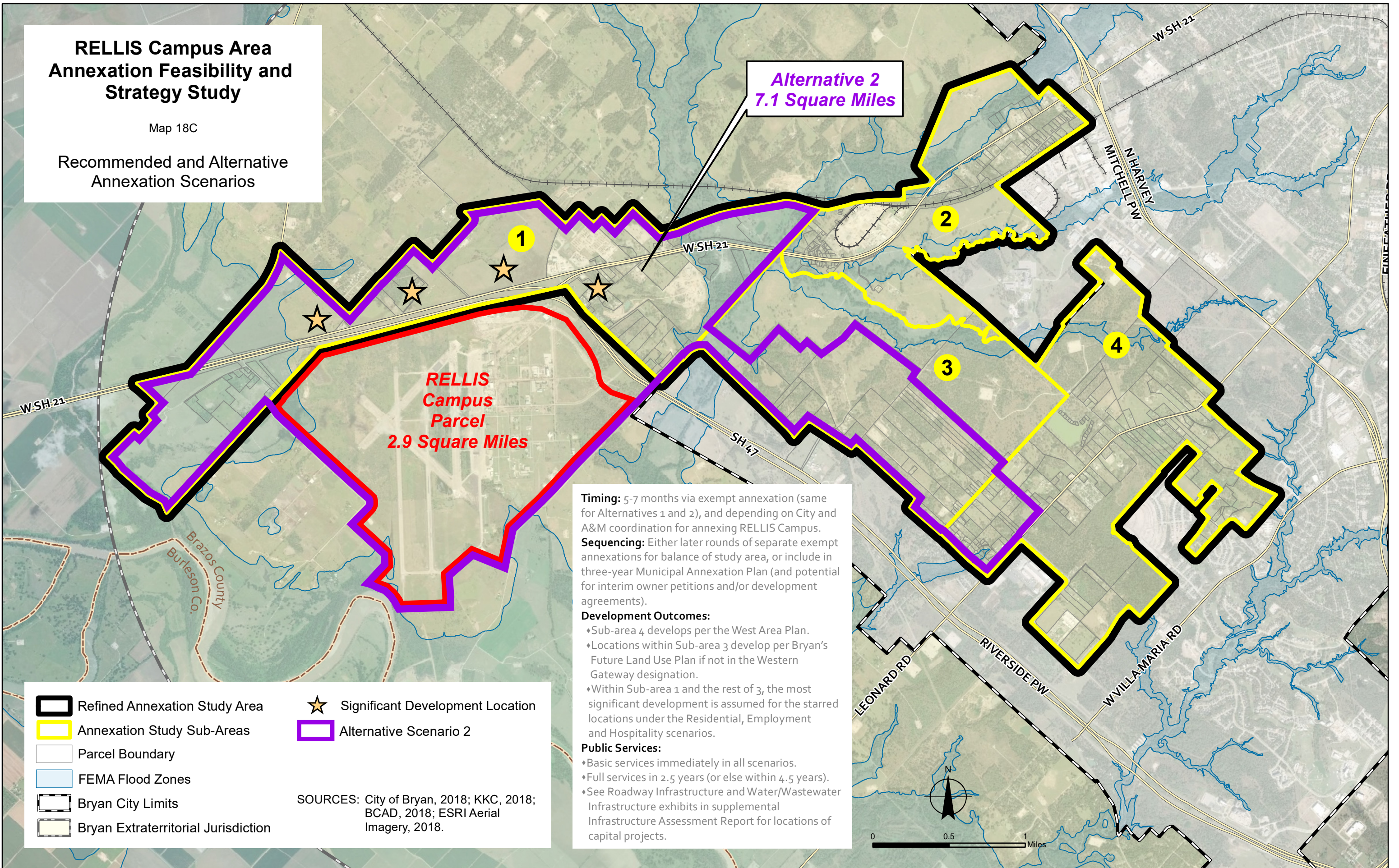
- Refined Annexation Study Area
 - Annexation Study Sub-Areas
 - Parcel Boundary
 - FEMA Flood Zones
 - Bryan City Limits
 - Bryan Extraterritorial Jurisdiction
 - Significant Development Location
 - Alternative Scenario 1
- SOURCES: City of Bryan, 2018; KKC, 2018; BCAD, 2018; ESRI Aerial Imagery, 2018.



RELLIS Campus Area Annexation Feasibility and Strategy Study

Map 18C

Recommended and Alternative
Annexation Scenarios



Alternative 2
7.1 Square Miles

**RELLIS
Campus
Parcel**
2.9 Square Miles

Timing: 5-7 months via exempt annexation (same for Alternatives 1 and 2), and depending on City and A&M coordination for annexing RELLIS Campus.

Sequencing: Either later rounds of separate exempt annexations for balance of study area, or include in three-year Municipal Annexation Plan (and potential for interim owner petitions and/or development agreements).

Development Outcomes:

- ♦ Sub-area 4 develops per the West Area Plan.
- ♦ Locations within Sub-area 3 develop per Bryan's Future Land Use Plan if not in the Western Gateway designation.
- ♦ Within Sub-area 1 and the rest of 3, the most significant development is assumed for the starred locations under the Residential, Employment and Hospitality scenarios.

Public Services:

- ♦ Basic services immediately in all scenarios.
- ♦ Full services in 2.5 years (or else within 4.5 years).
- ♦ See Roadway Infrastructure and Water/Wastewater Infrastructure exhibits in supplemental Infrastructure Assessment Report for locations of capital projects.

Refined Annexation Study Area	Significant Development Location
Annexation Study Sub-Areas	Alternative Scenario 2
Parcel Boundary	
FEMA Flood Zones	
Bryan City Limits	
Bryan Extraterritorial Jurisdiction	

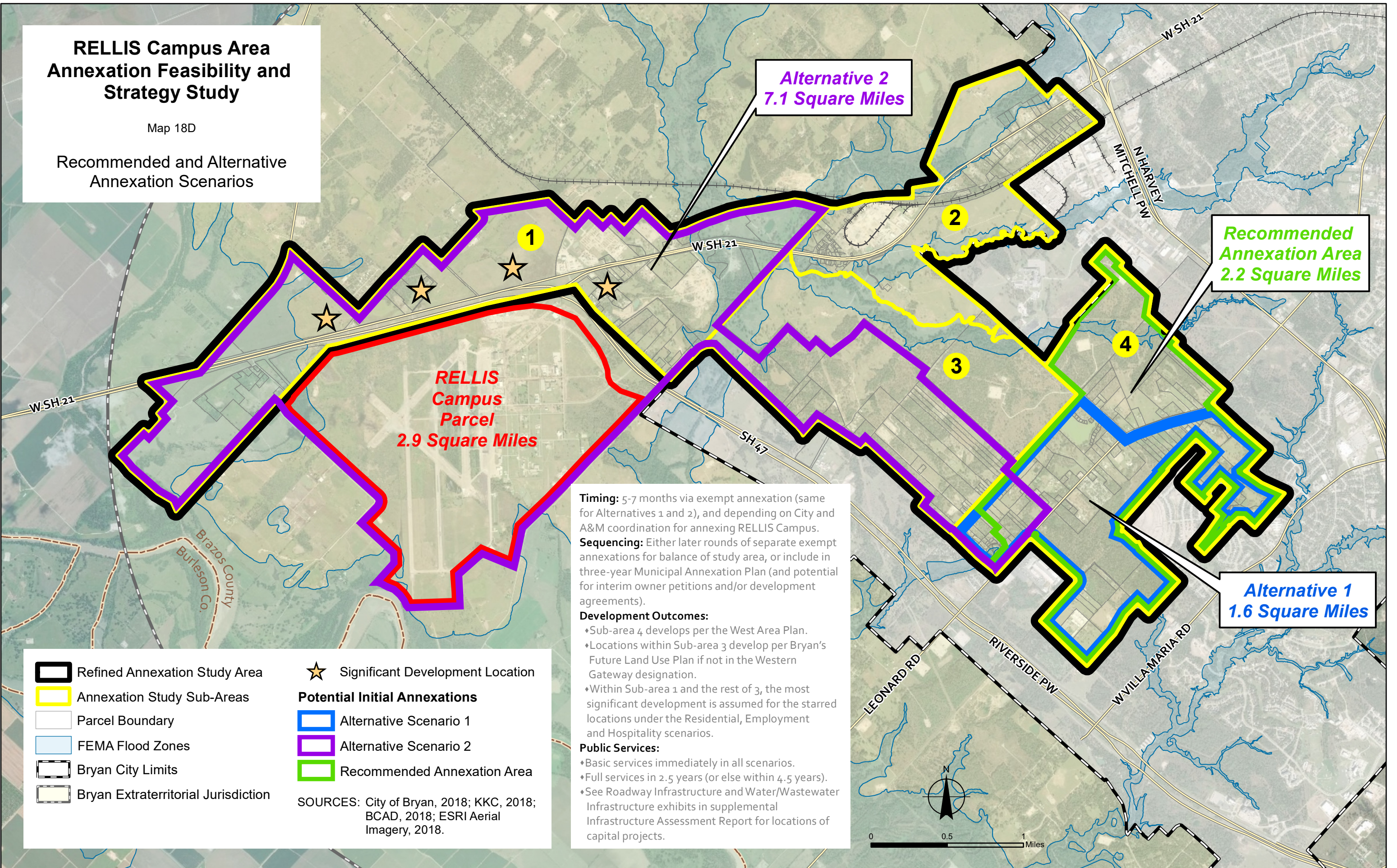
SOURCES: City of Bryan, 2018; KKC, 2018; BCAD, 2018; ESRI Aerial Imagery, 2018.



RELLIS Campus Area Annexation Feasibility and Strategy Study

Map 18D

Recommended and Alternative
Annexation Scenarios



Alternative 2
7.1 Square Miles

Recommended Annexation Area
2.2 Square Miles

RELLIS Campus Parcel
2.9 Square Miles

Alternative 1
1.6 Square Miles

Timing: 5-7 months via exempt annexation (same for Alternatives 1 and 2), and depending on City and A&M coordination for annexing RELLIS Campus.

Sequencing: Either later rounds of separate exempt annexations for balance of study area, or include in three-year Municipal Annexation Plan (and potential for interim owner petitions and/or development agreements).

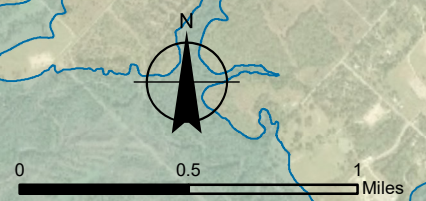
Development Outcomes:

- ♦ Sub-area 4 develops per the West Area Plan.
- ♦ Locations within Sub-area 3 develop per Bryan's Future Land Use Plan if not in the Western Gateway designation.
- ♦ Within Sub-area 1 and the rest of 3, the most significant development is assumed for the starred locations under the Residential, Employment and Hospitality scenarios.

Public Services:

- ♦ Basic services immediately in all scenarios.
- ♦ Full services in 2.5 years (or else within 4.5 years).
- ♦ See Roadway Infrastructure and Water/Wastewater Infrastructure exhibits in supplemental Infrastructure Assessment Report for locations of capital projects.

- Refined Annexation Study Area
 - Annexation Study Sub-Areas
 - Parcel Boundary
 - FEMA Flood Zones
 - Bryan City Limits
 - Bryan Extraterritorial Jurisdiction
 - Significant Development Location
 - Potential Initial Annexations**
 - Alternative Scenario 1
 - Alternative Scenario 2
 - Recommended Annexation Area
- SOURCES: City of Bryan, 2018; KKC, 2018; BCAD, 2018; ESRI Aerial Imagery, 2018.



most expeditious manner available for City-initiated annexation. This is one of the essential trade-offs between the horseshoe options relative to Alternative 2, which is fundamentally about early protection and management of the immediate RELLIS Campus vicinity.

Alternative Scenario 1, discussed below, is a variation on this recommended area and also involves starting annexation activity at the bottom of the horseshoe. Given that City-initiated annexations have been infrequent in Bryan for some time, even without further statutory restrictions, both of the horseshoe-focused options are suggested for multiple and inter-related reasons including:

- The horseshoe area has prospects for nearer-term development given its closer proximity to other existing development and subdivision activity within the city, along with schools, shopping, services, etc.
- Such closer-in locations should also be easier for the City to serve sooner, on a variety of fronts including fire response from Station No. 5 on W. Villa Maria Road/FM 1179, relative to the implications of incorporating areas near RELLIS that are farther removed from more populated areas of the current city limits.
- Laying the groundwork for more effective growth and land use guidance in this area by extending the City's zoning, municipal services and infrastructure would also support implementation of the West Area Plan that was completed in conjunction with the City's Comprehensive Plan update in 2016.

It should be noted that Sub-area 2, focused around the SH 21 segment farther east toward N. Harvey Mitchell Parkway/FM 2818, is even less attractive as a potential first annexation move given the extent of existing residential parcels it includes. The area remains of interest as it would enable the City to focus revitalization efforts along a key gateway corridor between downtown and the RELLIS Campus. However, it is not a favorable option for a near-term exempt annexation.

3) *As an alternative, consider another variation for an initial horseshoe area annexation.*

Like the recommended annexation area discussed above, the blue-outlined area on Map 18B (labeled Alternative Scenario 1) would involve near-term annexation in the ETJ horseshoe area before any annexation farther out toward the RELLIS Campus, or of the campus itself. This scenario also would focus on taking in most of Sub-area 4 through an early exempt annexation initiative. The main difference from the recommended area outlined in green is that Scenario 1 encompasses all of the parcels at the bottom of the horseshoe toward Riverside Parkway/SH 47 and the County Expo Complex. In exchange, it leaves out more area at the north end of Sub-area 4 that remains more rural in nature and closer to the industrial area along N. Harvey Mitchell Parkway/FM 2818 inside the city limits. Additionally, this scenario involves 95 residential parcels relative to 99 in the other two options.

4) *Continue to entertain, evaluate and act on periodic landowner requests for annexation on Bryan's west side in the RELLIS Campus vicinity.*

In particular, as incremental development occurs in the ETJ horseshoe area, the developing properties will likely come into the City by owner petition or as a requirement of City infrastructure being extended to such developments (where the City is the exclusive water and sanitary sewer service provider under a Certificate of Convenience and Necessity, or CCN, from the state). Such annexations reduce the amount of area that would need to be handled through the three-year Municipal Annexation Plan process, if the City employs it, or that would need to be included in a City-initiated exempt annexation. Owner-requested annexations also do not count against the state-imposed cap on the City's total amount of annexation per calendar year.

As discussed later in this report section, the City can also **consider annexation petitions from willing property owners in “sparsely populated areas”** as provided in Texas Local Government Code Section 43.028. Similar to City-initiated exempt annexations, this method takes less time and procedure than the three-year Municipal Annexation Plan process.

5) *Continue to pursue periodic exempt annexations within the annexation study area, whether annually or on some other timeline the City deems appropriate.*

The rationale would be to incorporate defined areas in a planned, orderly and sequential manner, using a phased approach based on the City’s physical and fiscal capacities to absorb new areas into the city limits, extend municipal services, and complete any necessary facility improvements. This approach would also spread out the administrative burden on City officials and staff.

Laying out clear municipal purposes and reasoning while avoiding multiple concurrent exempt annexations will also ensure that the City is meeting the intent of Texas Local Government Code Section 43.052(i). This section specifies that “A municipality may not circumvent the requirements of this section by proposing to separately annex two or more areas described by Subsection (h)(1) [areas that contain fewer than 100 separate tracts of land on which one or more residential dwellings are located on each tract] if no reason exists under generally accepted municipal planning principles and practices for separately annexing the areas.”

6) *At the appropriate time, when the City is prepared for it, complete an exempt annexation that extends into Sub-area 1 and the immediate vicinity of the RELLIS Campus.*

To accomplish the primary focus of this study – management of development potential around the immediate RELLIS Campus vicinity, as well as protection of this significant regional and public partner asset – the City should work toward an eventual exempt annexation along the lines of Alternative Scenario 2, which is outlined in purple on Map 18C. This scenario involves the maximum 99 residential parcels allowed for an exempt annexation and could include all of Sub-area 1 and portions of Sub-areas 3 and 4 down to Leonard Road near the Brazos County Expo Complex. The combination of larger parcels in this direction plus fewer in residential use means that much more territory can be incorporated through this alternative. This includes parcels around the SH 21 corridor near the campus as well as portions of the horseshoe area nearest to the previously incorporated Riverside Parkway/SH 47 corridor.

The City should also **annex the RELLIS Campus** as part of its annexation activity within Sub-area 1 or at a later appropriate point. Annexing the 1,877-acre campus – a property owned by the state and used for a public purpose – would not count against the City’s ability under state law to annex acreage each year equivalent to 10 percent of its current total city limits area. During this study, City officials also noted the intangible benefits of having RELLIS associated with Bryan, which would now be captured in the “Strategic” criterion for annexation that the consultant team recommends adding to the other criteria adopted by City Council in 2007 through Resolution No. 3128 (as discussed in the Annexation Context section of this report). Additionally, depending on the specific parcels potentially included along the north side of SH 21 near the RELLIS Campus, inclusion of the campus could be necessary to meet the minimum 1,000 foot width requirement for annexation areas under state law (as illustrated on Map 14, Final Annexation Study Area and Sub-Areas, in the Annexation Factors section of this report).

- 7) ***As a likely last resort, given the relative time and procedural factors, the City can use the three-year Municipal Annexation Plan process to plan and prepare for phased annexation of, and municipal service extension to, areas within the ETJ horseshoe or elsewhere within the RELLIS Campus vicinity that are not conducive for inclusion in an exempt annexation effort.***

Use of the three-year process would be necessary if the City wishes to expedite annexation of more west side territory than can be accomplished only through exempt and owner-requested means. Some properties identified in the Municipal Annexation Plan may still drop out during the three-year interim if development proceeds and/or they are incorporated sooner by owner request or as required by the City in return for extension of the City's utility infrastructure.

While the consultant team was charged with focusing on Bryan's west side in the RELLIS Campus vicinity, the team knows and appreciates that the City has potential annexation needs in other ETJ locations around the edges of Bryan. Part of the approach outlined above is to reserve some of the City's current accumulated annexation capacity for such other areas, especially given the extensive floodplain areas in various directions around the RELLIS campus that were ultimately removed from the current study's area of focus. The final resulting study area includes approximately 5,455 acres, or 8.52 square miles. **If the City were to annex the entire study area, this would still leave 5.196 square miles of unused annexation capacity from the City's current accumulated limit of 13.716 square miles.** To the extent that annexation in the study area occurs through owner requests, and given that some properties in the study area are "owned by the municipality, a county, the state, or the federal government and used for a public purpose," the City's overall annexation capacity will not be diminished when incorporating properties in those categories.

Finally, extensive floodplain areas to the west and south of the RELLIS Campus were ultimately removed from the study area as less of an annexation priority given their limited development potential. However, whether it involves the City, Brazos County, the Texas A&M University System or other partners, **the A&M System's RELLIS Campus initiative brings with it the potential for significant open space preservation and possible investment in passive and/or active recreational amenities in the campus vicinity and near the Brazos River** (in locations, if any, where greater public access to the river might be safe and appropriate). The *RELLIS Campus Master Plan* points out the possibilities for off-campus linkages (along with regional bikeway connections) from the substantial open space preservation and integration envisioned on campus.

Potential Expansion of Extraterritorial Jurisdiction

Illustrated on **MAP 19: Potential Future ETJ Expansion** are depictions of the City's future extraterritorial jurisdiction to highlight the possible extent of additional territory that could become part of Bryan's ETJ. Whether the City pursues any annexation as a result of this study, the City's baseline ETJ will automatically expand to five miles from the city limits versus the current 3.5 miles when Bryan's population surpasses 100,000 persons as specified in Texas Local Government Code Section 42.021, Extent of Extraterritorial Jurisdiction. The City's adopted Comprehensive Plan, updated in 2016, projects that Bryan's population will be approaching 120,000 persons by 2040.

The current 3.5-mile ETJ boundary has a yellow text label on the map while the future five-mile ETJ is labeled in blue. In the RELLIS Campus vicinity, this will extend the ETJ to encompass even more territory north and south of the SH 21 corridor toward Caldwell, as well as more area into Burleson County, across the Brazos River, extending to and beyond portions of FM 50 and the rich Brazos Bottom farmland around it. The pink-labeled boundary illustrates how far the ETJ would extend if the City were to annex the entire study area, especially the full extent of Sub-area 1 as that would cause the degree of westward and northwestward extension of the ETJ shown on the map, stretching north of Sandy Point

Road. It should be emphasized that the last described example and ETJ boundary depiction are entirely speculative and depend on the City's ultimate decision whether – and how much – to annex. However, the five-mile ETJ is an automatic outcome when the City reaches the 100,000 population threshold.

Another consideration related to the City's future ability to annex additional territory involves the development agreements required by Texas Local Government Code Section 43.016 (formerly 43.035), which have been highlighted in several places in this report. The City must offer these agreements to property owners in proposed annexation areas if their property is appraised for ad valorem tax purposes as being in agricultural (or wildlife management or timber) use. When a property owner accepts the agreement to keep his or her property in such use, the property becomes subject to the City's land use planning and regulatory authorities but is not incorporated and technically remains a part of the ETJ.

Both the Bryan City Charter and TLGC Section 43.002 establish the basic prerequisite for annexation that the subject property must be adjacent to the municipality. However, a unique aspect of Section 43.016 is that a property with an active development agreement is considered adjacent or contiguous to the municipality. As a result, other properties abutting the agreement property automatically become eligible for annexation in terms of the municipal adjacency requirement being satisfied. This is so even if the agreement property itself is not adjacent to the city limits and is located apart from any other ETJ property with an agreement. In its *Municipal Annexation in Texas* guide, the Texas Municipal League observes that:

A question that follows is whether it is also reasonable to conclude that the area that is the subject of the agreement acts to expand the City's extraterritorial jurisdiction? That expansion is not expressly provided for in the statute and has not been tested in court.

Potential Expansion of City Limits through Ongoing Annexation

Along with the speculative view above of the City's future potential ETJ, another related concept is the scale of additional territory that could be brought into the city through an ongoing program of periodic City-initiated annexations. Map 13 in the Annexation Context section of this report presented maximum potential annexation scenarios around the RELLIS Campus based on the City's current ability to annex an amount of area equivalent to 30 percent of its city limits size (13.716 square miles of 45.72 square miles in 2018, which was the maximum 30 percent accumulation of the 10 percent per year limit under state law). Any amount that the City chooses to annex up to the 30 percent limit will increase the size of the city limits which, in turn, means the 10 percent per year amount in the next year will also increase.

As with the maximum annexation scenarios map, there are numerous directions and possibilities for what specific areas the City might decide to annex in the future – and not only on Bryan's west side. Presented in **TABLE 9: Annexation Potential in Future Years** are the increasing amounts of annexation that would be possible per year under the 10 percent limit (and assuming, for illustration purposes, that the City used this maximum amount each year). In each successive year, the 10 percent limit would then be applied to an ever growing "pie" as the city limits continue to expand through annexation, wherever that annexation might occur.

RELLIS Campus Area Annexation Feasibility and Strategy Study

Map 19

Potential Future ETJ Expansion

New 3.5-Mile Extraterritorial Jurisdiction
If Study Area Annexed

Future 5-Mile
Extraterritorial Jurisdiction

Current 3.5-Mile
Extraterritorial Jurisdiction

RELLIS
Campus
Parcel

1

2

3

4

- Refined Annexation Study Area
- Annexation Study Sub-Areas
- Future 5-Mile ETJ at 100,000 Population
- New 3.5-Mile ETJ If Study Area Annexed
- Bryan City Limits
- Bryan Extraterritorial Jurisdiction (Current)

SOURCES: City of Bryan, 2018; KKC, 2018;
BCAD, 2018; ESRI Aerial Imagery, 2018.

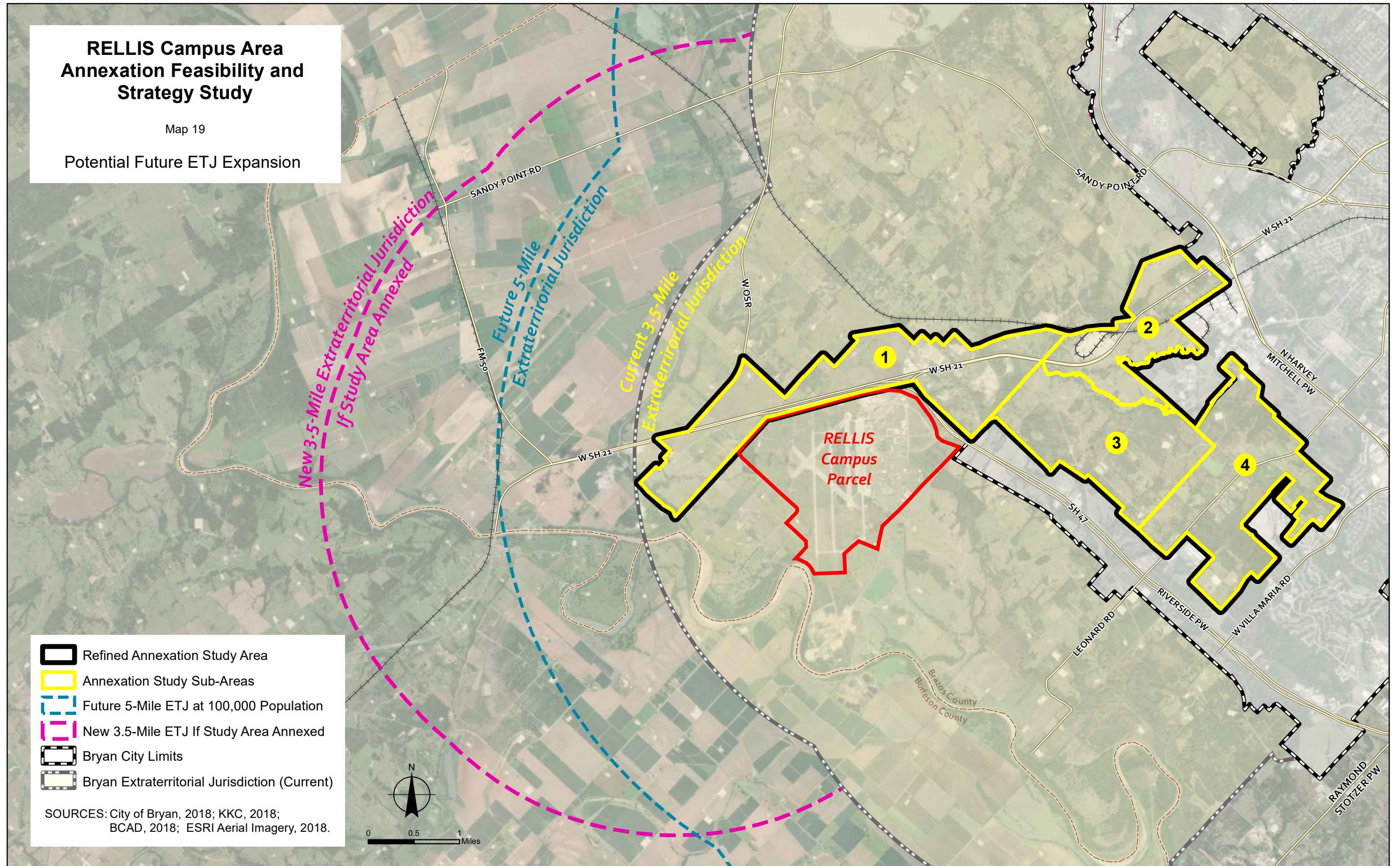


TABLE 9: Annexation Potential in Future Years

Year	City Limits (square miles)	10% Limit (per year)
2018	45.72	13.716*
2019	59.44	5.944
2020	65.38	6.538
2021	71.92	7.192
2022	79.11	7.911
2023	87.02	8.702
2024	95.72	9.572
2025	105.29	10.529

*Accumulated 30% amount from prior years without annexation.

SOURCE: Kendig Keast Collaborative.

Procedural Considerations

Recent Changes to Texas Statutory Framework for Municipal Annexation

The most recent session of the Texas Legislature, during 2017, led to another round of amendments and additions to the state’s primary annexation-related statutes in Texas Local Government Code Chapter 43. The provisions of Senate Bill 6 took effect on December 1, 2017. The new law divides Texas counties – and, thereby, cities – into two categories:

- Tier 1 cities, which are those located wholly within one or more counties of less than 500,000 population. Municipalities in Tier 1 counties can continue to pursue City-initiated annexations largely as they had prior to 2017.
- Tier 2 cities, which are those wholly or partly located within counties of 500,000 population or greater (or wholly located in one or more Tier 1 counties but proposing to annex any area within a Tier 2 county). As a result of Senate Bill 6, municipalities in Tier 2 counties face added procedures for City-initiated annexations, most notably, requiring landowner or voter approval of such annexations.

The newest available U.S. Census Bureau population estimate for Brazos County is 222,830 for 2017, meaning that Brazos County is a Tier 1 county. Senate Bill 6 also included an opt-in procedure for Tier 1 counties to convert to the more restrictive Tier 2 status through a voter-initiated petition and election process. For the time being this has not occurred in Brazos County. However, if 10 percent or more of the registered voters of Brazos County successfully petition, then the Commissioners Court must order an election in which a majority of the registered voters of Brazos County would have to approve the change from Tier 1 to Tier 2.

Exempt Annexations

Substantial amendments made to Texas Local Government Code (TLGC) Chapter 43 in 1999 had the main intent of requiring that any significant City-initiated annexation be preceded by a three-year planning and coordination process – much longer than the previous typical timeline for such annexation

activity in Texas. However, Section 43.052(h) continues to provide a series of exemptions from the three-year plan procedure, the two most notable of which for the City of Bryan are if:

- The area contains fewer than 100 separate tracts of land on which one or more residential dwellings are located on each tract, per subsection (h)(1); or if
- The area will be annexed by petition of more than 50 percent of the real property owners in the area proposed for annexation or by vote or petition of the qualified voters or real property owners, per subsection (h)(2).

The potential for City-initiated exempt annexations in the study area based on the 100 tracts provision (as well as the development agreement requirement in Step 1 below) was explored in the Scenario Evaluation and Implications section of this report. The following procedural steps would apply to any such exempt annexation initiative as summarized in the Texas Municipal League's *Municipal Annexation in Texas* guide:

1. **Development Agreements.** Determine if property owners in the proposed annexation area must be offered a development agreement, generally for properties appraised for ad valorem tax purposes as being in agricultural, wildlife management or timber management use. [Details in TLGC Section 43.016 (formerly 43.035).]
 2. **Service Plan.** City Council directs the appropriate City department(s)/staff to prepare a service plan that details the municipal services that will be provided to the area after annexation in accordance with TLGC Sections 43.065 and 43.056:
 - › Immediately upon annexation, provide the following services if they are provided within the city limits:
 - Police protection.
 - Fire protection.
 - Emergency medical services.
 - Solid waste collection, subject to exceptions in TLGC Section 43.056(o).
 - Operation and maintenance of water and wastewater facilities that are not within the service area of another water or wastewater utility.
 - Operation and maintenance of roads and streets, including road/street lighting.
 - Operation and maintenance of parks, playgrounds, and swimming pools.
 - Operation and maintenance of any other publicly owned facility, building, or service.
 - › Within 2.5 years, provide full municipal services (those provided within the city limits) unless certain services cannot be reasonably provided within that time and the City proposes a schedule to provide services within 4.5 years.
 - › Within “the period provided in the service plan,” substantially complete any necessary capital improvements unless the service plan is amended to extend the period for construction provided “the construction is proceeding with all deliberate speed.”
- [Details in TLGC 43.065 and 43.056.]
3. **Targeted Notification.** Before the 30th day before the date of the first hearing, provide written notice of the proposed annexation to property owners, railroads, and public and private entities if required. [Details in TLGC 43.062.] Additionally, as a result of Senate Bill 6 in 2017, a new TLGC Section 43.9051 requires specific information as part of the notice to public entities and

political subdivisions (similar to the information that already had to be provided to school districts per TLGC 43.905):

- › The area proposed for annexation;
- › Any financial impact on the public entity or political subdivision resulting from the annexation, including any changes in the public entity's or political subdivision's revenues or maintenance and operation costs; and
- › Any proposal the city has to abate, reduce or limit any financial impact on the public entity or political subdivision.

[Details in TLGC 43.905-90516, including that "public entity" includes a county, fire protection service provider, including a volunteer fire department, emergency medical services provider, including a volunteer emergency medical services provider, or special district.]

4. **Public Hearings.** City Council calls and holds two public hearings (minimum) at which all interested parties may be heard, with each hearing not less than 10, nor more than 20, days from the day of publication of the notice of the hearing. [Details in TLGC 43.063. The Texas Municipal League advises that the notification procedure is repeated for the second hearing. However, "nothing prohibits a city from expediting the process by publishing the notice of the hearings and/or holding the hearings close together (or perhaps even in one notice and as separate agenda items at the same meeting) so long as the appropriate timeframe is followed."]
5. **General and Specific Hearing Notice.** Publish notice of hearings in a newspaper of general circulation in the city and the area to be annexed and on the City's website, and send a written notice to school districts and public entities in the area. [Details in TLGC 43.062-063 and 43.905.]
6. **Hearing in Annexation Area.** If a written protest is filed by more than 10 percent of the adult residents of an area proposed for annexation within 10 days after the public hearing notice is published, at least one of the required hearings must be held in the area proposed for annexation if a suitable site is reasonably available. [Details in TLGC 43.063.]
7. **Period Before Final Action.** Provide a 20- to 40-day interval between the hearings and the date City Council first considers adoption of the annexation ordinance. [Details in TLGC 43.063.]
8. **Final Action.** City Council adopt annexation ordinance and approve final service plan.

In accordance with TLGC Section 43.064, "The annexation of an area must be completed within 90 days after the date the governing body institutes the annexation proceedings or those proceedings are void." This timeframe is relevant in cities where multiple readings of an ordinance across separate City Council meetings is required before the ordinance is considered finally passed, as "instituting the annexation proceedings" refers to first reading of the proposed ordinance.

Texas Local Government Code Section 43.028 enables cities to annex "sparsely populated areas" through a procedure that, similar to exempt annexations, takes less time than the three-year Municipal Annexation Plan process. However, this option is initiated by a petition from area landowners and is not a form of City-initiated annexation. Such areas are defined as being one-half mile or less in width, contiguous to the city limits, and vacant and without residents or having fewer than three qualified voters residing there. Another provision enables the City to annex such an area even if the contiguity requirement is not met provided a public right-of-way of a road or highway designated by the municipality is within the ETJ and would provide a link between the current city limits and the subject area (and the subject public right-of-way automatically becomes part of the annexation even if not

sought by the right-of-way owner). Within six to 30 days after the petition is filed, the City Council must hear the petition and the arguments for and against the annexation and either grant or refuse the petition as Council considers appropriate. If Council grants the petition, it may annex the area by ordinance.

Annexations Subject to Three-Year Annexation Plan

City-initiated annexations that do not qualify for the exemptions cited above must be accomplished through a Municipal Annexation Plan procedure per TLGC Section 43.052. Most notably, this section stipulates that any area identified in the Plan may not be annexed for at least three years (“beginning on the third anniversary of the date the annexation plan is adopted” or, for an area added to the plan later, beginning on the third anniversary of the date the plan was amended to add the area). The following procedural steps would apply to any such annexation initiative as summarized in the Texas Municipal League’s *Municipal Annexation in Texas* guide:

1. **Development Agreements.** Determine if property owners in the proposed annexation area must be offered a development agreement, generally for properties appraised for ad valorem tax purposes as being in agricultural, wildlife management or timber management use. [*Same as for an exempt annexation.* Details in TLGC Section 43.016 (formerly 43.035).]
2. **Municipal Annexation Plan and Initial Notification.** Prepare or amend Municipal Annexation Plan to include one or more proposed annexation areas. Within 89 days of plan adoption or amendment, provide written notification to landowners, public and private service providers, and railroads.
 - › If an area is removed from the plan before 18 months from the date of being placed in the plan, the area cannot be placed back in the plan for one year from that action.
 - › If the removal occurs 18 months or more after being placed in the plan, the area cannot be placed back in the plan for two years from that action.
 - › If an area remains in the plan for the full three years, its annexation must be completed within 30 days of the third anniversary. Otherwise, the City must wait five more years from the 30th day of the original annexation window to annex the area.

[Details in TLGC 43.052.]

3. **Inventory.** Complete and make available an inventory of all services and facilities provided by public and private entities in the proposed annexation area(s) that also determines the quality of the existing services. Information from other service and facility providers must be supplied to the City within 90 days after it is requested (which must be done through the written notification in Step 2 above), unless mutually extended, and must include specified information including the type of service provided and method of service delivery. [Details in TLGC 43.053.]
4. **Service Plan.** Prepare and make available a preliminary service plan that details the specific municipal services that will be provided to the area(s) after annexation. The final service plan must be completed before the 10th month after the inventory is prepared and before publication of the notice of the first public hearing. Timing requirements for provision of services following annexation are the same as for exempt annexations, in Step 2 of the exempt annexation procedure above. [Details in TLGC 43.056.]
9. **Targeted Notification.** Provide written notice of the proposed annexation to public entities within the period for providing notice of the public hearings. [Details in TLGC 43.0561.] Additionally, as a result of Senate Bill 6 in 2017, a new TLGC Section 43.9051 requires specific

information as part of the notice to public entities and political subdivisions (similar to the information that already had to be provided to school districts per TLGC 43.905):

- › The area proposed for annexation;
- › Any financial impact on the public entity or political subdivision resulting from the annexation, including any changes in the public entity’s or political subdivision’s revenues or maintenance and operation costs; and
- › Any proposal the city has to abate, reduce or limit any financial impact on the public entity or political subdivision.

[Details in TLGC 43.905-90516, including that “public entity” includes a county, fire protection service provider, including a volunteer fire department, emergency medical services provider, including a volunteer emergency medical services provider, or special district.]

5. **Public Hearings.** City Council calls and holds two public hearings (minimum) at which all interested parties may be heard, with each hearing not less than 10, nor more than 20, days from the day of publication of the notice of the hearing. [*Same as for an exempt annexation*, details in TLGC 43.0561. The Texas Municipal League advises that the notification procedure is repeated for the second hearing. However, “nothing prohibits a city from expediting the process by publishing the notice of the hearings and/or holding the hearings close together (or perhaps even in one notice and as separate agenda items at the same meeting) so long as the appropriate timeframe is followed.”]
 - › The hearings must be conducted before 90 days after the inventory in Step 3, above, is available for inspection.
6. **General and Specific Hearing Notice.** Publish notice of hearings in a newspaper of general circulation in the city and the area to be annexed and on the City’s website, and send a written notice to school districts, public entities, utility service providers and railroads in the area. [Details in TLGC 43.0561 and 43.905.]
7. **Hearing in Annexation Area.** If a written protest is filed by more than 20 adult residents of an area proposed for annexation within 10 days after the public hearing notice is published, at least one of the required hearings must be held in the area proposed for annexation or at the nearest suitable public facility. [Details in TLGC 43.0561.]
8. **Negotiation of Service Provision.** After completion of the required hearings in Step 6 above, negotiate with property owners (and any existing special districts) regarding provision of services to the area, as represented by five landowners appointed by Commissioners Court if no special districts exist in the proposed annexation area. If negotiations fail to reach a mutually agreeable outcome, including the option of a contractual agreement in lieu of annexation, then arbitration occurs. [Details in TLGC 43.0562-0564.]
 - › A contractual arrangement in lieu of annexation may address the provision of services, funding of the services, creation of a special district, and provisions governing permissible land uses and compliance with municipal ordinances, among other terms. [Details in TLGC 43.0563, and such agreements may also be negotiated with landowners in the ETJ whose property is not included in the Municipal Annexation Plan.]
9. **Final Action within Specified Time.** Within 30 days after the three-year anniversary of the Municipal Annexation Plan adoption that included the specific area proposed for annexation,

City Council adopts the annexation ordinance and approves the final service plan applicable to the specific area.

- › If the Municipal Annexation Plan process led to the arbitration stage under Step 9 above, and the outcome is agreeable to the City, then City Council may adopt the annexation ordinance and approve the final 10-year service plan applicable to the specific area within the 30-day window described above.

Additional Procedures for All Annexations

The Texas Municipal League’s *Municipal Annexation in Texas* guide outlines other notifications and procedures that must or should be completed for all annexations:

- Filing a certified copy of the annexation ordinance in the County Clerk’s office within 30 days of its adoption;
- Notifying the County Appraisal District of the boundary change for purposes of future property appraisals for ad valorem taxation;
- Notifying the Texas Comptroller’s office to ensure the City starts receiving sales tax revenue generated in the newly annexed area;
- Notifying cable providers and retail gas and water companies that pay franchise fees, as well as any certificated telecommunications providers (CTPs) that may be providing service and have access lines in the newly-annexed area as cities receive fee revenue from CTPs based on those lines (and also notifying the Texas Public Utility Commission);
- Notifying other entities as appropriate to the particular City and area; and
- Preparing an updated map showing the updated boundaries of the City and its ETJ, a copy of which must be kept in the offices of the City Secretary and the City Engineer.

A special section also describes the previous “preclearance” procedure that is no longer required due a 2013 U.S. Supreme Court decision which held that federal “preclearance” under the Voting Rights Act is no longer required for municipal actions that affect voting, including annexations. However, TML points out that preclearance could be reinstated in the future. In the meantime, “a city is still prohibited from annexation in a way that would dilute minority voter participation.”

Additionally, a previous notification to the Texas Secretary of State’s office is no longer required due to an inactive U.S. Census Bureau program through which the Secretary would correctly certify the legal validity of the annexation.

Further TML Guidance and Resources

The Texas Municipal League’s *Municipal Annexation in Texas* guide also provides more detailed background and considerations for two important elements of the municipal annexation process:

- Provision of services to annexed areas as this “is arguably the most contentious part of the annexation process ... [and] often leads to disagreements between a city and landowners or residents in an annexed area.”
- The development agreements that must be offered to property owners in accordance with Texas Local Government Code Section 43.056, especially with regard to aspects of such agreements that are not addressed by the statute.

TML advises that the extensive service planning provisions that were added to Chapter 43 in 1999 were adopted “to ensure that an annexed area received appropriate services after annexation.” Additionally, certain provisions of Section 43.056 apply only to the Municipal Annexation Plan procedure while others apply only to exempt annexations. Therefore, the TML guide provides commentary on every subsection within 43.056.

With regard to the Section 43.016 development agreements, the TML guide provides commentary on each of the following points for which 43.016 provides no direction – or limitations:

- When the offer must be made (typically prior to the City expending time and resources on other major process steps);
- How long the landowner has to accept or decline the agreement (within a reasonable timeframe such as 30 days); and
- What provisions should be in the agreement (leaving the City broad authority to frame an agreement on its preferred terms).

The City of Bryan has the development agreement template its staff developed and finalized in May 2009 during the City’s last annexation initiative. During this study, the consultant team contacted City of College Station staff and obtained (and provided to Bryan staff) an example of the annexation development agreements Bryan’s neighboring jurisdiction has used. College Station staff reported that their version largely follows the TML model for such agreements. Meanwhile, Bryan staff recalled more customization and editing to respond to City Council feedback in 2009. One difference is that the Bryan template specifies an initial agreement term of 15 years, with 10-year renewals possible upon written approval of both parties. The College Station agreements are for a 10-year term, with potential renewals.

The City of Bryan did not execute any agreements, although some had been signed and returned by ETJ property owners, as City Council ultimately chose not to pursue any City-initiated annexations. College Station staff confirmed a number of active development agreements in their ETJ, some of which have been renewed with the property owners for additional 10-year terms upon approval of City Council, while the City decided to annex other properties upon agreement expiration.

Along with its model for Section 43.016 development agreements, TML provides its member cities examples of various other documents necessary for municipal annexation efforts, subject to review and refinement by the respective City Attorney. The documents are available in Word format on the TML website under Legal Research / Topics / Land Use and Building Regulations / Annexation Documents.

Cost and Time Considerations

This last section describes the potential cost and time implications for the City principally from the Recommended Annexation Strategy, as well as under the two Alternative Scenarios. The descriptions are specific to the situation as much as possible and as available information allows. Otherwise, more generic information and/or assumptions are cited to fill out the cost and time narratives.

Capital and Operating Costs

The infrastructure assessment conducted by Kimley-Horn and Associates generated projected capital improvement costs associated with potential annexation initiatives in the RELLIS Campus vicinity. The fiscal impact analysis completed by TischlerBise built on Kimley-Horn’s work and also added projected operating costs for the various municipal functions that would be affected by annexation.

The following key conclusions can be drawn from this capital and operating cost information relative to the Recommended Annexation Strategy above:

- **The total public infrastructure costs associated with the Recommended Annexation Strategy – near-term annexation of nearly all of Sub-area 4 (also the focus of Alternative Scenario 1) – could potentially be in the \$15 million range based on the assumed development scenarios for the 20-year fiscal analysis timeframe.**
 - › The analysis of operating costs for Sub-Area 4 pointed to a significant positive net fiscal impact in the \$111 million range over the 20 years.
 - › This highly positive operating outcome would easily cover the anticipated capital expenditures as well, leading to an overall break-even point for Sub-area 4 in Year 16 (2034).
 - › The average annual positive fiscal impact is calculated as \$4.8 million.
- **A later annexation along the lines of Alternative Scenario 2, involving all of Sub-area 1 and portions of Sub-areas 3 and 4, would likely have a negative net fiscal impact on its own.**
 - › The fiscal analyses of Sub-areas 1 and 3 yielded net negative results.
 - › However, the positive net fiscal impact in Sub-area 4 is so substantial that the revenue generated just in that sub-area offsets the negative outcomes in the other three sub-areas.
 - › Therefore, earlier annexation of Sub-area 4 should enable easier absorption of the likely unfavorable fiscal equation for Annexation Scenario 2
 - › The positive net fiscal impact just in Sub-area 4 causes a positive fiscal outcome for the entire study area, meaning the City has a feasible pathway to achieving eventual annexation of the RELLIS Campus vicinity – and potentially the campus as well – through a move such as Alternative Scenario 2.
- **Total projected operating costs, over a 20-year period, from annexing the entire study area are in the \$105-\$110 million range.** Detailed service planning will be needed to refine operating costs for particular annexation target areas, and depending on the service implications for the particular area. In the meantime:
 - › The fiscal impact analysis results show that operating costs from the overall study area annexation would settle soon into the \$5-6 million range per year through the initial 20-year horizon. This holds true under all three development scenarios considered – Residential, Employment and Hospitality.
 - › Public safety services are the predominant share of the annual operating costs, with Fire at approximately 60 percent of the total in all three scenarios, followed by Police at approximately 30 percent.
 - › If a new fire station must be equipped and staffed in the early years of the 20-year study horizon, then a large share of the projected total annual operating costs above (\$5-6 million) will come online early from the new station (projected \$2.45 million per year).

The Recommended Annexation Strategy and Alternative Scenario 1 focus on near-term annexation within Sub-area 4 in the ETJ “horseshoe” area relative to the focus on the RELLIS Campus and its immediate vicinity in Alternative Scenario 2. Part of the rationale for the horseshoe focus is that the area has prospects for nearer-term development. In contrast, Alternative Scenario 2 emphasizes the potential best use of the City’s exempt annexation capability in terms of the amount of territory that could be incorporated early on, thereby accomplishing near-term protection of the RELLIS Campus and vicinity.

The study process actually considered two types of alternative scenarios: (1) the alternatives just described for prioritizing and recommending the areas that should be annexed sooner, and (2) alternatives involving the types and potential timing of development that might occur within the four sub-areas, especially within Sub-area 1 closest to the RELLIS Campus. Consideration of varying development outcomes and timing was especially needed for purposes of the infrastructure and fiscal impact elements of this study. It was generally assumed that the sub-areas closest to the existing incorporated city – Sub-areas 2 and 4 – would see the earliest development activity (years 1-5), followed by Sub-area 3 (years 5-10), and then Sub-Area 1 nearest the RELLIS Campus (10+ years).

Pursuing any of the near-term annexation options would involve the following cost considerations:

- The supplemental Fiscal Impact Analysis Report points out that capital costs are concentrated in Years 1-10 of the 20-year study horizon and then drop significantly at that point. Also, roadway-related capital projects are a substantial share of the total projected capital cost, with the next most significant item being the cost to increase the current 2 million gallons per day capacity of the Thompson Creek wastewater treatment plant.
- The supplemental report also highlights that debt financing could be advisable to allow capital costs to be spread over a longer period of time, including beyond the 20-year study horizon. The level of potential costs that would come with near-term annexation of Sub-area 4 could add to this debt financing imperative – and would have to be evaluated within the context of the City’s overall debt capacity and other competing needs.
- As the supplemental report also advises, development agreements and other municipal tools can help to mitigate the fiscal impacts from growth and allow the City to recover a portion of the capital costs. To the extent that near-term development activity could be greatest in Sub-area 4, this will provide more opportunities to pursue development agreements.

This is also where the development agreements required by Texas Local Government Code Section 43.016 (formerly 43.035) could especially come into play. To the extent the City can successfully execute such agreements with willing owners of ETJ properties in agricultural use, especially in strategic locations, this will ensure that the properties are kept in such limited use for the agreement duration (e.g., 10 years) without annexation, any potential urbanization pressures (and associated service demands and increases in traffic volumes) will be postponed, and the City will be able to enforce “all regulations and planning authority of the municipality that do not interfere with the use of the area for agriculture” (or wildlife management or timber). Additionally, as described under the Potential Expansion of Extraterritorial Jurisdiction heading earlier in this report section, the City may have the opportunity to annex (or offer development agreements to) additional properties that might not otherwise have been eligible due to their lack of adjacency to the current city limits.

Procedural Costs

City staff are salaried employees, already accounted for within the City’s annual budget. Therefore, the labor cost implications to administer an annexation initiative would be more in terms of the amount of staff time that would be diverted from routine responsibilities and other special initiatives staff might otherwise have time to pursue (i.e., the “opportunity cost” from devoting some amount of available staff time to annexation-related activities). To the extent that current City staffing does not provide the capacity to absorb all the time required for an annexation initiative, without affecting essential staff duties and community-serving activities, then the City would need to consider adding more staff, either for some temporary duration or longer-term, or turning to contract/consultant support.

An annexation initiative will also carry certain direct expenses that may or may not be accounted for in the City's budget. These include expenses such as:

- Supplies, printing and mailing costs associated with required property owner, interagency and public notices (along with typical newspaper publication costs);
- Potential space rental costs (plus potential security costs) depending on the location of public informational meetings and/or public hearings in a proposed annexation area;
- Refreshment costs for public events; and
- Mileage costs to/from public meetings/events in proposed annexation areas if City fleet vehicles are not used.

These costs will vary depending on the scale of the ultimate proposed annexation area, number of parcels involved, whether a public hearing within the annexation area is triggered and can be held in a feasible location, etc. Also pertinent are the purchasing/cost structure context and cost-saving opportunities at a given municipality such as Bryan.

For a **City-initiated exempt annexation** as described in the Recommended Annexation Strategy, the major types and sequence of activities that will require commitment of labor and other resources include (assuming no change in Brazos County's Tier 1 status):

- Final **delineation of a proposed area to pursue as an exempt annexation**, including associated mapping and information-gathering efforts (to ensure the newest available data and mapping), along with potential exploration of whether any annexation by owner petition might be possible.
- Completion of the **development agreement step**, including finalization of a model agreement, confirmation of the property owners to be notified, interaction with individual owners as needed to address questions and conclude agreements, and evaluation of the results and the number, location and nature of properties still subject to annexation from declining the City's agreement offer.
- **Service plan preparation**, including necessary input and coordination across City departments and functions, any interaction with other area service providers, and the more intensive effort necessary to identify and define specific capital projects and cost estimates.
- Preparation for and completion of **required written notifications by mail**, including both model and customized notices for different recipients (e.g., property owners versus specific entities), along with confirmation of the specific "public entities" that must receive special notifications under Texas Local Government Code Section 43.9051 (Bryan ISD, Brazos County Precinct 4 and Volunteer Fire Department, etc.), and including the effort necessary to prepare the "financial impact" information for the notification.
- Preparation for and completion of **general public hearing notices**, including required newspaper and website notices, as well as the **targeted notices** required for Bryan ISD and public entities.
- Preparation for and completion of **at least two City Council public hearings**, including associated presentations, handouts, etc. (and the potential for one hearing in or near the subject annexation area if a resident petition effort is successful).
- Conclusion of the process with **City Council adoption** of an annexation ordinance and the associated final service plan, including typical staff activities associated with City Council meetings, presentations and potential interaction with residents seeking more information.

- Completion of the **post-adoption filings and notifications** as itemized above under the Additional Procedures for All Annexations heading in this report section.

Additionally, a unique consideration in this case is the level of interaction between City and Texas A&M University System and/or RELLIS Campus representatives that will be necessary to plan for and conclude a smooth and mutually beneficial annexation of the campus property, should the City choose to pursue this option.

Potential Timeline for Recommended Annexation Strategy

Compiled in **TABLE 10: Approximate Timeline for Exempt Annexation** are the estimated timeframes for each essential step required. In some cases, the timeframes are expressed in ranges. This is because all of the staff-related time estimates in Table 10 need to be considered in light of the staff capacity discussion under the Procedural Costs heading earlier in this report section. Likewise, the size and nature of the area ultimately selected for an exempt annexation initiative will affect the time necessary for individual steps in the process and the overall process duration.

TABLE 10: Approximate Timeline for Exempt Annexation

Process Step	Timing Considerations
Final delineation of proposed area.	Estimated 2-4 weeks of staff time for mapping and updated information gathering about the proposed area. Additional time for any outreach to area property owners regarding potential interest in annexation by owner petition.
Development agreement offers.	Estimated 4-8 weeks of staff time to finalize a model agreement, confirm the property owners to be notified, and interact with individual owners as needed to address questions and conclude agreements (assuming 30 days is provided to property owners as a reasonable timeframe for considering and responding to the City's offer). Then time to evaluate the results and the number, location and nature of properties still subject to annexation from declining the City's agreement offer.
Municipal Service Plan preparation.	Estimated 1 month of staff time to draft, refine and finalize the Service Plan, including necessary input and coordination across City departments and functions, any interaction with other area service providers, and the more intensive effort necessary to identify and define specific capital projects and cost estimates.
Targeted notifications.	Estimated 1 month of staff time to compile the financial impact/mitigation information for each public entity or political subdivision associated with the study area as required by statute. Concurrent with the 1 month above, other staff can confirm all entities and parties needing notification (e.g., property owners, railroads, public and private entities) and finalize the model and customized notices for different recipients. Then estimated 1 week of staff time to package and complete mailing of the notifications. By statute, the notifications must be completed before the 30th day before the date of the first public hearing.

Process Step	Timing Considerations
Public hearing notices.	<p>Estimated 1 week of staff time to finalize a notice for newspaper publication and website posting, as well as to prepare the direct written notices required for Bryan ISD and any other public entities associated with the proposed annexation area. <i>Note that this is after City Council has called and set the public hearing dates.</i></p> <p>By statute, the notices must be timed to where the hearing will occur within a 10-20 day window after the published notice.</p>
Public hearings.	<p>In a window within 10-20 days of the published notice, complete a City Council public hearing on the proposed annexation. Two such hearings are required by statute. The City may repeat the notice process for the second hearing, which then must be held within a second 10-20 day window after the second published notice. Or, as suggested by the Texas Municipal League, the City may choose to expedite the process by publishing both notices concurrently and holding both hearings during the same Council meeting as separate agenda items (or publish the second notice soon after the first and hold both hearings within a condensed timeframe – so long as the 10-20 day window requirement is met for both hearings).</p> <p>Staff must also use the lead time before the first hearing to prepare the hearing presentation, any handouts or other informational materials, advance packet materials, etc.</p>
Public hearing in proposed annexation area (if successful protest).	<p>Within 10 days after the published hearing notice, the City must receive a written protest filed by more than 10 percent of the adult residents of the proposed annexation area for the statutory requirement to be triggered of holding at least one of the required public hearings in or near the area if a suitable site is reasonably available. If the City has scheduled the first hearing at the minimum 10 days after the published notice, then this is also when the City might become aware that the second hearing will need to be in (or near) the annexation area. This will entail some amount of additional time to secure an appropriate venue and make the arrangements for the second hearing. If the City was taking the approach of holding both hearings on the same Council agenda – and at the minimum 10 days after the published notice – then the second hearing would need to be postponed and rescheduled for the workable location and date in the proposed annexation area.</p>
City Council consideration of adoption.	<p>By statute, City Council may not take up first reading of an ordinance finalizing the annexation and adopting the associated Municipal Service Plan until a window 20-40 days after the second public hearing. During this time staff may complete typical activities associated with Council meetings, including any new or adjusted presentation and handout content, advance packet materials, and potential interaction with residents seeking more information.</p> <p>By statute, City Council must complete all required ordinance readings and conclude the annexation with 90 days after the first reading.</p>

Potential Total Timeframe to Adoption

In sum, **the steps for an exempt annexation as outlined above could potentially be completed within 21-29 weeks (i.e., approximately 5-7 months)**, depending on some of the variations noted, especially whether a written protest is successfully filed with the City to require that at least one public hearing be held in or near the proposed annexation area. The City might choose to do so on its own, incorporating such arrangements into its plans to expedite the process.

Process Step	Timing Considerations
Extend basic municipal services to the annexed area.	Immediately upon annexation , extend the specified services if provided within the city limits (e.g., police, fire, EMS, solid waste, water, wastewater, road/streets and associated lighting, parks/playgrounds and swimming pools, and other publicly owned facilities, buildings and services).
Post-adoption filings, notifications and updated official City jurisdiction map.	Estimated 1 month of post-adoption staff time to complete these checklist items, the timing of which are mostly at the City’s discretion except for the 30-day window after adoption for required filing of a certified copy of the annexation ordinance in the County Clerk’s office.
Provide full municipal services (as within the city limits).	Within 2.5 years of the annexation taking effect, unless certain services could not be reasonably provided within that time and the final Municipal Service Plan included an extended schedule to provide services within 4.5 years .
Substantially complete all necessary capital improvements.	Within “the period provided in the service plan,” unless the service plan is amended to extend the period for construction provided “the construction is proceeding with all deliberate speed.”

SOURCE: Texas Local Government Code Chapter 43, Municipal Annexation; Kendig Keast Collaborative.

As highlighted under the Procedural Costs heading earlier in this report section, a unique consideration in this case – also for potential timeline projections – is the level of interaction between City and Texas A&M University System and/or RELLIS Campus representatives that will be necessary if the City chooses to pursue annexation of the campus along with territory in its vicinity.

The potential timeline above is clearly preferable to the three-year Municipal Annexation Plan process. This is true both in terms of the overall duration and the more intricate and time-sensitive steps that must be completed along the way for a non-exempt annexation, leading up to the 30-day window for annexation once the three-year preparatory effort is done.

2018 RELLIS Campus Area Annexation Feasibility and Strategy Study

INFRASTRUCTURE ASSESSMENT



SEPTEMBER 2018 | VERSION 3

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EXECUTIVE SUMMARY

Kimley-Horn and Associates, Inc. (KHA) completed this infrastructure assessment in collaboration with Kendig Keast Collaborative (KKC) and TischlerBise, Inc. (TBI) in order to assess costs for conceptual water, sewer, and roadway infrastructure to serve the area identified for annexation by the City of Bryan, Texas. The area for the assessment included approximately 4,170 acres on the city's west side in the area of, but not including, Texas A&M University System's RELLIS Campus. Existing development within the study area is generally limited to rural property and agricultural lands. Subsequently, water and sewer services within the study area are limited as are improved public roadways. This infrastructure assessment was prepared as a supplement to the KKC feasibility and strategy study.

The annexation area and development scenarios were developed by KKC and TBI and organized into three 5-year phases comprised of fiscal analysis zones (FAZ). Infrastructure items were determined by assessing ultimate demands and associated infrastructure needs for the entire annexation area. These items were subsequently divided and assigned to each of the respective FAZ. This document includes a summary of existing conditions and the methodology and design criteria used in assessing conceptual water, sewer, and roadway alignments and construction cost projections.

INTRODUCTION

DESCRIPTION OF STUDY AREA

The subject area for this assessment consisted of approximately 4,170 acres on the City of Bryan's west side. The area is bounded on the south and east by the city's existing western limit and the limit line along SH 47, and Villa Maria Rd forming an area nicknamed the "horseshoe" due to its characteristic shape. Texas A&M University System's RELLIS campus forms the western boundary and the SH 21 corridor the northern. The area is primarily rural property with limited acreage homesteads and agricultural lands. The annexation area and development scenarios were developed by KKC and TBI and organized into three 5-year projections or phases (See Appendix for Vicinity Map).

Phase 1, with a 0 to 5-year projection, is comprised of FAZs 2 & 4. FAZ 4 encompasses the southern portion of the "horseshoe" along Leonard Road. FAZ 2 includes the area along the SH 21 corridor from the road crossing with Still Creek and the western city limit.

Phase 2, with a 5 to 10-year development horizon, is defined by FAZ 3, which includes the majority of the infill of the "horseshoe".

Phase 3, defined by a 10 to 15-year development horizon, includes FAZ 1, which is comprised of the area along the SH 21 corridor north of the RELLIS Campus.

OBJECTIVE AND SCOPE OF ASSESSMENT

This assessment was completed in accordance with the project scope in order to:

1. Document the types and levels of existing city services in the incorporated areas closest to the project study area, specifically including:
 - Water,
 - Wastewater,
 - Drainage and Transportation.
2. Identify and discuss service provision and considerations relevant to the study area.
3. Provide an itemization of infrastructure to satisfy statutory requirements.

WATER

EXISTING CONDITIONS

This area primarily consists of undeveloped property, small and large lot residential homes, and agricultural uses. Given the limited development throughout the study area, most property owners are currently served by private water wells; however, the City of Bryan did acquire the former Brushy Creek Special Utility District distribution network that previously served the area. The Certificate of Convenience and Necessity (CCN) was also purchased from OSR Water Supply Corporation in April of 2010.

The area along Villa Maria Road and Leonard Road within the southern portion of the “horseshoe” is currently served by an existing 24-inch water line parallel to Leonard Road. This large infrastructure should have adequate capacity to serve the development in Phase 1 (FAZ 4).

ANTICIPATED WATERLINE IMPROVEMENTS

As mentioned previously, development within FAZ 4 of this assessment should be adequately supported by existing infrastructure; however, future development within FAZs 2 and 3 will require some public improvements. Fortunately, the city has already taken action to address this need. At the time of this assessment, Phase 1 of the SH 47 water line will extend an 18” water line from the 24-inch line parallel to Leonard Road, along SH 47, to SH 21. Phase 2 of this project will loop the line back to the existing lines in the area of SH 21 and FM 2818 and connect existing infrastructure acquired from OSR Water Supply Corporation. These improvements should address the demand associated with FAZs 2, 3, and 4 of this assessment. Subsequently, service will need to be extended along the north side of SH 21 to serve FAZ 1 at some future date.

Additionally, the 2007 Water Master Plan prepared by Mitchell & Morgan, LLP also identified a 2-million-gallon elevated storage tank that would be required within the boundary of FAZ 3. The city confirmed that the property for the future tank site has been acquired.

WASTEWATER

PREVIOUS STUDIES

The basis of the wastewater portion of this assessment expands upon the work and conclusions of the following reports:

- City of Bryan Westside Wastewater Collector System - Conceptual Engineering Study; dated 12/29/2010, prepared by Steve Duncan, P.E. of Jones & Carter, Inc.
- Riverside Sewer Extension – Conceptual Engineering Study; dated 1/26/2018, prepared by Matt Dawson-Mather, P.E. of the City of Bryan

The improvements identified in the reports that are required to serve the subject area of this assessment were upsized based on the demand projections of this study and incorporated in the sewer costs.

EXISTING CONDITIONS

The subject area primarily consists of undeveloped property, large lot residential homes, and agricultural land uses. While most of the subject area falls within the city’s sewer CCN, it is assumed the individual properties are currently served with private onsite septic systems. Separately, it should be noted that the Riverside, Silver Hill Estates, and Linda Lakes residential subdivisions in the area of Leonard Road, SH 47, and Linda Lane are within the River Side WWTP CCN. The approximate 95-acre River Side WWTP CCN privately owns and maintains a WWTP for service of the residential lots within the CCN boundary. At the time of this study it was communicated that city staff does not have interest in acquiring this service area or infrastructure.

The topography of the study area generally falls to the south and southwest. There are several creeks, tributaries and low-lying areas contained within the study area. Still Creek runs from the northeast to the southwest across the northern portion of the study area where it intersects with Thompson Creek that eventually discharges to the Brazos River. No survey was performed as a part of the scope of this assessment. The depth and location of the existing lines were based on the city's GIS information.

METHODOLOGY AND DESIGN CRITERIA

KHA utilized information provided by the City of Bryan as the basis of this study. This information included the City of Bryan GIS data on existing sanitary sewer systems, aerial topography, property boundaries, and aerial photographs. The primary service area of the assessment was limited to the Annexation FAZs prepared by others.

To evaluate the wastewater collection system alternatives, KHA generated preliminary pipe alignments that would serve the primary service area. Utilizing the topography information and the flow line information on the existing sanitary mains, KHA laid out preliminary alignments. The proposed pipe grades used minimum pipe slopes or followed natural ground where possible with the goal to maintain adequate cover and terminating with a minimum of 4-feet of depth. Based on the conceptual grades, the wastewater service area will require two lift stations in addition to the three lift stations west of SH 47 that were identified in the 2010 Jones and Carter Report. Demands for the service area were assigned based on the greatest wastewater demand scenario prepared by others. Wastewater capacity was assessed for each alignment based on the minimum grade. Manning's Equation was used to calculate the full flow capacity of each segment of the pipe network in order to assign a preliminary sewer pipe size.

DESIGN CRITERIA

The 2012 Bryan / College Station Unified Design Guidelines for Sanitary Sewer were used as the primary design guidelines for this study. Texas Commission on Environmental Quality (TCEQ) guidelines, as established in the Texas Administrative Code under Title 30 – Environmental Quality, Part I, Chapter 217 – Design Criteria for Wastewater Systems, were also utilized.

ANTICIPATED WASTEWATER IMPROVEMENTS

It is estimated that Phase 1 can be served in a 2-step approach, by first constructing the infrastructure identified in the Jones & Carter report from the connection in Foster Lane to the area surrounding the River Side WWTP CCN. Step 1 includes the two lift stations identified in the Jones & Carter report and approximately 55,000 linear feet of gravity sewer and 10,800 linear feet of force main. These improvements can serve the portion of the SH 47 corridor up to Linda Lane that is currently in the city limits, as well as FAZ 4 that includes the Leonard Road corridor. This does not include the area within FAZ 2 that is identified to be included in Phase 1 of the Annexation scenario.

Step 2 of Phase 1 provides the necessary infrastructure to serve FAZ 2. It includes the additional lift station identified at Thompson Creek in the city's sewer report as well as another proposed by this study on the west side of SH 47 at Thompson Creek. Approximately 28,000 linear feet of gravity sewer and 4,000 linear feet of force main are also required.

Phase 2 provides service to FAZ 3 and will require approximately 8,700 linear feet of gravity sewer.

Phase 3 provides service to FAZ 1 and will require another lift station to serve the western portion along the floodplain of the Brazos River and approximately 13,000 linear feet of gravity sewer and 5,800 linear feet of force main.

It should also be noted that future upgrades will be required to the Thompson Creek WWTP as development occurs within the annexation area and wastewater discharges increase. The plant's current capacity is 2 million gallons per day (MGD), with an average demand of 0.8 MGD. Since the actual timing of future development and subsequent sanitary connections are unknown at this time, it is the consensus of city staff and the consultant team to include only costs for a 2 MGD expansion to the current permitted capacity of 4 MGD.

ROADWAYS & DRAINAGE

EXISTING CONDITIONS

Given the large lot undeveloped nature of the subject area, there are limited private and county roads that traverse the area. Public facilities include state maintained Leonard Road that bisects FAZ 4, and SH 21 that bisects FAZs 1 and 2. SH 47 also lies on the southern boundary of the study area. FAZ 3 does not include any public facilities at this time.

METHODOLOGY AND DESIGN CRITERIA

KHA completed the roadway assessment by overlaying the city's thoroughfare plan in the subject area and evaluating connectivity of the area in context of the future development of the RELLIS Campus. Costs included in the study were limited to collectors and arterials as it was assumed local and freeway sections would be constructed by others. Since future development of the area is assumed to be initiated and completed by private developers, in accordance with the Thoroughfare Plan, it is the consensus of city staff, based on past experience, to assess only half of the ultimate roadway construction cost to the city.

Cost for upgrading existing county roads to the ultimate section identified in the Thoroughfare Plan were also included; however, future maintenance and staff time cost were not included. Upgrades to existing local county roads were assumed to be addressed as future maintenance or reconstructed with development.

Within the annexation study area, the adopted thoroughfare plan includes:

- NW/SE minor arterial extending from Traditions Boulevard at Villa Maria to SH 21
- NE/SW minor arterial extending from Shiloh Avenue to SH 47
- Upgrading Leonard Road to a minor arterial
- NE/SW Major collector from Silver Hill Road to the proposed NW/SE minor arterial
- Extending Linda Lane as a major collector to FM 2818
- Upgrading and extending Chick Lane to a major collector intersecting Linda Lane to the north

Additionally, at the request of city staff, cost for upgrades to the portion of Goodson Bend Road bounding the RELLIS campus were included in the FAZ 1 numbers.

Costs were evaluated and assigned in accordance with the respective cross sections reflected in the 2012 Bryan / College Station Unified Design Guidelines for Streets and Alleys. Major Collectors were evaluated as a 48-foot wide pavement section with two travel lanes, a shared left turn lane, and two

6' bike lanes. Minor Arterials were evaluated as a divided section with four travel lanes, and two 6' bike lanes. Two 6-foot sidewalks were also included with both sections.

Additionally, bridge costs were assessed at all proposed creek crossings throughout the study area. Costs for traffic signals, storm drainage, landscaping, survey and design were also included. Assumptions for these can be reviewed in the Roadway Cost Assessment included in the Appendix of this report.

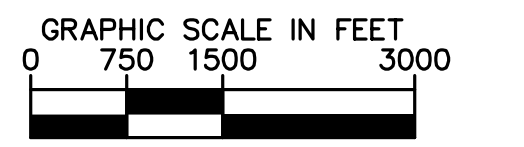
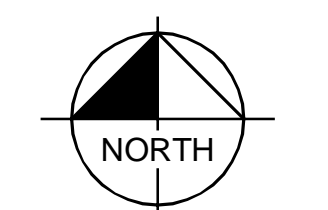
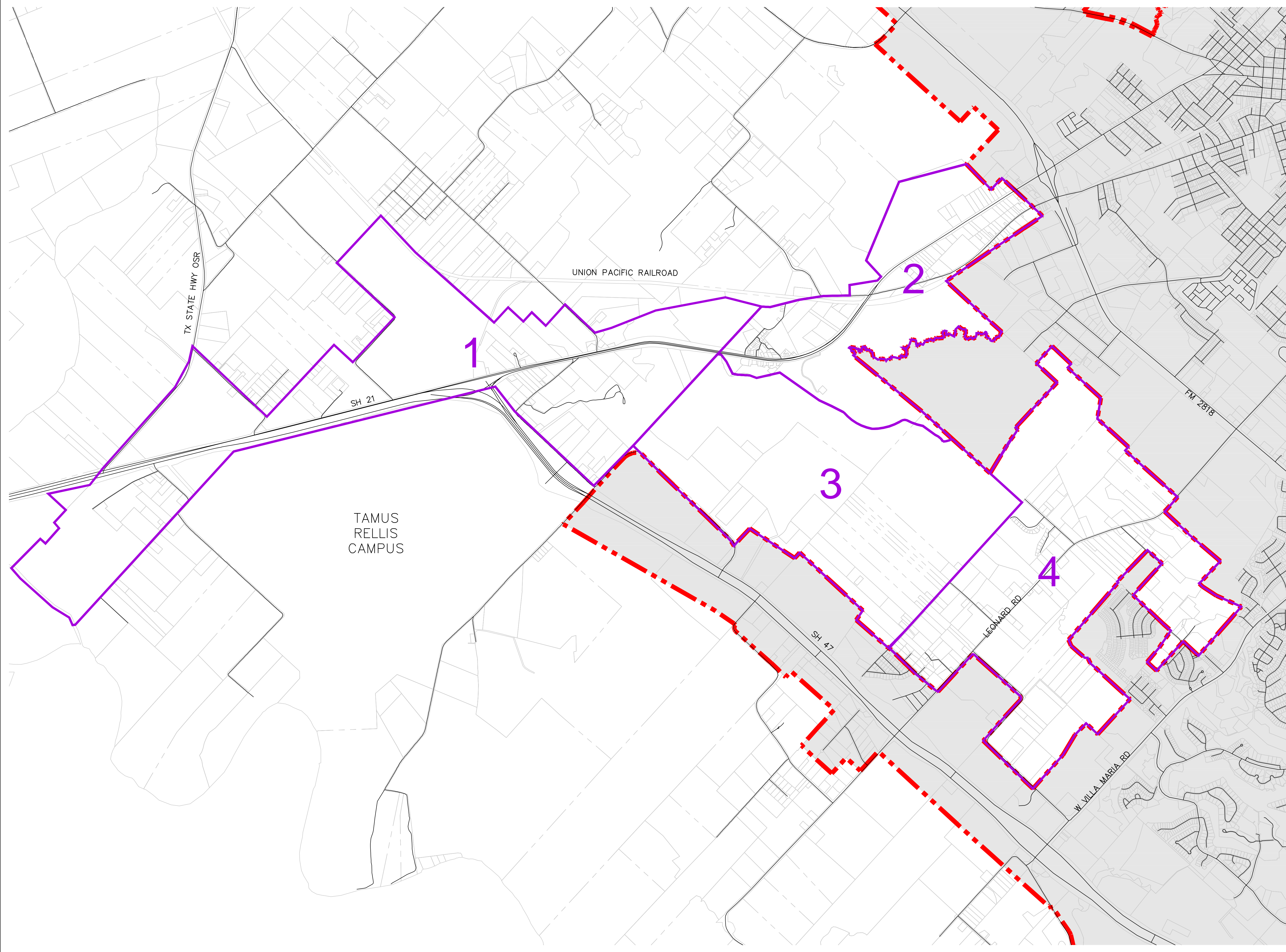
ANTICIPATED ROADWAY & DRAINAGE IMPROVEMENTS

Given the RELLIS Campus location at the intersection of SH 47 and SH 21 and the basis and nature of the subject assessment, KHA did not determine the need for additional public roadway alignments; however, given the limited development and existing public roadway network in the annexation area, the roadway improvements are the most significant infrastructure cost. A breakout of these costs is presented in Table 1 below.

Table 1. Roadway Infrastructure Costs

Annexation Phase	Upgrades (ft)	New Construction (ft)	Bridge Construction (ft)	Total Cost
Phase 1 (FAZs 2 & 4)	6,920	30,300	3,750	\$81.8 M
Phase 2 (FAZ 3)	5,060	23,640	5,000	\$91.1 M
Phase 3 (FAZ 1)	8,620	0	0	\$6.6 M
Total	10,060	53,305	8,750	\$179.5 M

Appendix 1: Vicinity Map



LEGEND

- ANNEXATION STUDY SECTION
- - - CITY LIMIT
- - - PROPERTY BOUNDARY

VICINITY MAP STUDY SECTION BOUNDARIES

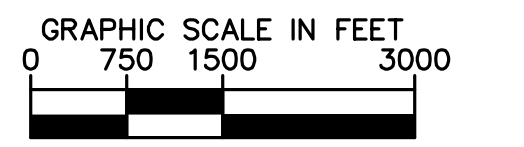
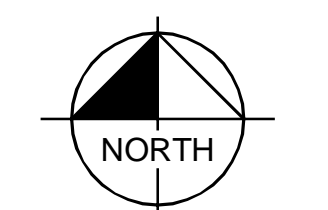
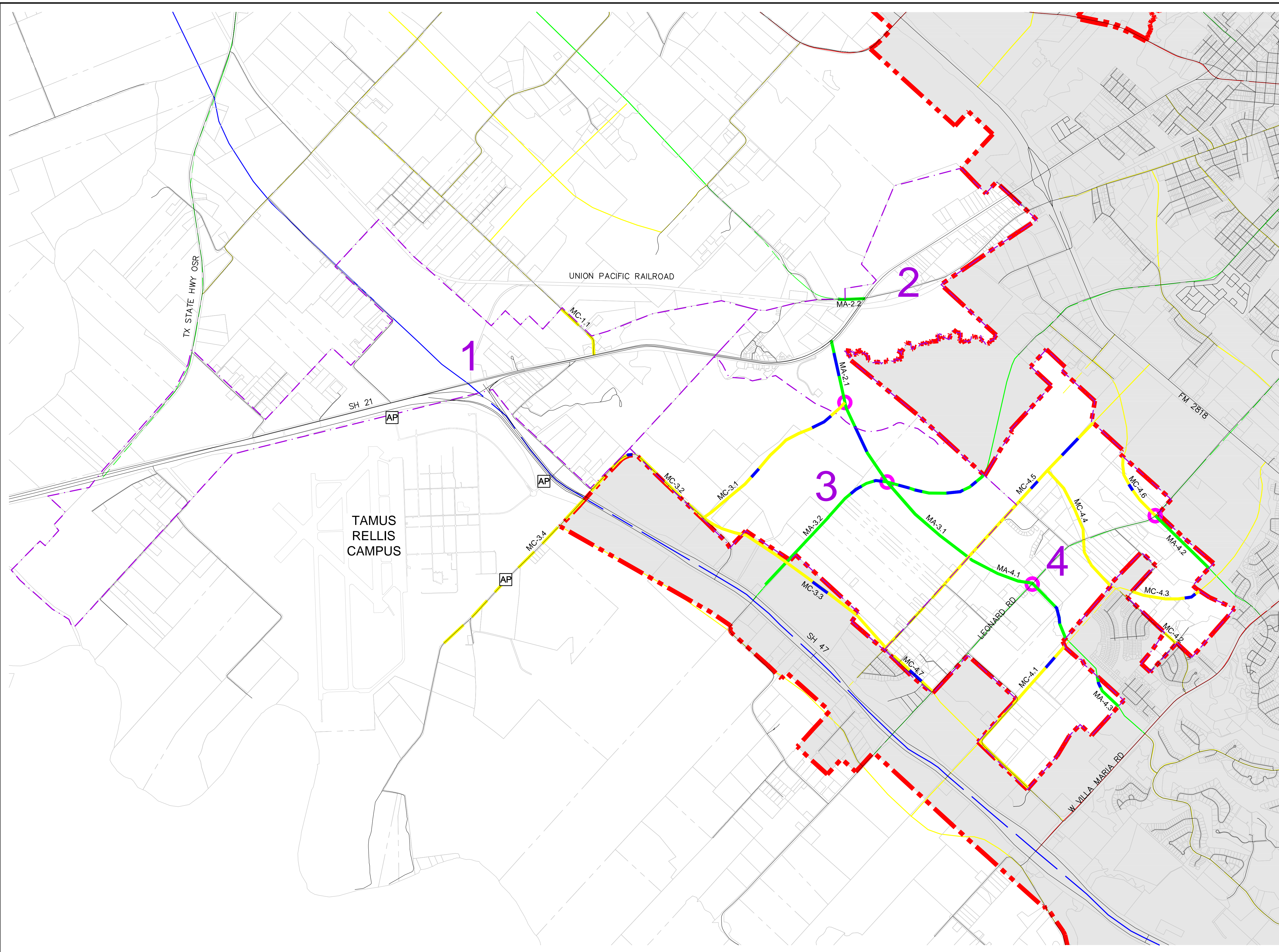
2018 RELIS CAMPUS AREA ANNEXATION STUDY
BRYAN, TX.



2800 South Texas Avenue, Suite 201 | Tel. No.(979) 775-9595
Bryan, Texas 77802 | Fax No.(979) 775-9599
TBPE Registration No. F-928

Appendix 2: Roadway and Drainage Infrastructure Exhibit





LEGEND

- ANNEXATION STUDY SECTION
- - - CITY LIMIT
- PROPERTY BOUNDARY
- MAJOR COLLECTOR
- MINOR ARTERIAL
- BRIDGE/DRAINAGE STRUCTURE
- TRAFFIC SIGNAL
- AP
RELLIS ACCESS POINT

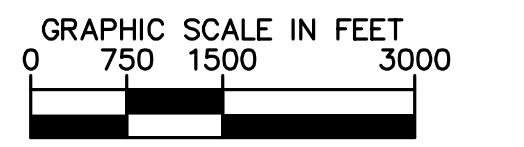
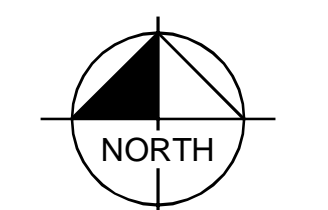
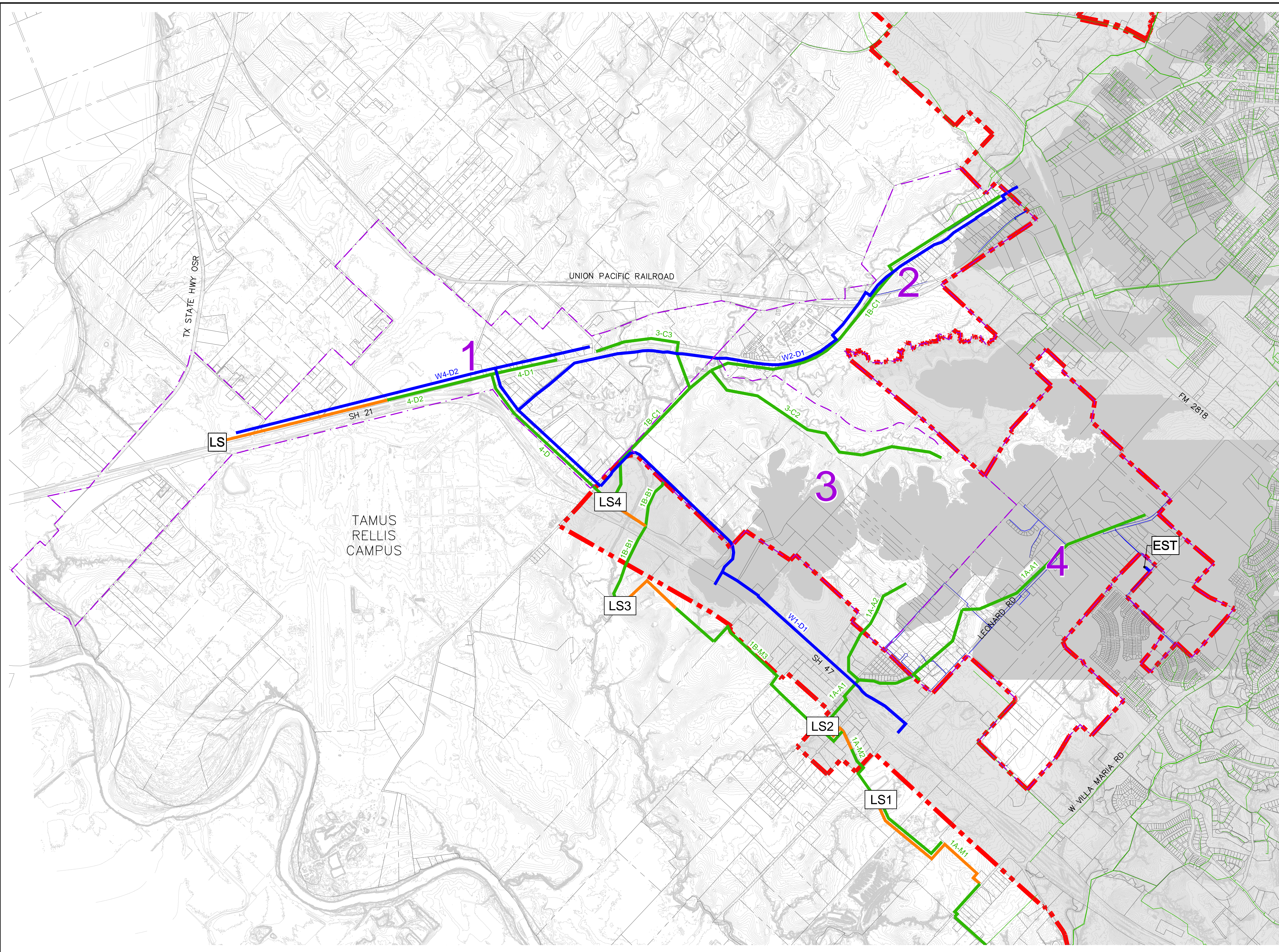
**ROADWAY AND DRAINAGE
INFRASTRUCTURE
EXHIBIT**

**2018 RELLIS CAMPUS
AREA ANNEXATION
STUDY
BRYAN, TX.**



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 Bryan, Texas 77802 Fax No. (979) 775-9599
 TBPE Registration No. F-928

Appendix 3: Water / Wastewater Infrastructure Exhibit



LEGEND

- ANNEXATION STUDY SECTION BOUNDARY
- - - CITY LIMIT
- - - PROPERTY BOUNDARY
- WASTE WATER
- WASTEWATER FORCE MAIN
- WATER
- LS LIFT STATION
- EST ELEVATED STORAGE TANK
- EX. WASTEWATER LINE
- EX. WATER LINE

WATER/WASTEWATER INFRASTRUCTURE EXHIBIT

**2018 RELIS CAMPUS AREA ANNEXATION STUDY
BRYAN, TX.**



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Bryan, Texas 77802
Tel. No. (979) 775-9595
Fax No. (979) 775-9599
TBPE Registration No. F-928

Appendix 4: Projected Infrastructure Cost Summary



INFRASTRUCTURE COST SUMMARY

Issue Date 9/21/2018

Description	Construction Cost	Contingency	Engineering, Surveying and Testing	Subtotal
<i>PHASE 1 (FAZ 2 and 4) Public Infrastructure Components</i>				
Roadways*	\$ 31,184,362	\$ 4,677,654	\$ 5,020,682	\$ 40,882,699
Sanitary Sewer	\$ 26,830,176	\$ 4,024,526	\$ 3,756,225	\$ 34,610,927
Water	\$ 1,735,635	\$ 260,345	\$ 279,437	\$ 2,275,417
Subtotal	\$ 59,750,173	\$ 8,962,526	\$ 9,056,344	\$ 77,769,043
<i>PHASE 2 (FAZ 3) Public Infrastructure Components</i>				
Roadways*	\$ 34,753,472	\$ 5,213,021	\$ 5,595,309	\$ 45,561,802
Sanitary Sewer	\$ 2,313,070	\$ 346,961	\$ 323,830	\$ 2,983,860
Water	\$ 2,546,703	\$ 382,005	\$ 410,019	\$ 3,338,727
Subtotal	\$ 39,613,244	\$ 5,941,987	\$ 6,329,158	\$ 51,884,389
<i>PHASE 3 (FAZ 1) Public Infrastructure Components</i>				
Roadways*	\$ 2,501,008	\$ 375,151	\$ 402,662	\$ 3,278,822
Sanitary Sewer	\$ 4,956,160	\$ 743,424	\$ 693,862	\$ 6,393,446
Water	\$ 5,473,625	\$ 821,044	\$ 881,254	\$ 7,175,922
Subtotal	\$ 12,930,793	\$ 1,939,619	\$ 1,977,778	\$ 16,848,191
Grand Total				\$ 146,501,623

*Roadway estimates reduced by 50% to reflect developer participation in future construction cost.

Appendix 5: Infrastructure Cost Projection Information

Opinion of Probable Roadway Cost

Key Project Name Description Phase City					Roadway Components				Bridge Components		Roadway Component Costs							Roadway Allowances								
					Length	Section	Ultimate Section	Traffic Signals	Length	Bridge Width (LF)	106	206	306	403	406	407	Roadway Construction Subtotal	Mobilization	Traffic Control	Pavement Markings	Roadway Drainage	Landscaping	Irrigation	Allowance Subtotal		
											Excavation	Stabilization	Pavement	4' Sidewalk	Street Lights	Traffic Signals										
1	MC-4.1		1A	BRYAN	6000	MAC	MAC			450	50	\$231,157	\$312,800	\$1,650,000	\$360,000	\$105,000	\$0	\$2,658,957	10%	6%	3%	30%	5%	0%	\$1,435,837	
2	MC-4.1-B1		1A	BRYAN		MAC	MAC					\$0	\$0	\$0	\$0	\$0	\$0	\$0	10%	6%	3%	30%	5%	0%	\$0	
3	MC-4.2		1A	BRYAN	530	I2L	I2L					\$15,391	\$21,147	\$121,900	\$31,800	\$10,500	\$0	\$200,738	10%	6%	3%	30%	5%	0%	\$108,399	
4	MC-4.3		1A	BRYAN	1950	MAC	MAC					\$75,126	\$101,660	\$536,250	\$117,000	\$35,000	\$0	\$865,036	10%	6%	3%	30%	5%	0%	\$467,120	
5	MC-4.3-B1		1A	BRYAN		MAC	MAC			390	50	\$0	\$0	\$0	\$0	\$0	\$0	\$0	10%	6%	3%	30%	5%	0%	\$0	
6	MC-4.4		1A	BRYAN	4500	MAC	MAC					\$173,368	\$234,600	\$1,237,500	\$270,000	\$80,500	\$0	\$1,995,968	10%	6%	3%	30%	5%	0%	\$1,077,823	
7	MA-4.3		1A	BRYAN	1070	MIA	MIA					\$65,627	\$95,587	\$377,472	\$64,200	\$21,000	\$0	\$623,886	10%	6%	3%	30%	5%	2%	\$349,376	
8	MA-4.3-B1		1A	BRYAN		MIA	MIA			190	65	\$0	\$0	\$0	\$0	\$0	\$0	\$0	10%	6%	3%	30%	5%	2%	\$0	
9	MA-4.1		1A	BRYAN	3830	MIA	MIA	1				\$234,907	\$342,147	\$1,351,139	\$229,800	\$70,000	\$350,000	\$2,577,992	10%	6%	3%	30%	5%	2%	\$1,443,676	
10	MA-4.1-B1		1A	BRYAN		MIA	MIA			600	65	\$0	\$0	\$0	\$0	\$0	\$0	\$0	10%	6%	3%	30%	5%	2%	\$0	
11	MA-4.2		1A	BRYAN	2475	MIA	MIA	1				\$151,800	\$221,100	\$873,125	\$148,500	\$45,500	\$350,000	\$1,790,025	10%	6%	3%	30%	5%	2%	\$1,002,414	
12	MC-4.5		1A	BRYAN	6166	MAC	MAC					\$237,553	\$321,454	\$1,695,650	\$369,960	\$108,500	\$0	\$2,733,117	10%	6%	3%	30%	5%	0%	\$1,475,883	
13	MC-4.5-B1		1A	BRYAN		MAC	MAC			1104	50	\$0	\$0	\$0	\$0	\$0	\$0	\$0	10%	6%	3%	30%	5%	0%	\$0	
14	MC-4.6		1A	BRYAN	2095	MAC	MAC					\$80,712	\$109,219	\$576,125	\$125,700	\$38,500	\$0	\$930,257	10%	6%	3%	30%	5%	0%	\$502,339	
15	MC-4.6-B1		1A	BRYAN		MAC	MAC			230	50	\$0	\$0	\$0	\$0	\$0	\$0	\$0	10%	6%	3%	30%	5%	0%	\$0	
16	MC-4.7		1A	BRYAN	520	I2L	I2L					\$15,101	\$20,748	\$119,600	\$31,200	\$10,500	\$0	\$197,149	10%	6%	3%	30%	5%	0%	\$106,460	
16	MC-4.8	Higgs Road Improvements	1A	BRYAN	4970	I2L	I2L					\$144,329	\$198,303	\$1,143,100	\$298,200	\$87,500	\$0	\$1,871,432	10%	6%	3%	30%	5%	0%	\$1,010,573	
17	MA-2.1		1B	BRYAN	2220	MIA	MIA	1				\$136,160	\$198,320	\$783,167	\$133,200	\$42,000	\$350,000	\$1,642,847	10%	6%	3%	30%	5%	2%	\$919,994	
18	MA-2.1-B1		1B	BRYAN		MIA	MIA			780	65	\$0	\$0	\$0	\$0	\$0	\$0	\$0	10%	6%	3%	30%	5%	2%	\$0	
19	MA-2.2	Pleasant Hill Road Improvements	1B	BRYAN	900	I2L	I2L					\$26,136	\$35,910	\$207,000	\$54,000	\$17,500	\$0	\$340,546	10%	6%	3%	30%	5%	0%	\$183,895	
20	MC-3.1		2	BRYAN	5064	MAC	MAC	1				\$195,097	\$264,003	\$1,392,600	\$303,840	\$91,000	\$350,000	\$2,596,540	10%	6%	3%	30%	5%	0%	\$1,402,132	
21	MC-3.1-B1		2	BRYAN		MAC	MAC			366	50	\$0	\$0	\$0	\$0	\$0	\$0	\$0	10%	6%	3%	30%	5%	0%	\$0	
22	MC-3.1-B2		2	BRYAN		MAC	MAC			740	50	\$0	\$0	\$0	\$0	\$0	\$0	\$0	10%	6%	3%	30%	5%	0%	\$0	
23	MC-3.2	Silver Hill Road Improvements	2	BRYAN	5060	I2L	I2L					\$146,942	\$201,894	\$1,163,800	\$303,600	\$91,000	\$0	\$1,907,236	10%	6%	3%	30%	5%	0%	\$1,029,908	
24	MC-3.2-B1	Silver Hill Road Improvements	2	BRYAN		I2L	I2L			182	50	\$0	\$0	\$0	\$0	\$0	\$0	\$0	10%	6%	3%	30%	5%	0%	\$0	
25	MC-3.3	(Higgs)	2	BRYAN	6880	MAC	MAC					\$265,060	\$358,677	\$1,892,000	\$412,800	\$122,500	\$0	\$3,051,038	10%	6%	3%	30%	5%	0%	\$1,647,560	
26	MC-3.3-B1		2	BRYAN		MAC	MAC			620	50	\$0	\$0	\$0	\$0	\$0	\$0	\$0	10%	6%	3%	30%	5%	0%	\$0	
27	MA-3.1		2	BRYAN	4870	MIA	MIA					\$298,693	\$435,053	\$1,718,028	\$292,200	\$87,500	\$0	\$2,831,474	10%	6%	3%	30%	5%	2%	\$1,585,626	
28	MA-3.1-B1	(Shiloh)	2	BRYAN		MIA	MIA			930	65	\$0	\$0	\$0	\$0	\$0	\$0	\$0	10%	6%	3%	30%	5%	2%	\$0	
29	MA-3.2	(Shiloh)	2	BRYAN	6821	MIA	MIA					\$418,355	\$609,343	\$2,406,297	\$409,260	\$122,500	\$0	\$3,965,755	10%	6%	3%	30%	5%	2%	\$2,220,823	
30	MA-3.2-B1	(Shiloh)	2	BRYAN		MIA	MIA			437	65	\$0	\$0	\$0	\$0	\$0	\$0	\$0	10%	6%	3%	30%	5%	2%	\$0	
31	MA-3.2-B2	(Shiloh)	2	BRYAN		MIA	MIA			290	65	\$0	\$0	\$0	\$0	\$0	\$0	\$0	10%	6%	3%	30%	5%	2%	\$0	
32	MA-3.2-B3	(Shiloh)	2	BRYAN		MIA	MIA			382	65	\$0	\$0	\$0	\$0	\$0	\$0	\$0	10%	6%	3%	30%	5%	2%	\$0	
33	MA-3.2-B4	(Shiloh)	2	BRYAN		MIA	MIA			1020	65	\$0	\$0	\$0	\$0	\$0	\$0	\$0	10%	6%	3%	30%	5%	2%	\$0	
34	MC-1.11	Smetana Road Improvements	3	BRYAN	1980	I2L	I2L					\$57,499	\$79,002	\$455,400	\$118,800	\$35,000	\$0	\$745,701	10%	6%	3%	30%	5%	0%	\$402,679	
35	MC-1.21	Goodson Bend Road Improvements	3	BRYAN	6640	I2L	I2L					\$192,826	\$264,936	\$1,527,200	\$398,400	\$119,000	\$0	\$2,502,362	10%	6%	3%	30%	5%	0%	\$1,351,275	
Totals					74,541				8,711										\$ 36,028,055							

Opinion of Probable Roadway Cost

Key	Project Name	Description	Phase	Bridge Component Cost per SF	Bridge Allowances				15%		14%	Total Project Cost
				\$ 135	Mobilization	Traffic Control	Pavement Markings	Bridge Allowance Subtotal	Construction Cost Subtotal	Overall Contingency	Engineering Surveying & Testing	
1	MC-4.1		1A	\$0	10%	6%	3%	\$0	\$4,094,794	\$614,219	\$659,262	\$5,368,275
2	MC-4.1-B1		1A	\$3,037,500	10%	6%	3%	\$577,125	\$3,614,625	\$542,194	\$581,955	\$4,738,773
3	MC-4.2		1A	\$0	10%	6%	3%	\$0	\$309,137	\$46,371	\$49,771	\$405,278
4	MC-4.3		1A	\$0	10%	6%	3%	\$0	\$1,332,156	\$199,823	\$214,477	\$1,746,456
5	MC-4.3-B1		1A	\$2,632,500	10%	6%	3%	\$500,175	\$3,132,675	\$469,901	\$504,361	\$4,106,937
6	MC-4.4		1A	\$0	10%	6%	3%	\$0	\$3,073,791	\$461,069	\$494,880	\$4,029,740
7	MA-4.3		1A	\$0	10%	6%	3%	\$0	\$973,261	\$145,989	\$156,695	\$1,275,946
8	MA-4.3-B1		1A	\$1,667,250	10%	6%	3%	\$316,778	\$1,984,028	\$297,604	\$319,428	\$2,601,060
9	MA-4.1		1A	\$0	10%	6%	3%	\$0	\$4,021,668	\$603,250	\$647,489	\$5,272,407
10	MA-4.1-B1		1A	\$5,265,000	10%	6%	3%	\$1,000,350	\$6,265,350	\$939,803	\$1,008,721	\$8,213,874
11	MA-4.2		1A	\$0	10%	6%	3%	\$0	\$2,792,439	\$418,866	\$449,583	\$3,660,888
12	MC-4.5		1A	\$0	10%	6%	3%	\$0	\$4,209,000	\$631,350	\$677,649	\$5,517,999
13	MC-4.5-B1		1A	\$7,452,000	10%	6%	3%	\$1,415,880	\$8,867,880	\$1,330,182	\$1,427,729	\$11,625,791
14	MC-4.6		1A	\$0	10%	6%	3%	\$0	\$1,432,595	\$214,889	\$230,648	\$1,878,133
15	MC-4.6-B1		1A	\$1,552,500	10%	6%	3%	\$294,975	\$1,847,475	\$277,121	\$297,443	\$2,422,040
16	MC-4.7		1A	\$0	10%	6%	3%	\$0	\$303,609	\$45,541	\$48,881	\$398,032
16	MC-4.8	Higgs Road Improvements	1A	\$0	10%	6%	3%	\$0	\$2,882,005	\$432,301	\$464,003	\$3,778,309
17	MA-2.1		1B	\$0	10%	6%	3%	\$0	\$2,562,841	\$384,426	\$412,617	\$3,359,884
18	MA-2.1-B1		1B	\$6,844,500	10%	6%	3%	\$1,300,455	\$8,144,955	\$1,221,743	\$1,311,338	\$10,678,036
19	MA-2.2	Pleasant Hill Road Improvements	1B	\$0	10%	6%	3%	\$0	\$524,441	\$78,666	\$84,435	\$687,542
20	MC-3.1		2	\$0	10%	6%	3%	\$0	\$3,998,672	\$599,801	\$643,786	\$5,242,258
21	MC-3.1-B1		2	\$2,470,500	10%	6%	3%	\$469,395	\$2,939,895	\$440,984	\$473,323	\$3,854,202
22	MC-3.1-B2		2	\$4,995,000	10%	6%	3%	\$949,050	\$5,944,050	\$891,608	\$956,992	\$7,792,650
23	MC-3.2	Silver Hill Road Improvements	2	\$0	10%	6%	3%	\$0	\$2,937,144	\$440,572	\$472,880	\$3,850,596
24	MC-3.2-B1	Silver Hill Road Improvements	2	\$1,228,500	10%	6%	3%	\$233,415	\$1,461,915	\$219,287	\$235,368	\$1,916,571
25	MC-3.3	(Higgs)	2	\$0	10%	6%	3%	\$0	\$4,698,598	\$704,790	\$756,474	\$6,159,862
26	MC-3.3-B1		2	\$4,185,000	10%	6%	3%	\$795,150	\$4,980,150	\$747,023	\$801,804	\$6,528,977
27	MA-3.1		2	\$0	10%	6%	3%	\$0	\$4,417,100	\$662,565	\$711,153	\$5,790,818
28	MA-3.1-B1	(Shiloh)	2	\$8,160,750	10%	6%	3%	\$1,550,543	\$9,711,293	\$1,456,694	\$1,563,518	\$12,731,504
29	MA-3.2	(Shiloh)	2	\$0	10%	6%	3%	\$0	\$6,186,577	\$927,987	\$996,039	\$8,110,603
30	MA-3.2-B1	(Shiloh)	2	\$3,834,675	10%	6%	3%	\$728,588	\$4,563,263	\$684,489	\$734,685	\$5,982,438
31	MA-3.2-B2	(Shiloh)	2	\$2,544,750	10%	6%	3%	\$483,503	\$3,028,253	\$454,238	\$487,549	\$3,970,039
32	MA-3.2-B3	(Shiloh)	2	\$3,352,050	10%	6%	3%	\$636,890	\$3,988,940	\$598,341	\$642,219	\$5,229,500
33	MA-3.2-B4	(Shiloh)	2	\$8,950,500	10%	6%	3%	\$1,700,595	\$10,651,095	\$1,597,664	\$1,714,826	\$13,963,586
34	MC-1.11	Smetana Road Improvements	3	\$0	10%	6%	3%	\$0	\$1,148,380	\$172,257	\$184,889	\$1,505,526
35	MC-1.21	Goodson Bend Road Improvements	3	\$0	10%	6%	3%	\$0	\$3,853,637	\$578,046	\$620,436	\$5,052,118
Totals									\$136,877,685	\$20,531,653	\$22,037,307	\$179,446,645

Opinion of Probable Sanitary Sewer Cost

Key	Project Name	Description	Phase	City	Sanitary Sewer Quantities																WWTP Cap. Imp. (MGD)	Lift Station (MGD)				
					103	104	105	106	107	108	109	110	111	112	118	119	121	129	7200							
					8" (LF)	10" (LF)	12" (LF)	15" (LF)	18" (LF)	21" (LF)	24" (LF)	27" (LF)	30" (LF)	36" (LF)	4' MH (1/500 If dia <= 10")	5' MH (1/500 If dia. > 10")	6" FM (LF)	8" FM (LF)	12" FM (LF)	24" FM (LF)			ESMT (EA)			
1	SS1a-M1	TCWWTP to LS1	1a	BRYAN			3300								2890	0	13						3			
2	SS1a-LS1.1	LS 1 and FM (at Thompson Creek Trib 1)	1a	BRYAN																			5300		12	
3	SS1a-M2	LS1 to LS2	1a	BRYAN	800										2075	2	5						3			
4	SS1a-LS2.1	LS 2 and FM (at Lynette Circle)	1a	BRYAN																		1500	1		12	
5	SS1a-A1	LS2 to Leonard Road	1a	BRYAN	7000	4970			2020							24	5						25			
6	SS1a-A2	SH 47 to Linda Lane	1a	BRYAN	1400	1400	1322									6	3						8			
7	WWTP-U1	WWTP Upgrade	1a	BRYAN																				2		
8	SS1b-M3	LS2 to LS3	1b	BRYAN							1680				5750	0	15						3			
9	SS1b-LS3.1	LS 3 and FM (at Thompson Creek)	1b	BRYAN																		2630	1		8	
10	SS1b-B1	SH 47 to Silver Hill Road	1b	BRYAN	1630						2973					4	6						2			
11	SS1b-LS4.1	LS 4 and FM (at Silver Hill Road)	1b	BRYAN																		1380	1		6	
12	SS1b-C1	LS4 to SH21	1b	BRYAN	3430		6490						5725			7	25						25			
13	SS2-LS1.2	LS 1 Upgrades	2	BRYAN												0	0									4
14	SS2-LS2.2	LS 2 Upgrades	2	BRYAN												0	0									4
15	SS2-LS3.2	LS 3 Upgrades	2	BRYAN												0	0									4
16	SS2-LS4.2	LS 4 Upgrades	2	BRYAN												0	0									4
17	SS3-C2	Section 3 Main (Annexation)	2	BRYAN	2730		2090		3920							6	13						2			
18	SS3-C3	Section 4 (Annexation)	3	BRYAN	4390											9	0						1			
19	SS4-D	SH 47 to SH21	3	BRYAN										2890		0	6						14			
20	SS4-D1	Section 1 (SH 21 E SH 47)	3	BRYAN			2220									0	5						7			
21	SS4-D2	Section 1 (SH 21 W SH 47)	3	BRYAN												0	8						6			
22	SS2-LS1.3	LS 1 Upgrades	3	BRYAN												0	0									9
23	SS2-LS2.3	LS 2 Upgrades	3	BRYAN												0	0									8
24	SS2-LS3.3	LS 3 Upgrades	3	BRYAN												0	0									8
25	SS2-LS4.3	LS 4 Upgrades	3	BRYAN												0	0									8
26	SS5-LS5	SH 21 RELIS	3	BRYAN												0	0					5800	1			3.5
Total																										

Opinion of Probable Water Cost

				Water Costs																15%			14%	
				8" (LF)	10" (LF)	12" (LF)	14" (LF)	16" (LF)	18" (LF)	24" (LF)	27" (LF)	36" (LF)	42" (LF)	Elevated Storage Tank (MG)	Ground Storage Tank (MG)	Back-up Booster Pump (HP)	Pump Station (HP)	Fire Hydrant Assembly (\$4000 ea)	Water Fittings (\$3500/ton)	Construction Cost Subtotal	Overall Contingency	Engineering Surveying & Testing	Total Project Cost	
1	W1-D1	West Side Water Main - Phase 1 (2018)	1	\$0	\$0	\$0	\$0	\$0	\$1,458,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$220,000	\$56,735	\$1,735,635	\$260,345	\$279,437	\$2,275,417
2	W2-D1	West Side Water Main - Phase 2 (2019)	2	\$0	\$0	\$0	\$0	\$0	\$2,143,350	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$320,000	\$83,353	\$2,546,703	\$382,005	\$410,019	\$3,338,727	
3	W3-D1	Chick Lane EST	3	\$0	\$0	\$0	\$0	\$0	\$13,500	\$0	\$0	\$0	\$0	\$4,000,000	\$0	\$0	\$0	\$4,000	\$525	\$4,018,025	\$602,704	\$646,902	\$5,267,631	
4	W4-D2	SH 21	3	\$0	\$0	\$0	\$0	\$0	\$1,224,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$184,000	\$47,600	\$1,455,600	\$218,340	\$234,352	\$1,908,292	
Total																		\$9,755,963	\$1,463,394	\$1,570,710	\$12,790,067			

Fiscal Impact Analysis Report City of Bryan, Texas

Submitted to:
City of Bryan, Texas

September 19, 2018



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September, 2018

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I. EXECUTIVE SUMMARY

TischlerBise is under contract with the City of Bryan to conduct a Fiscal Impact Analysis of potential annexation scenarios. This is a collective effort with several other partners including Kendig Keast Collaborative. The Texas A&M University System has recently begun the construction and opening of their RELLIS campus which sits just beyond the City of Bryan’s northwest boundary in Brazos County. The development of RELLIS into a full campus, that would include Blinn College, public-private research and development, and student/faculty housing, has the potential to spur growth into adjacent areas. Annexing the areas around the RELLIS campus may be advantageous for the City of Bryan, however, there would be operating and capital expenditures accruing to the City as a result. This analysis seeks to identify and evaluate those impacts.

A fiscal impact evaluation analyzes revenue generation and operating and capital costs to a jurisdiction associated with the provision of public services and facilities to serve development—residential, commercial, industrial, or other. A fiscal impact analysis is different from an economic impact analysis in that a fiscal impact analysis projects the cash flow to the public sector—in terms of additional taxes and other revenues in relation to costs to provide services—while an economic impact analysis projects the cash flow to the private sector, which is measured in income, jobs, output, indirect impacts, etc. A fiscal impact analysis should reflect market realities as well as existing capacities in municipal services and infrastructure.

In general, a fiscal impact analysis determines whether revenues generated by development are sufficient to cover the resulting costs from that development for service and facility demands under current levels of service. It is intended to be used to help guide policy decisions regarding levels of service and revenue enhancements. It should not be viewed as a budget-forecasting document or a definitive roadmap depicting a future course of action. A fiscal analysis essentially looks at revenues and expenditures separately. It does not project expenditures based on revenues available—unlike the annual budget process where a budget is balanced with the resources available.

Annexation Scenarios Evaluated

Three growth scenarios were developed for this analysis. Each scenario has development allocated to four subarea, or fiscal analysis zones (FAZs). The phasing of the FAZs developing is consistent between the three scenarios with FAZ 2 and 4 developing between Years 1-5, FAZ 3 developing between Years 5-10, and FAZ 1 developing between Years 10-15. To allow the analysis to have a specific focus on the development adjacent to the RELLIS campus (FAZ 1), FAZ 2, 3, 4 are consistent between the scenarios. The following details the differences in FAZ 1 development:

- Scenario 1: Residential – FAZ 1 has a high level of residential development.
- Scenario 2: Employment – A high level of nonresidential development occurs in FAZ 1, specifically industrial development.
- Scenario 3: Hospitality – The focus of development in FAZ 1 is in hotel development.

Furthermore, in the annexation area some development already exists. As this will be new to the City if annexed, current development in the FAZs are included in the analysis. In Figure 1 the total development for each scenario is listed.

Figure 1. Growth Projections by Scenario

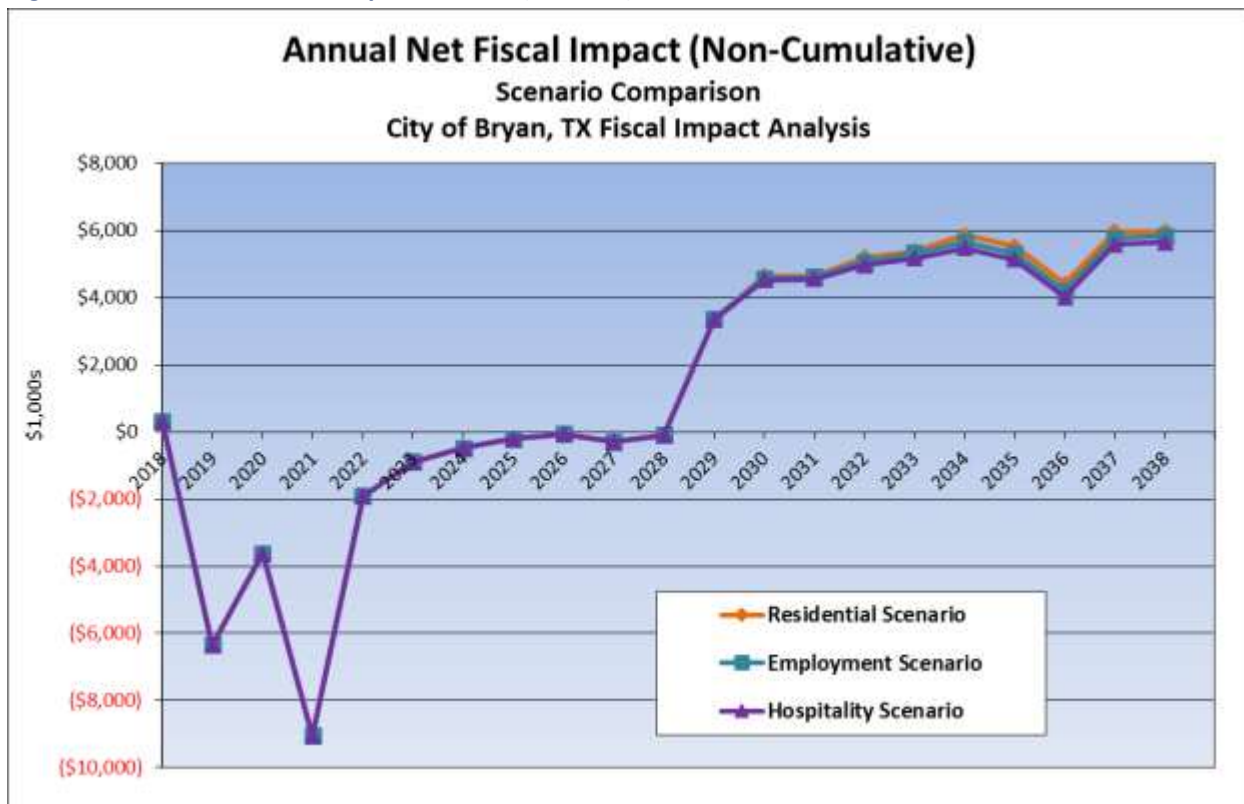
Residential Scenario		Employment Scenario		Hospitality Scenario	
Development Type	Total (Years 1-20)	Development Type	Total (Years 1-20)	Development Type	Total (Years 1-20)
Residential		Residential		Residential	
Single Family Units	2,047	Single Family Units	2,047	Single Family Units	2,047
Multifamily Unit	2,400	Multifamily Unit	1,600	Multifamily Unit	1,600
Total Housing Units	4,447	Total Housing Units	3,647	Total Housing Units	3,647
Nonresidential		Nonresidential		Nonresidential	
Office (sq. ft.)	83,000	Office (sq. ft.)	60,000	Office (sq. ft.)	75,000
Retail (sq. ft.)	850,700	Retail (sq. ft.)	853,300	Retail (sq. ft.)	842,700
Industrial (sq. ft.)	977,650	Industrial (sq. ft.)	1,182,450	Industrial (sq. ft.)	953,650
Total Sq. Ft.	1,911,350	Total Sq. Ft.	2,095,750	Total Sq. Ft.	1,871,350
Hotel (bedrooms)	80	Hotel (bedrooms)	0	Hotel (bedrooms)	240

Summary of Fiscal Impact Results

The fiscal impacts of growth in the annexation area under each scenario are shown below in the following figures. Net fiscal results are **revenues minus costs in each year**, reflecting operating and capital costs for all services modeled. Data points above the \$0 line represent annual surpluses; points below the \$0 line represent annual deficits. Surpluses in any one year are not carried forward to the next year.

Overall, the scenarios have very similar results. In the first ten years, there is insufficient revenues generated by growth to cover resulting operating and capital expenditures. The annual deficits in the first ten years is a result of the improvements to existing roads, new road construction, and new fire station construction. However, from Year 11, the revenues offset both operating and capital costs for the remaining projection period, generating an annual positive fiscal impact.

Figure 3: Annual Net Fiscal Impact Results (x\$1,000)



The cumulative totals shown below reflect total revenues and expenditures over the 20-year time frame. As shown, there is a cumulative positive fiscal impact in all three scenarios. Although similar, Scenario 1 has the highest fiscal impact. Scenario 3 has the least impactful results; however, the difference is only about an average of \$130,000 per year compared to Scenario 1.

Figure 4. Cumulative Fiscal Impact Results

20-Year Total Net Fiscal Impact - Scenario Comparisons City of Bryan Annexation Fiscal Impact Model (\$1,000)			
Category	SCENARIO		
	Residential Scenario	Employment Scenario	Hospitality Scenario
<i>Operating</i>			
Operating Revenues	\$199,839	\$194,869	\$193,350
Operating Expenditures	\$108,382	\$105,330	\$105,153
OPERATING NET FISCAL IMPACT	\$91,457	\$89,539	\$88,197
<i>Capital</i>			
Capital Revenues	\$0	\$0	\$0
Capital Expenditures	\$63,213	\$62,581	\$62,510
CAPITAL NET FISCAL IMPACT	(\$63,213)	(\$62,581)	(\$62,510)
GRAND TOTAL NET FISCAL IMPACT	\$28,244	\$26,958	\$25,687
AVERAGE ANNUAL FISCAL IMPACT	\$1,412	\$1,348	\$1,284

For further detail, operating and capital impacts are separated in the following three figures, given the impact of capital expenditures on the fiscal results. **Annually, there is sufficient revenues generated in each scenario to cover operating costs.** Capital deficits are often easier to “solve for” than operating deficits. For instance, it is often easier to identify and implement specific revenue sources that can be earmarked for capital purposes (e.g., impact fees) as well as designate a portion of an existing revenue source (e.g., property taxes) for a specific capital purpose. **The scenarios have similar results; therefore, the following figures are similar.**

Figure 5. Scenario 1: Residential Annual Operating and Capital Expenditures Compared to Revenues

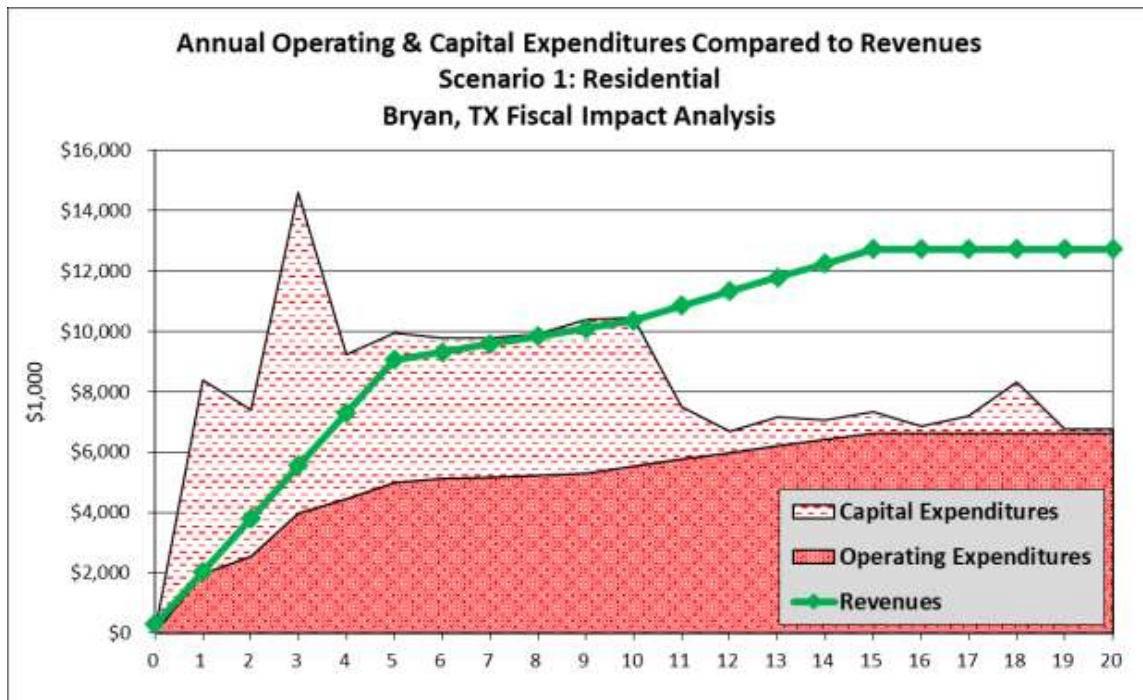


Figure 6. Scenario 2: Employment Annual Operating and Capital Expenditures Compared to Revenues

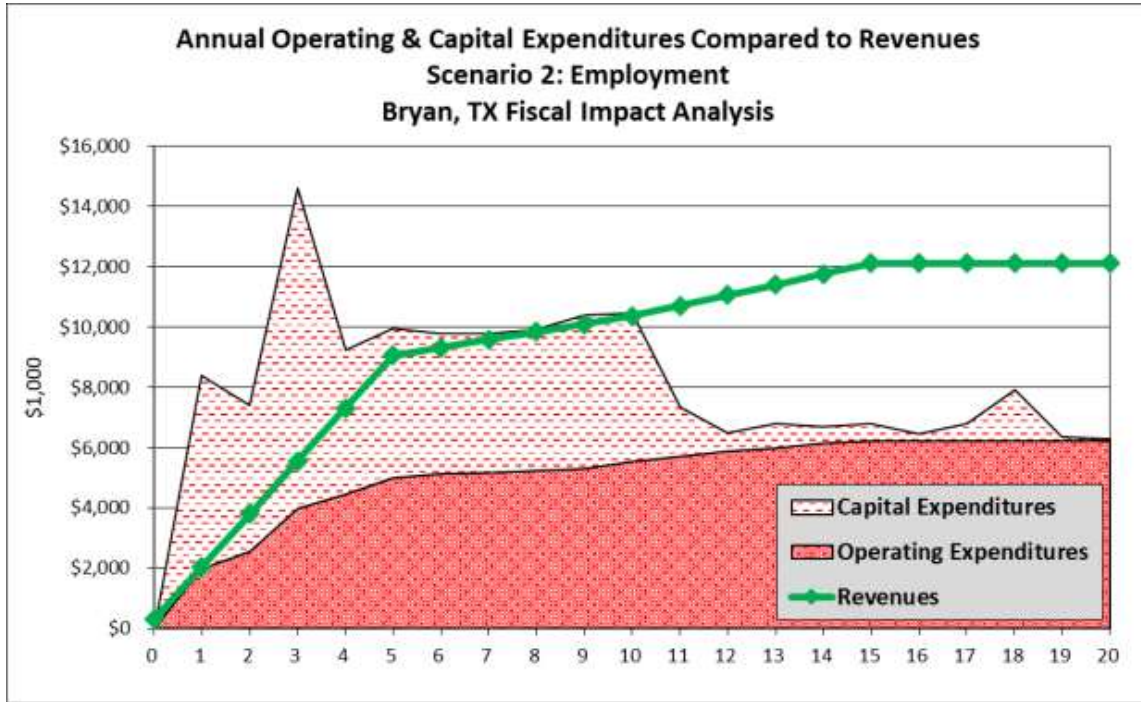
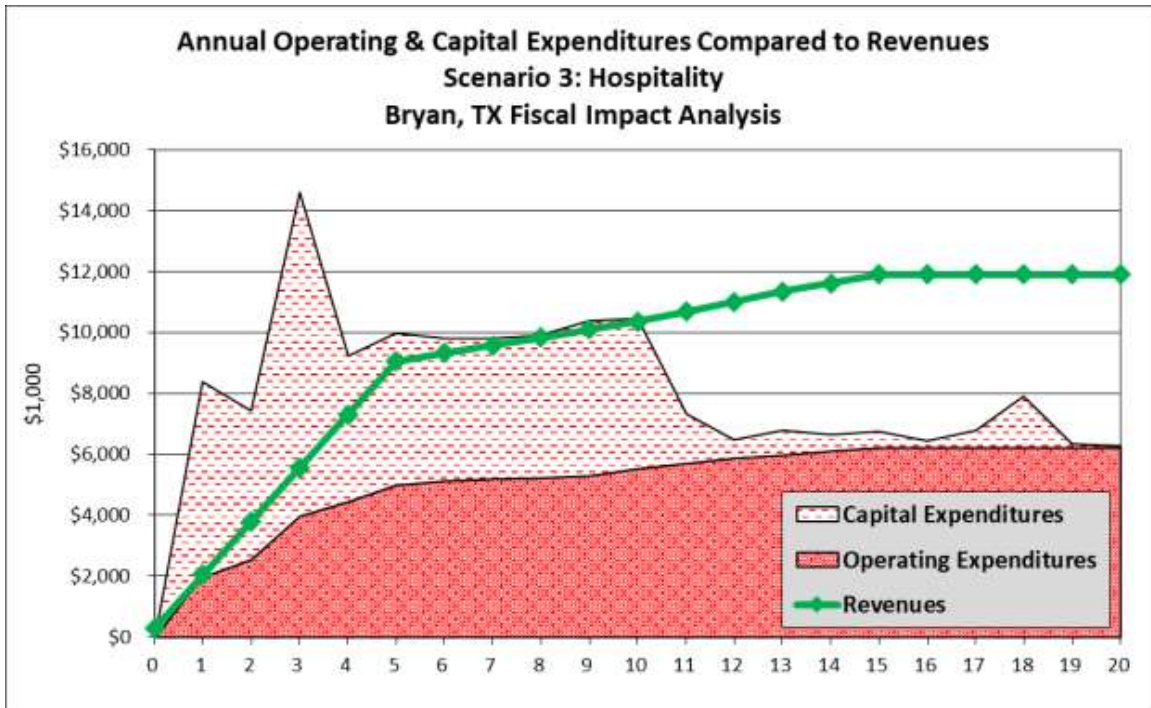
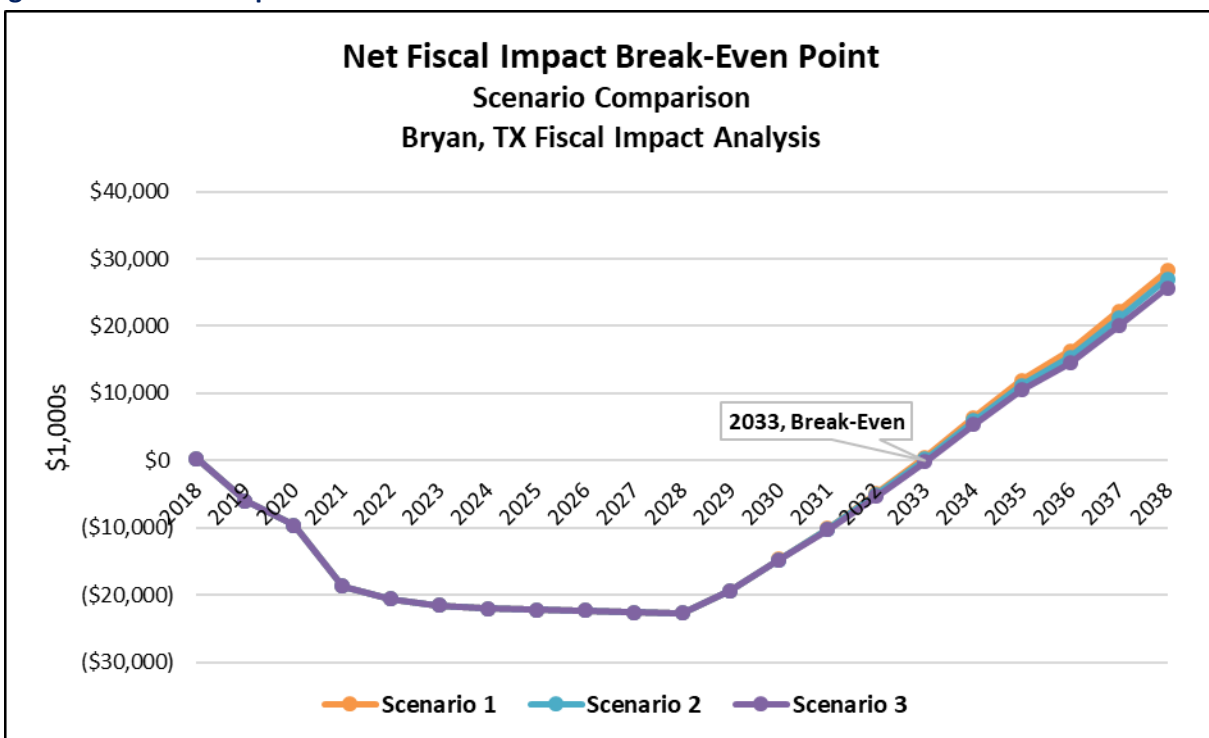


Figure 7. Scenario 3: Hospitality Annual Operating and Capital Expenditures Compared to Revenues



The break-even point is calculated by reducing the cumulative revenue by the cumulative expenditures (including both operating and capital costs). A net fiscal impact over the \$0 line represents a break-even point. Shown in the previous figures, in each year, the revenues are able to cover the operating costs generated by the development. As a result, Figure 8 illustrates the time in which the positive net impact from City operations can cover the capital costs triggered in the scenarios. **Each scenario has a break-even point of 2033, or Year 15.** By 2033, the initial large capital costs (i.e. roads and fire stations) are covered by revenues from the developments. Furthermore, each scenario continues to experience an increasing positive fiscal impact through the remaining years in the analysis.

Figure 8. Net Fiscal Impact Break-Even Point



The final figure in the Executive Summary is a comparison of the fiscal analysis zones (FAZs) in the scenarios. When comparing FAZs, FAZ 4 is the only zone in which there is a positive impact from development. The positive fiscal results of the entire annexation area are driven by the high level of positive impact from FAZ 4. It is the most developed in the analysis, generating significant revenue from sales and property tax. The impact is able to cover all operating and capital expenditures triggered in the Study Area. The offsetting effect of FAZ 4 allows for the other zones to develop at a slower pace without burdening the City.

Figure 9. Fiscal Impacts by Fiscal Analysis Zone

20-Year Net Fiscal Impact - Fiscal Analysis Zone Comparison City of Bryan Annexation Fiscal Impact Model (\$1,000)			
Fiscal Analysis Zone	SCENARIO		
	Residential Scenario	Employment Scenario	Hospitality Scenario
FAZ 1	(\$49,082)	(\$49,654)	(\$51,545)
FAZ 2	(\$6,492)	(\$6,492)	(\$6,492)
FAZ 3	(\$11,820)	(\$11,820)	(\$11,820)
FAZ 4	\$96,365	\$96,365	\$96,365

Summary of Results

- The net positive impacts are driven primarily by sales and property tax revenue from development. This allows for the City of Bryan to benefit from both residential and nonresidential development.
- The similar result for each scenario is an outcome of the relatively similar development scenarios. Fiscal analysis zones (FAZs) 2, 3, and 4 were held constant in the three scenarios to allow for differences in FAZ 1 to be compared.
- When examining just FAZ 1, Scenario 1 (Residential Scenario) has the best fiscal results for the City. This stems from the property value assumed for housing units in the study. An analysis of property values for recently built homes (2010-2017) in the western side of the City indicated that an average single family home is valued at \$305,000. This value is used for new single family homes in the analysis. Although, residential developments generally have higher expenditures than nonresidential developments (which is the case in this study), the higher level of property tax from new homes is able to offset a larger portion of expenditures than FAZ 1 in the other two scenarios, which are centered around nonresidential development.
- It should be noted that, on average, the resulting annual net positive impact from the scenarios reflects just over 1 percent of the City’s total current budget.

- Over time, the revenues are able to cover the increase in operating and capital expenditures in each scenario. For operating expenses, the Fire and Police Department generate the highest costs for each scenario. A new fire station requires a large staff to operate the station's apparatuses. Also, the new development is expected to increase police calls for service, so to continue serving at the current level of service new hires are necessary.
- The majority of capital expenditures are for road projects. In the annexation area there are County roads that will need to be updated to City standards and new road construction is necessary to facilitate growth. Costs included for new roads were limited to collectors and arterials and not freeways or local streets. It is assumed that the full cost of new roads is not borne by the City. Developers initiate and complete various road projects not completed by the City, and the City participates in the cost of some developer-built road projects.
- A new fire station is projected in Year 3. Although there is no new development in FAZ 1 until midway through the projection period, a new fire station is necessary to serve the current population of that area. If a fire station is not constructed, it is expected that the Fire Department's ISO rating would suffer and drop from the top ranking of 1 at the next evaluation of the City of Bryan. The newly annexed area would be rated an ISO 10 without a new fire station. A rating of 10 equates to no fire protection. The new station triggers an ongoing annual operating cost to staff a new fire engine, ambulance, and ladder truck.
- Additionally, there is an immediate need in Year 1 for a temporary facility to house the fire staff and apparatuses until the permanent station is constructed. There are several housing options in FAZ 1, including an old facility on the Texas A&M RELLIS Campus. However, any option requires expansion and modernization. The temporary facility will house a fire engine and ambulance, delaying the purchase and staff for the ladder truck until the new fire station is constructed.
- Furthermore, the capital costs have been assumed to be entirely paid for in the year that it is constructed. However, in reality, the City of Bryan may choose to debt finance the projects. Assuming projects are funded with cash allows the model to capture the entire impact of the development compared to modelling the projects being debt financed. For example, if a project is triggered for construction in Year 12 and it is debt financed for 20 years, only 8 of those years will be captured in the 20-year analysis, resulting in less than half of the project's true cost to be reflected in the analysis. Allowing the analysis to project costs without budget constraints, the fiscal impact analysis is able to identify growth's total impact.
- At a fiscal zone level, all FAZs, but FAZ 1, are able to cover operating expenditures with revenues. FAZ 1 has the second highest revenue, however, the operating expenditures related to the temporary and new fire station results in a negative operating fiscal impact. When capital

expenditures are included into the impact, only FAZ 4 remains positive. However, its significant positive fiscal impact is able to cover the negative impacts generated elsewhere in the Study Area.

- Also, a fiscal impact analysis is not the same as municipal budgeting. Regardless of the findings of the fiscal impact analysis, the City will continue to develop a service plan, budget for those services, and identify necessary capital improvements based on the revenues available.
- Enterprise Funds (i.e. water, sewer, electricity) are not included in the analysis. The operating and capital expenses generated from the annexation areas are assumed to be covered by fee revenue from users.
- Lastly, fiscal issues are just one area for a locality to consider when making land use decisions or setting policy. However, there are policy responses specific to fiscal issues, for example, updating “user-pay” tools to better connect who pays and benefits from improvements.

Conclusion

From the fiscal impact model results, it can be concluded that the development in the scenarios will cover the City of Bryan’s annual operating costs. The “front-loading” methodology of road and fire capital costs result in a negative fiscal impact for the first ten years of the analysis. However, starting in Year 11 there is an annual positive fiscal impact and in Year 15 the City breaks-even in each scenario.

Sales and property tax revenue are the main drivers for revenue in the analysis. Public Safety generates the highest operating costs, while the majority of the capital costs are for improvements to existing roadways that would be annexed by the City and for the construction of new roads. Additionally, a new fire station is required in FAZ 1 to serve the current population, the RELLIS campus, and the anticipated future growth. The new station contributes to the increase in Public Safety operating expenditures as well. Also, there is an immediate need for a temporary fire station until the new station can be constructed. The temporary station generates both capital costs and operating cost for the fire engine and ambulance.

Furthermore, if the City chooses to annex the four fiscal analysis zones in the study, policies should be considered that would help mitigate the expected high level of capital costs. The analysis modeled the capital costs in the year of construction, while, debt financing would allow for expenses to be spread over a long period of time. Additionally, an assumption in the analysis is that developers will cover 50 percent of the capital costs for roads by constructing them on their own as part of development projects (for dedication to the City) or by constructing roads with financial participation by the City.

II. MAJOR ASSUMPTIONS AND METHODOLOGIES

OVERVIEW OF METHODOLOGY

The Fiscal Impact Analysis for the City of Bryan incorporates the case study-marginal cost approach wherever possible. The case study-marginal methodology is the most realistic method for evaluating fiscal impacts. Unique demographic or other characteristics of new development are accounted for, as well as the extent to which a particular infrastructure or service operates under, over, or close to capacity. Available facility capacity determines the need for additional capital facilities and associated operating costs.

Many of the costs that are affected by general growth, regardless of location, are projected using a marginal/average cost hybrid methodology that attempts to determine capacity and thresholds for staffing but projects non-salary operating costs using an average cost approach. The levels of service and cost assumptions are based on TischlerBise's on-site interviews and follow-up discussions with City of Bryan staff, and a detailed analysis of *City of Bryan Fiscal Year 2018 Adopted Budget and Capital Improvements Program*; *City of Bryan's Comprehensive Plan*; *City of Bryan Departmental annual reports* and other relevant financial and planning documents. Additionally, our national experience conducting over 800 fiscal impact analyses was beneficial.

The assumptions outlined in this report are utilized along with the growth projections to calculate the potential impacts of annexation to the City over the 20-year projection period. Only the impacts of the study area, the four FAZs, are examined in this analysis. Other areas of the City are not included in the fiscal impact model. Calculations are performed using a customized fiscal impact model designed specifically by TischlerBise for this assignment.

FINANCIAL ASSUMPTIONS

Fiscal Year 2018 Budget

The Fiscal Year 2018 Budget (July 1, 2017 – June 30, 2018) is used to represent a “snapshot” of the City’s current costs and levels of service. In summary, the “snapshot” approach does not attempt to speculate about how services or costs will change over time or whether current levels of service are sufficient or insufficient. Instead, it evaluates the cost implications to the City as it conducts business under the FY2018 budget.

Variable versus Fixed Costs and Revenues

For this analysis, costs and revenues that are directly attributable to new development are included in the fiscal analysis of growth and reported in the three scenarios. In all cases, some costs and revenues are not impacted by demographic changes and are assumed to be “fixed” in this analysis. To determine fixed variables, TischlerBise interviewed City staff and reviewed the FY2018 budget and available supporting documentation. Examples of budget items modeled as “fixed”, or non-growth related, include:

- Salaries and benefits for certain support personnel (varies by department)
- One-time costs for services unrelated to growth and development
- Revenue sources that are not growth-related

Detail and discussion are provided in Chapter V.

Level of Service

The cost projections are based on a “snapshot approach” in which it is assumed the current level of service, as funded in the City budget and as provided in current capital facilities, will continue through the 20-year analysis period. The 2018 existing demand base data was used to calculate unit costs and service level thresholds. Examples of demand base data include population, dwelling units, employment by industry, vehicle trips, etc. **The “snapshot” approach does not attempt to speculate about how levels of service or cost factors will change over time.** Instead, it evaluates the implications of development in the annexation areas to the City as conducted under the FY2018 budget and informed by discussions with staff.

Inflation Rate

The rate of inflation is assumed to be zero throughout the projection period; cost and revenue projections are in constant 2018 dollars. This assumption is in accord with budget data and avoids the

difficulty of speculating on inflation rates and their effect on specific cost categories. It also avoids the problem of interpreting results expressed in inflated dollars over an extended projection period. In general, including inflation is complicated and unpredictable. This is particularly the case given that some costs, such as salaries, increase at different rates than other operating and capital costs such as contractual and building construction costs. Using constant dollars avoids these issues.

Non-Fiscal Evaluations

It should be noted that while a Fiscal Impact Analysis is an important consideration in planning decisions, it is only one of several issues that should be considered. Environmental and social issues, for example, should also be considered when making planning and policy decisions. The above notwithstanding, this analysis will enable interested parties to understand the fiscal implications of annexing adjacent areas to the RELLIS campus.

GROWTH SCENARIO PROJECTION

Three growth scenarios were developed for this analysis. Each scenario has four fiscal analysis zones (FAZs). It is assumed that development will occur in areas closest to the center of the City and move outwards, as such, the phasing of the FAZs developing is consistent between the scenarios: FAZ 2 and 4 develop between Years 1-5, FAZ 3 develops between Years 5-10, and FAZ 1 develops between Years 10-15. To allow the analysis to have a specific focus on the development adjacent to the RELLIS campus (FAZ 1), FAZ 2, 3, 4 are consistent between the scenarios. The development in FAZ 1 varies between residential, nonresidential, and hotel (see Figure 10). More detailed growth projections can be found in the Appendix.

Figure 10. Growth Projections by Scenario

Residential Scenario

FAZ 1 (Years 10-15)		FAZ 2 (Years 1-5)		FAZ 3 (Years 5-10)		FAZ 4 (Years 1-5)		Total (Years 1-20)	
Single Family Units	202	Single Family Units	86	Single Family Units	195	Single Family Units	1,564	Single Family Units	2,047
Multifamily Unit	1,600	Multifamily Unit	0	Multifamily Unit	0	Multifamily Unit	800	Multifamily Unit	2,400
Office (sq. ft.)	23,000	Industrial (sq. ft.)	279,150	Retail (sq. ft.)	160,000	Office (sq. ft.)	60,000	Office (sq. ft.)	83,000
Retail (sq. ft.)	30,700					Retail (sq. ft.)	660,000	Retail (sq. ft.)	850,700
Industrial (sq. ft.)	218,500					Industrial (sq. ft.)	480,000	Industrial (sq. ft.)	977,650
Hotel (bedrooms)	80							Hotel (bedrooms)	80

Employment Scenario

FAZ 1 (Years 10-15)		FAZ 2 (Years 1-5)		FAZ 3 (Years 5-10)		FAZ 4 (Years 1-5)		Total (Years 1-20)	
Single Family Units	202	Single Family Units	86	Single Family Units	195	Single Family Units	1,564	Single Family Units	2,047
Multifamily Unit	800	Multifamily Unit	0	Multifamily Unit	0	Multifamily Unit	800	Multifamily Unit	1,600
Industrial (sq. ft.)	423,300	Industrial (sq. ft.)	279,150	Retail (sq. ft.)	160,000	Office (sq. ft.)	60,000	Office (sq. ft.)	60,000
Retail (sq. ft.)	33,300					Retail (sq. ft.)	660,000	Retail (sq. ft.)	853,300
						Industrial (sq. ft.)	480,000	Industrial (sq. ft.)	1,182,450
								Hotel (bedrooms)	0

Hospitality Scenario

FAZ 1 (Years 10-15)		FAZ 2 (Years 1-5)		FAZ 3 (Years 5-10)		FAZ 4 (Years 1-5)		Total (Years 1-20)	
Single Family Units	202	Single Family Units	86	Single Family Units	195	Single Family Units	1,564	Single Family Units	2,047
Multifamily Unit	800	Multifamily Unit	0	Multifamily Unit	0	Multifamily Unit	800	Multifamily Unit	1,600
Office (sq. ft.)	15,000	Industrial (sq. ft.)	279,150	Retail (sq. ft.)	160,000	Office (sq. ft.)	60,000	Office (sq. ft.)	75,000
Retail (sq. ft.)	22,700					Retail (sq. ft.)	660,000	Retail (sq. ft.)	842,700
Industrial (sq. ft.)	194,500					Industrial (sq. ft.)	480,000	Industrial (sq. ft.)	953,650
Hotel (bedrooms)	240							Hotel (bedrooms)	240

Additionally, if there was annexation, there is existing development in several of the FAZs that would be within the City of Bryan. Since this development would be new to the City of Bryan, it has been included in the model and listed in Figure 11.

Figure 11. Existing Development in Fiscal Analysis Zones

Subarea	Single Family (units)	Retail (Sq. Ft.)	Industrial (Sq. Ft.)
FAZ 1	22	7,700	154,500
FAZ 2	86	-	199,150
FAZ 3	15	-	-
FAZ 4	124	-	-

As mentioned, FAZ 2, 3, and 4 are assumed to be developed the same in the scenarios. This allows for a specific examination of different scenarios for FAZ 1, the subarea just across Highway 47 and 21 from RELLIS campus. The following details FAZ 1 in each scenario:

- Scenario 1: Residential** – This scenario examines the impacts of housing developing to serve the RELLIS campus. Student/faculty housing is included in the *RELLIS Campus Master Plan*, however, in this scenario the university housing does not meet certain housing demands. Students may want to live off campus and faculty may desire more amenities or a single family residence. Additionally, as a result of Texas A&M moving some departments from the College Station campus to RELLIS, faculty may choose to relocate to shorten their commute. As a result, there are 202 single family homes and 1,800 multifamily homes assumed in FAZ 1. Furthermore, some retail is assumed to developed to serve the new population and a hotel is developed.
- Scenario 2: Employment** – In this scenario, it is assumed that there is a spillover effect from the research and development happening at the RELLIS campus. The campus is being marketed as “becoming one of the nation’s leading ‘smart’ collaborative innovation and research clusters.” This economic activity certainly has the capacity to require development from off the campus especially in the industrial fields. This has led to FAZ 1 in Scenario 2 observing considerable nonresidential development, specifically industrial. The current nonresidential zoning in the FAZ is predominately for industrial, however, development involving high-end technologies is imagined compared to traditional industrial growth.
- Scenario 3: Hospitality** – FAZ 1 in Scenario 3 observes the most hotel bedrooms. Accommodation to some degree is expected at the RELLIS campus, however, for demand and visitor preference, in this scenario three hotels are assumed to be constructed. The hotels are anticipated to be similar to the recently constructed Hilton Garden Inn and Holiday Inn Express in Bryan. Some retail is assumed to serve the hotel and campus development as well.

III. FISCAL IMPACT ANALYSIS RESULTS

The fiscal impacts of the annexation areas are analyzed and discussed in this chapter. Fiscal impact results are presented in several ways:

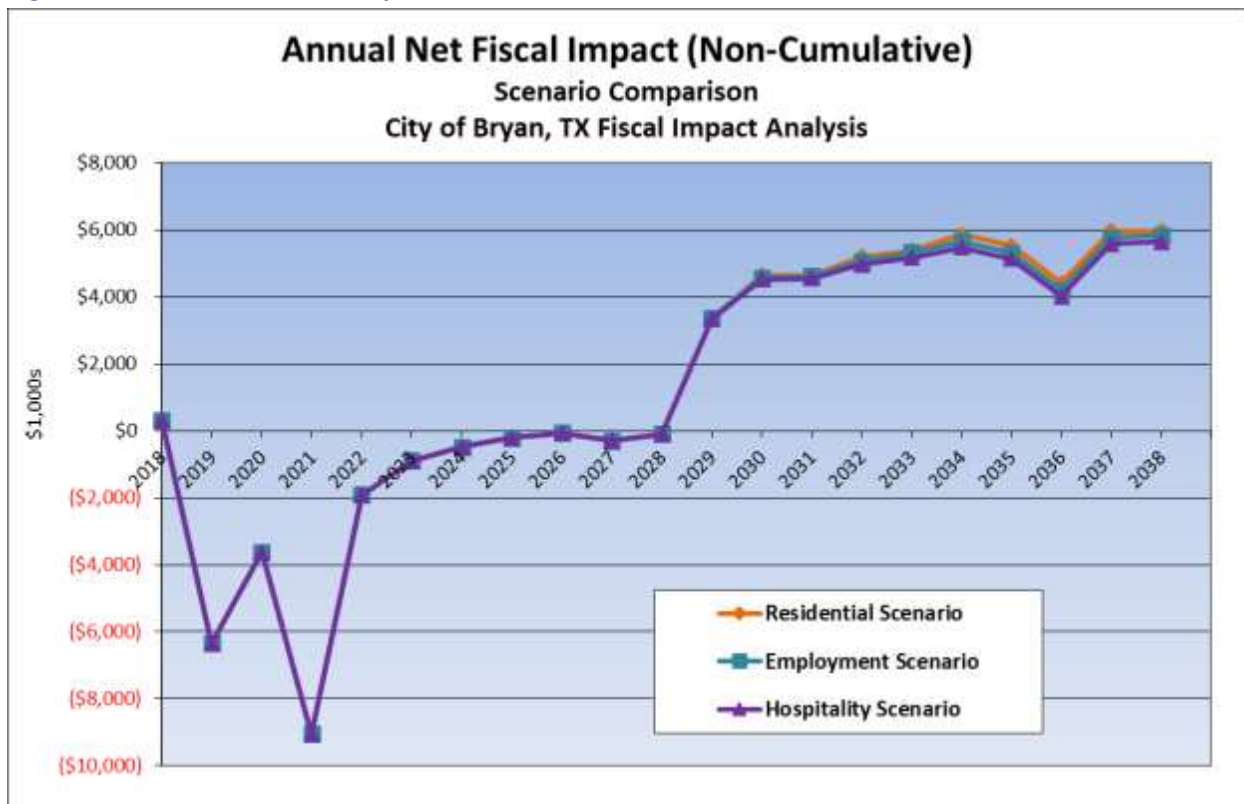
- Annual net fiscal results are shown first that include all revenues and costs in the funds included in the analysis in each year—**operating and capital impacts from growth are combined**.
 - Annual net fiscal results are then shown for operating and capital separately compared to revenues.
- **Cumulative** net fiscal results are shown next.
 - Cumulative net results convey the projected grand total revenues minus grand total expenditures over the 20-year period to determine the overall net surplus or deficit.
- **Average annual** results are shown.
 - The average annual net result conveys an average annual fiscal impact over different time periods during the 20-year period.
- Lastly, **break-even point** results are illustrated to examine in what year the revenues from the scenarios are able to cover the operating and capital expenditures.

Annual Net Fiscal Impact Results

The chart below shows the annual net fiscal results to the City over each year of the 20-year development period. By showing the annual results, the magnitude, rate of change, and timeline of deficits and revenues can be observed over time. The “bumpy” nature of the annual results during particular years represents an initial capital impact being “front-loaded” and/or major operating costs being incurred (further explained in the Capital Expenditure Methodologies section).

Net fiscal results shown below are **revenues minus costs in each year**, including operating and capital costs for all services modeled. Data points above the \$0 line represent annual surpluses; points below the \$0 line represent annual deficits. Surpluses in any one year are not carried forward to the next year. The scale for the chart is in thousands (\$1,000s). Shown in Figure 12, the annual fiscal impacts of each scenario are quite similar to each other.

Figure 12: Annual Net Fiscal Impact Results (x\$1,000)



Overall, in the first ten years, there is insufficient revenues generated by growth to cover related operating and capital expenditures. The annual deficits in the first ten years is a result of the improvements to existing roads, new road construction, and the temporary and new fire station construction. However, from Year 11, the revenues offset both operating and capital costs for the remaining projection period and there is positive fiscal impact.

Combining operating and capital results does not reveal the whole picture. Looking at operating and capital results separately reveals that surpluses are generated for operating purposes with deficits generated for capital needs.

The following figures illustrate the dramatic drop in capital expenditures from Year 10 to Year 11. This is the result of the road capital projects nearing completion. There are still road projects up until Year 15, but the majority of the road construction happens before Year 11. Additionally, the capital cost spikes in Year 1 and 3 is the construction of the temporary and then the new fire station. The resulting staffing costs for the new station can be seen in the upward tick in operating expenditures. Other capital costs include new police patrol vehicles, facility improvements for General Government, and Public Works vehicles and heavy equipment.

The scenarios have very similar fiscal impacts, resulting in the following figures to be very similar as well.

Figure 13. Scenario 1 Annual Operating and Capital Expenditures Compared to Revenues

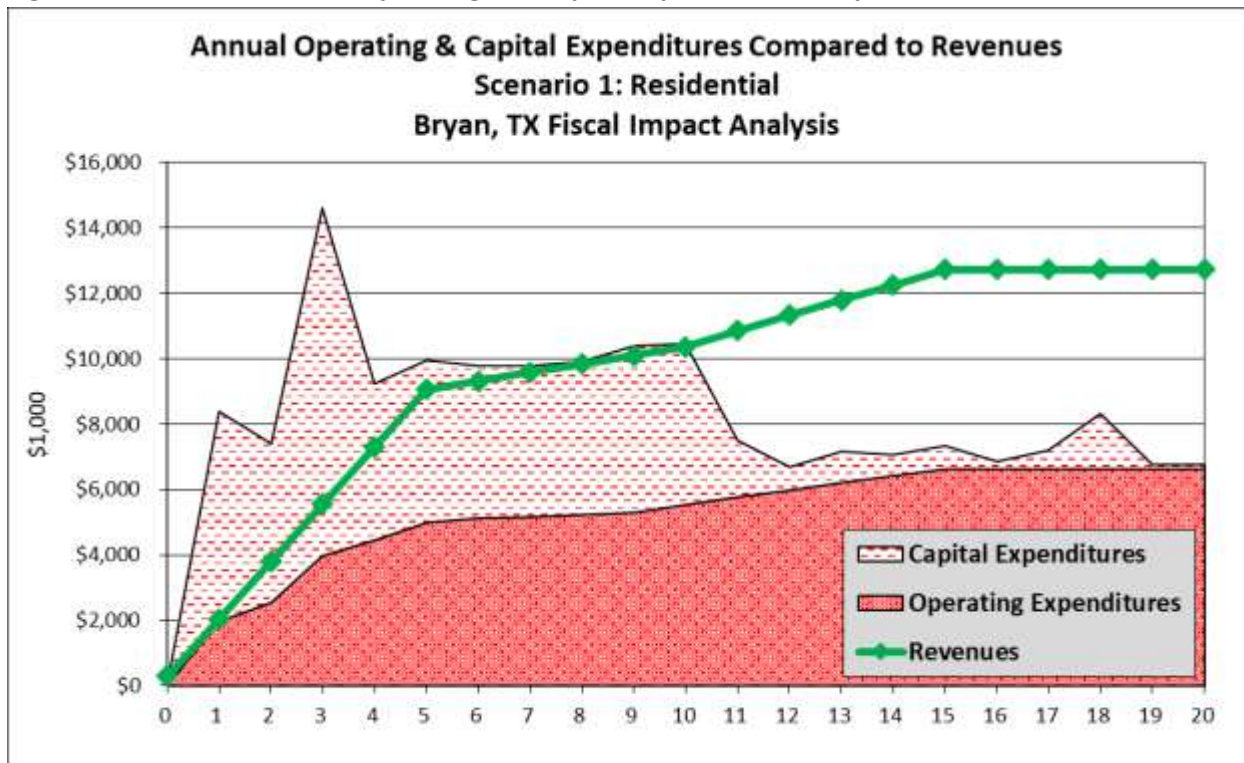


Figure 14. Scenario 2 Annual Operating and Capital Expenditures Compared to Revenues

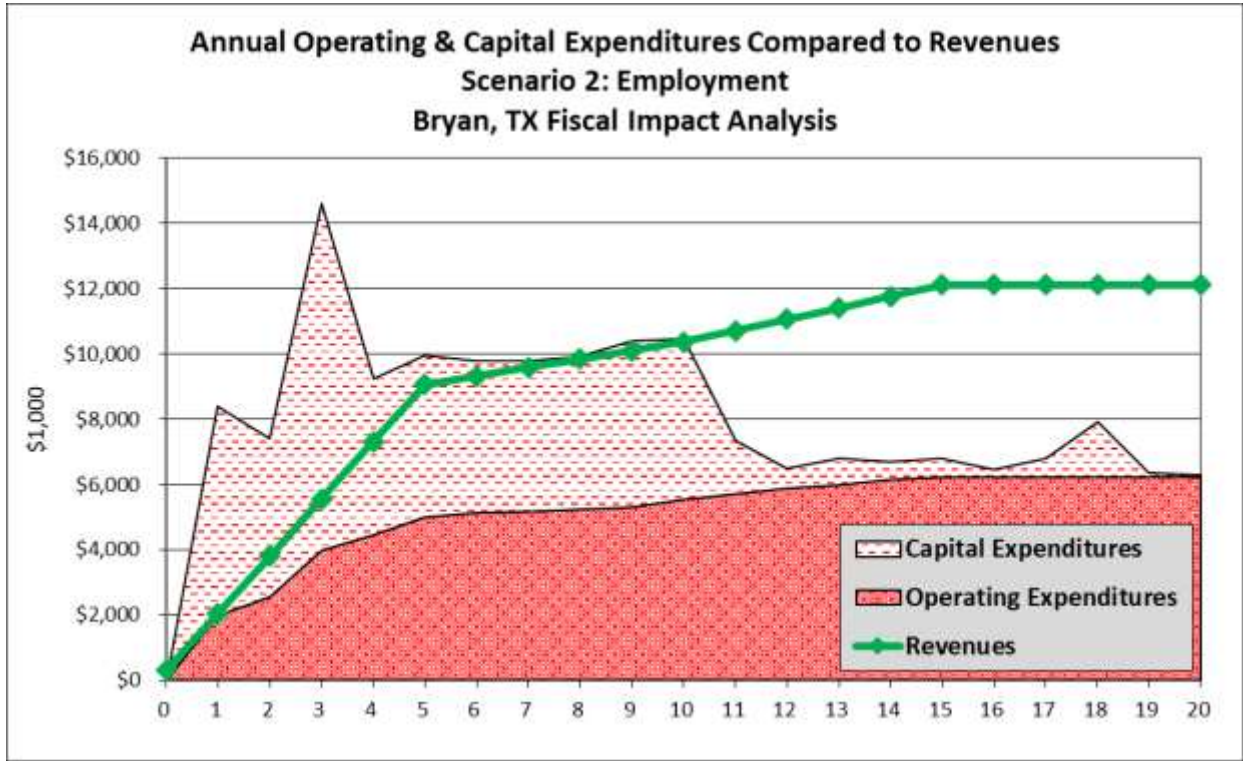
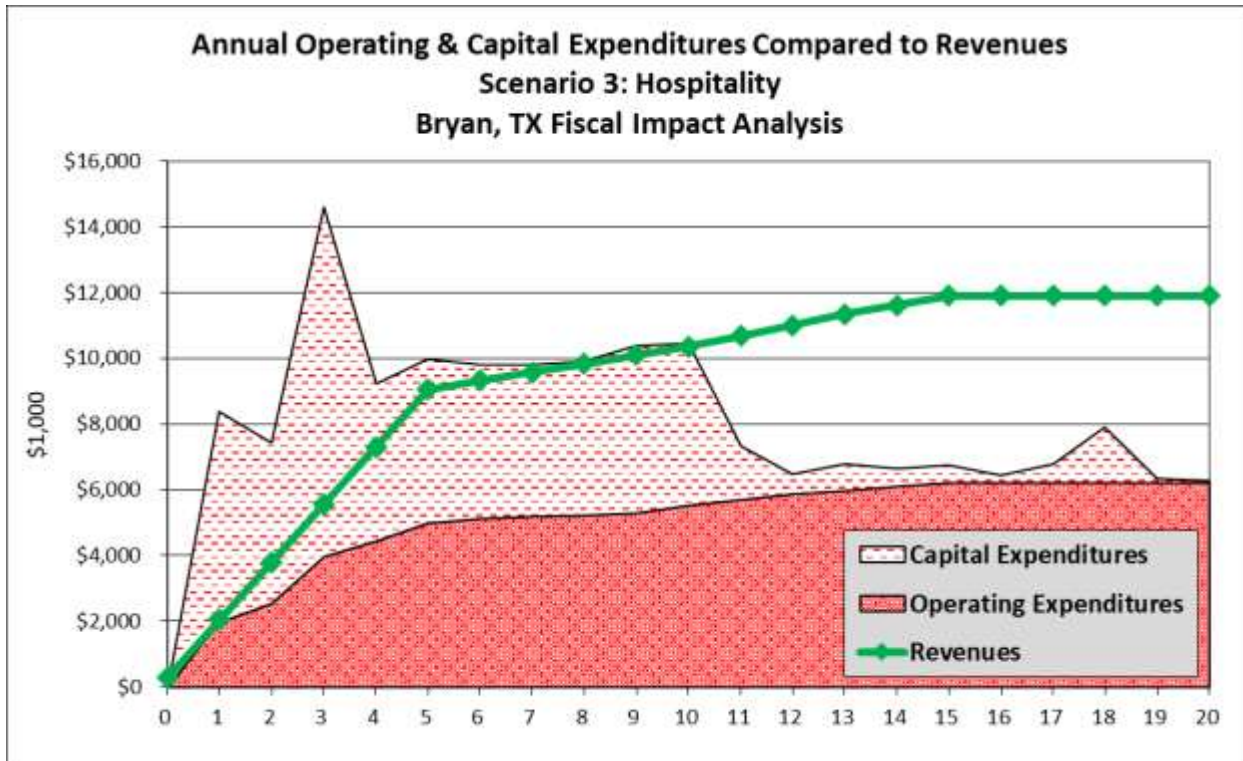


Figure 15. Scenario 3 Annual Operating and Capital Expenditures Compared to Revenues



As shown above, sufficient revenues are generated to cover operating costs. This is not uncommon for jurisdictions and often easier to “solve for” than operating deficits. For instance, it is often easier to identify and implement specific revenue sources that can be earmarked for capital purposes (e.g., impact fees) as well as designate a portion of an existing revenue source (e.g., property taxes) for a specific capital purpose.

A list of capital needs and costs is shown below in the next three figures. Replacement facilities and major maintenance are not included in the capital costs. Facilities needed to serve new growth are reflected. For capital improvements that are purchased—vehicles, equipment, etc., the model and results do include both the initial purchase cost and the cost to replace the item after it reaches its useful life. The costs shown below include both initial purchase and replacements, where applicable.

Figure 16. Scenario One Summary of Capital Improvement Needs

Capital Facilities	Units	Total Cost
General Govt Office Building (sq. ft.)	14,439	\$4,418,213
Fire Stations (Temporary & Permanent)	2	\$4,784,000
Fire Engines	2.00	\$1,900,000
Ambulances	5.00	\$1,300,000
Ladder Trucks	2.00	\$3,000,000
Police Patrol Vehicles	45.00	\$2,813,123
Public Works Vehicles	3.00	\$136,152
Road Lane Miles	17.33	\$44,861,661
Total		\$63,213,149

Figure 17. Scenario Two Summary of Capital Improvement Needs

Capital Facilities	Units	Total Cost
General Govt Office Building (sq. ft.)	12,987	\$3,973,969
Fire Stations (Temporary & Permanent)	2	\$4,784,000
Fire Engines	2.00	\$1,900,000
Ambulances	5.00	\$1,300,000
Ladder Trucks	2.00	\$3,000,000
Police Patrol Vehicles	42.00	\$2,625,582
Public Works Vehicles	3.00	\$136,152
Road Lane Miles	17.33	\$44,861,661
Total		\$62,581,363

Figure 18. Scenario Three Summary of Capital Improvement Needs

Capital Facilities	Units	Total Cost
General Govt Office Building (sq. ft.)	12,753	\$3,902,364
Fire Stations (Temporary & Permanent)	2	\$4,784,000
Fire Engines	2.00	\$1,900,000
Ambulances	5.00	\$1,300,000
Ladder Trucks	2.00	\$3,000,000
Police Patrol Vehicles	42.00	\$2,625,582
Public Works Vehicles	3.00	\$136,152
Road Lane Miles	17.33	\$44,861,661
Total		\$62,509,759

Cumulative Fiscal Impact Results

The next set of fiscal results provides **cumulative net fiscal results**, providing detail on total projected revenues and total projected expenditures over the 20-year period. All revenues and expenditures are captured. Cumulatively, a positive net impact is generated from all three scenarios over the 20-year period. There is sufficient revenue generated from growth to cover resulting operating and capital needs.

Figure 19. Cumulative (Total Years 1-20) Fiscal Impact Results (Chart)

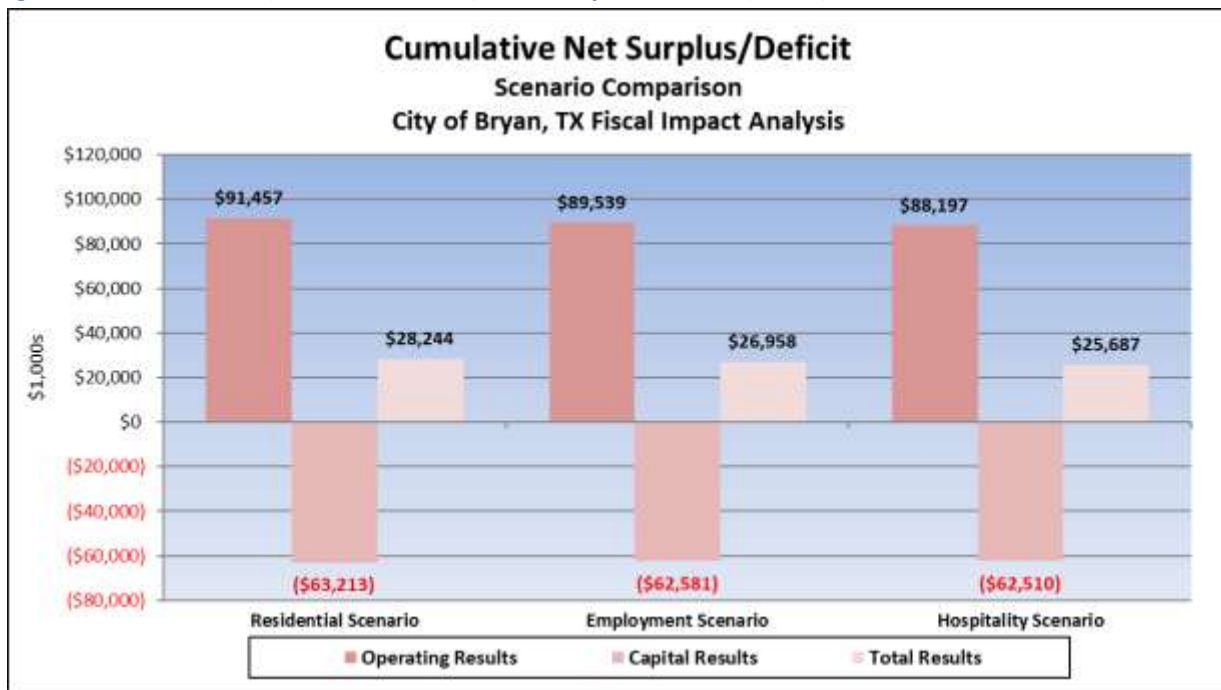


Figure 20. Cumulative (Total Years 1-20) Fiscal Impact Results (Table)

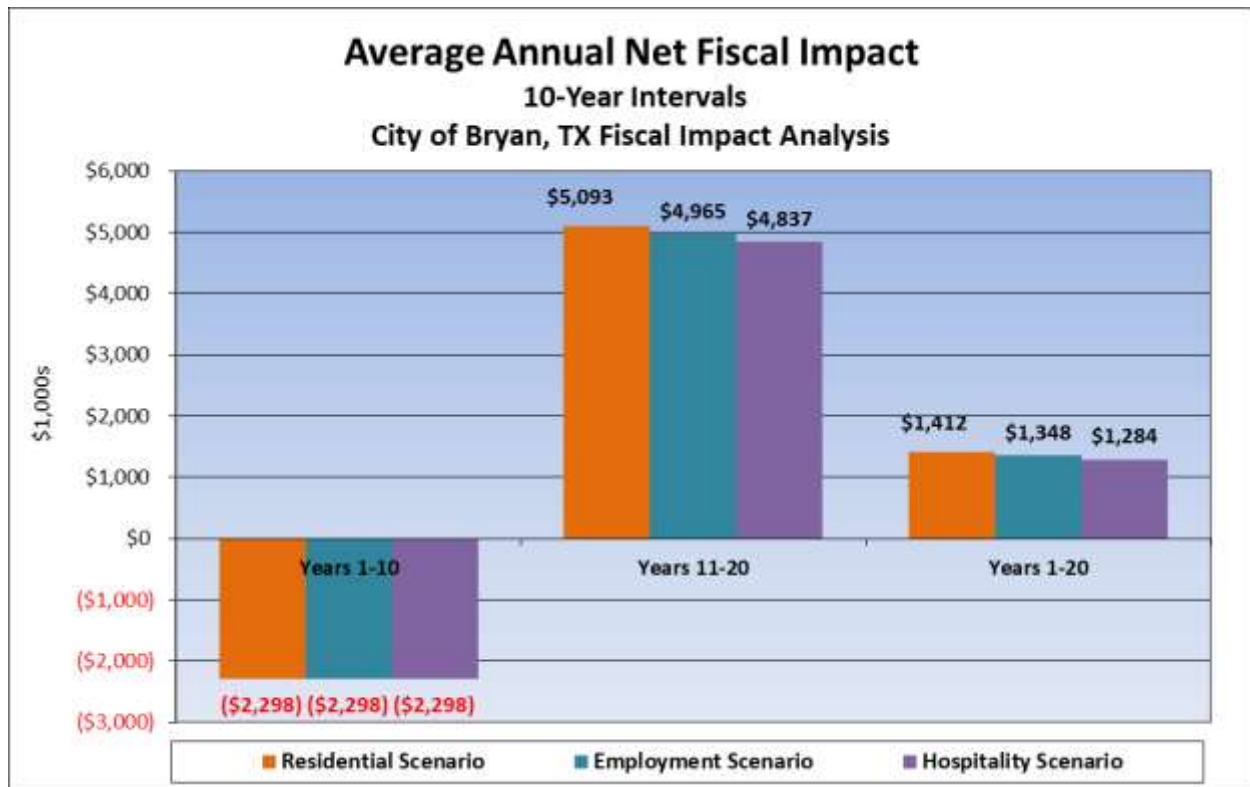
20-Year Total Net Fiscal Impact - Scenario Comparisons City of Bryan Annexation Fiscal Impact Model (\$1,000)			
Category	SCENARIO		
	Residential Scenario	Employment Scenario	Hospitality Scenario
<i>Operating</i>			
Operating Revenues	\$199,839	\$194,869	\$193,350
Operating Expenditures	\$108,382	\$105,330	\$105,153
OPERATING NET FISCAL IMPACT	\$91,457	\$89,539	\$88,197
<i>Capital</i>			
Capital Revenues	\$0	\$0	\$0
Capital Expenditures	\$63,213	\$62,581	\$62,510
CAPITAL NET FISCAL IMPACT	(\$63,213)	(\$62,581)	(\$62,510)
GRAND TOTAL NET FISCAL IMPACT	\$28,244	\$26,958	\$25,687
AVERAGE ANNUAL FISCAL IMPACT	\$1,412	\$1,348	\$1,284

Average Annual Fiscal Impact Results

Results are also presented on an average annual basis—over three time periods: Years 1-10, Years 11-20; and over the entire projection period, Years 1-20. Consistent with the other results, the fiscal results in Figure 21 include non-enterprise operating and capital impacts.

The results in the figure illustrate the pattern seen when analyzing the non-cumulative results year over year. There is a large capital burden in the first ten years in the scenarios and in the last ten years there are positive fiscal impact because the capital road improvement projects beginning to slow down and the cumulative nature of property tax. The revenue generation between Years 11-20 for each scenario is able to cover the deficit resulting in Years 1-10. **The scenarios generate the same fiscal results in the first timeframe because FAZ 2, 3, 4 develop in Years 1-10 and develop the same in each scenario.**

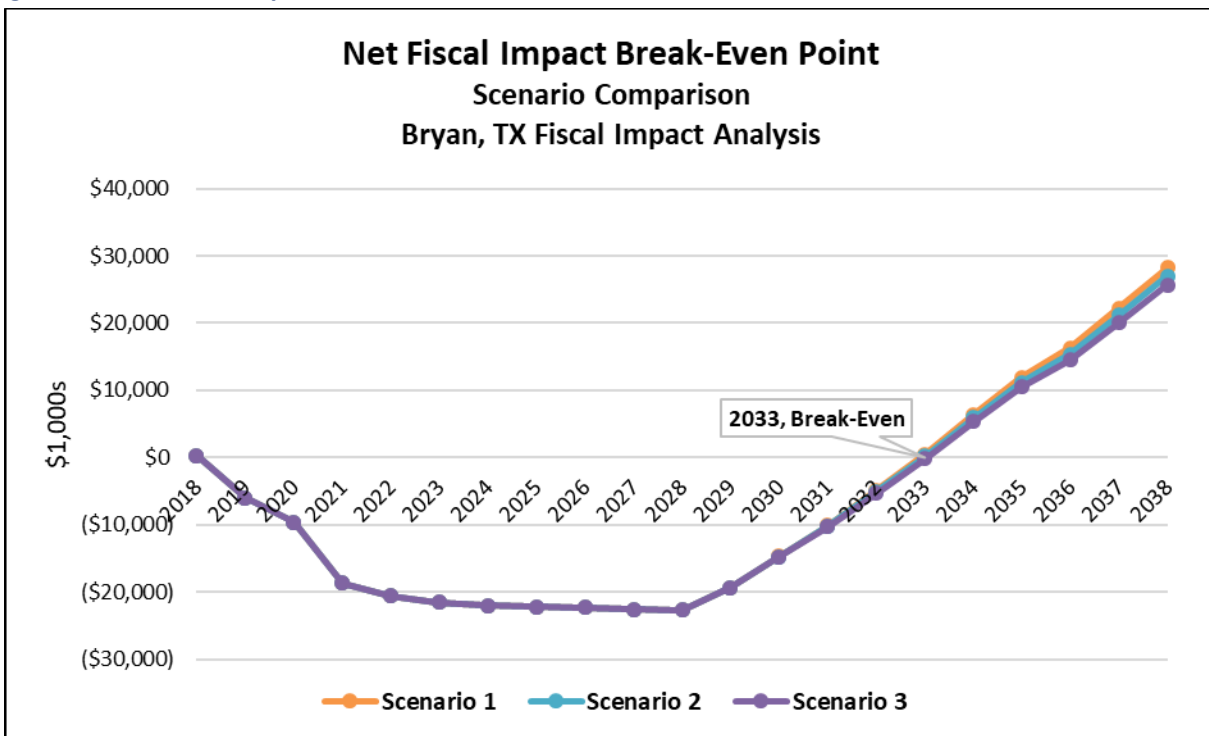
Figure 21. Average Annual Fiscal Impact Results



Break-Even Point Results

The break-even point is calculated by reducing the cumulative revenue by the cumulative expenditures (including both operating and capital costs). A net fiscal impact over the \$0 line represents a break-even point. Illustrated in previous figures, there is an overall positive net impact for each scenario and, in each year, the revenues are able to cover the operating costs generated by the development. As such, Figure 22 illustrates the time in which the positive net impact from City operations can cover the capital costs triggered in the scenarios. **Each scenario has a break-even point of 2033, or Year 15.** By 2033, the initial large capital costs (i.e. roads and fire stations) are covered by revenues from the developments. Furthermore, each scenario continues to experience an increasing positive fiscal impact through the remaining years in the analysis.

Figure 22. Net Fiscal Impact Break-Even Point



Discussion of Fiscal Impact Analysis Results

Key findings from the Fiscal Impact Analysis are discussed below:

- The net positive impacts are driven primarily by sales and property tax revenue from development. This allows for the City of Bryan to benefit from both residential and nonresidential development.
- The similar result for each scenario is a consequence of relatively similar development scenarios. Fiscal analysis zones (FAZs) 2, 3, and 4 were held constant in the three scenarios to allow for differences in FAZ 1 to be compared.
- When examining just FAZ 1, Scenario 1 (Residential Scenario) has the best fiscal results for the City. This stems from the property value assumed for housing units in the study. An analysis of property values for recently built homes (2010-2017) in the western side of the City indicated that an average single family home is valued at \$305,000. This value is used for new single family homes in the analysis. Although, residential developments generally have higher expenditures than nonresidential developments (which is the case in this study), the higher level of property tax from new homes is able to offset a larger portion of expenditures than FAZ 1 in the other two scenarios which are centered around nonresidential development.
- It should be noted that, on average, the resulting annual net positive impact from the scenarios reflects just over 1 percent of the City's total current budget.
- Over time, the revenues are able to cover the increase in operating and capital expenditures. The largest operating cost burden for the City is generated by Public Safety while road costs are the largest share of capital burdens. The three scenarios break-even in Year 15.
- For operating expenses, the Fire and Police Department generate the highest costs for each scenario. The new fire station requires a large staff to operate the station's apparatuses. Also, the new development is expected to increase police calls for service, so to continue serving at the current level of service new hires are necessary.
- A new fire station is projected in Year 3. Although there is no new development in FAZ 1 until midway through the projection period, a new fire station is necessary to serve the current population of that area. If a fire station is not constructed, it is expected that the Fire Department's ISO rating would suffer and drop from the top ranking of 1 at the next evaluation of the City of Bryan. The newly annexed area would be rated an ISO 10 without a new fire station. A rating of 10 equates to no fire protection. The new station triggers an ongoing annual operating cost to staff a new fire engine, ambulance, and ladder truck.

- Additionally, there is an immediate need in Year 1 for a temporary facility to house the fire staff and apparatuses until the permanent station is constructed. There are several housing options in FAZ 1, including an old facility on the Texas A&M RELLIS Campus. However, any option requires expansion and modernization. The temporary facility will house a fire engine and ambulance, delaying the purchase and staff for the ladder truck until the new fire station is constructed.
- To approximate the future road construction necessary to accommodate growth, the cost for the new roads identified in the Study Area in the City's Thoroughfare Plan are used. The Thoroughfare Plan has a longer planning horizon compared to the study's projection period, so half the roads in the Plan are estimated to occur in the study. The majority of the road projects happen in FAZ 2, 3, and 4 which develop during the first ten years of the scenarios. Based on coordination with City staff and recent development agreements, it has been assumed that half of the road construction capital projects are supported by future developers. As a result, the City funds the remaining half of the costs.
- Furthermore, the capital costs have been assumed to be entirely paid for in the year that it is constructed. However, in reality, the City of Bryan may choose to debt finance the projects. Assuming projects are funded with cash allows the model to capture the entire impact of the development compared to modelling the projects being debt financed. For example, if a project is triggered for construction in Year 12 and it is debt financed for 20 years, only 8 of those years will be captured in the 20-year analysis, resulting in less than half of the project's true cost to be reflected in the analysis. Allowing the analysis to project costs without budget constraints, the fiscal impact analysis is able to identify growth's total impact.

IV. FISCAL ANALYSIS IMPACT OF FAZS

As mentioned, there are four fiscal analysis zones (FAZs) in each scenario. Earlier in the report, Figure 2 mapped the FAZs. Since development is expected to occur over time there are three absorption periods. The phasing of the FAZs developing is consistent between the three scenarios with FAZ 2 and 4 developing between Years 1-5, FAZ 3 developing between Years 5-10, and FAZ 1 developing between Years 10-15. To allow the analysis to have a specific focus on the development adjacent to the RELLIS campus (FAZ 1), FAZ 2, 3, 4 are consistent between the scenarios.

Although this annexation study ultimately is concerned with the impact of annexing all four FAZs, it is helpful to understand the fiscal impacts of each FAZ to the City of Bryan.

Note: a marginal approach is programmed into the analysis when applicable for personnel costs. As a result, when FAZs are separated there are slight differences between the sum of the FAZs and the total net fiscal impact found in the previous chapter. For example, police new hires are triggered slightly differently when the FAZs are computed separately compared to when the analysis examines the four FAZs together. Additionally, infrastructure capital costs are allocated to the FAZ that they are constructed in, although the facilities may serve populations in other areas.

FISCAL IMPACT OF FISCAL ANALYSIS ZONES

Shown in Figure 23, all but the FAZ 4 has a negative fiscal impact on the City based on the scenario developments. However, FAZ 4 generates enough revenue to offset the negative impact from the other FAZs. FAZ 4's net impact is large enough to drive the overall annexation analysis positive. The figures following Figure 23 breakdown the FAZs' revenues and expenditures by scenario.

All but FAZ 1, is able to cover its operating expenditures with revenues. FAZ 1 has the second highest revenue, however, the operating expenditures related to the temporary and new fire station results in a negative operating fiscal impact. Furthermore, capital expenditures are significantly burdensome for FAZ 1, FAZ 2, and FAZ 3. Specifically, in FAZ 2 and FAZ 3 the generated capital expenditures are greater than the overall revenue generated.

However, FAZ 4 has positive net impact on the City, even when capital expenditures are included. The zone's significant positive fiscal impact is able to cover the negative impacts generated elsewhere in the Study Area, which drives the scenarios to an overall net positive result. FAZ 4's revenue is driven by sales and property tax.

Figure 23. Cumulative Fiscal Impact of Scenarios by Fiscal Analysis Zone

20-Year Net Fiscal Impact - Fiscal Analysis Zone Comparison City of Bryan Annexation Fiscal Impact Model (\$1,000)			
Fiscal Analysis Zone	SCENARIO		
	Residential Scenario	Employment Scenario	Hospitality Scenario
FAZ 1	(\$49,082)	(\$49,654)	(\$51,545)
FAZ 2	(\$6,492)	(\$6,492)	(\$6,492)
FAZ 3	(\$11,820)	(\$11,820)	(\$11,820)
FAZ 4	\$96,365	\$96,365	\$96,365

Figure 24. Fiscal Impact of FAZ 1 by Scenario

20-Year Total Net Fiscal Impact - Scenario Comparisons City of Bryan Annexation Fiscal Impact Model (\$1,000)			
Category	SCENARIO		
	Residential Scenario	Employment Scenario	Hospitality Scenario
<i>Operating</i>			
Operating Revenues	\$22,037	\$17,067	\$15,547
Operating Expenditures	\$56,626	\$52,922	\$53,304
OPERATING NET FISCAL IMPACT	(\$34,589)	(\$35,856)	(\$37,756)
<i>Capital</i>			
Capital Revenues	\$0	\$0	\$0
Capital Expenditures	\$14,493	\$13,798	\$13,789
CAPITAL NET FISCAL IMPACT	(\$14,493)	(\$13,798)	(\$13,789)
GRAND TOTAL NET FISCAL IMPACT	(\$49,082)	(\$49,654)	(\$51,545)
AVERAGE ANNUAL FISCAL IMPACT	(\$2,454)	(\$2,483)	(\$2,577)

Figure 25. Fiscal Impact of FAZ 2 by Scenario

20-Year Total Net Fiscal Impact - Fiscal Analysis Zone 2 City of Bryan Annexation Fiscal Impact Model (\$1,000)			
Category	SCENARIO		
	Residential Scenario	Employment Scenario	Hospitality Scenario
<i>Operating</i>			
Operating Revenues	\$5,029	\$5,029	\$5,029
Operating Expenditures	\$1,257	\$1,257	\$1,257
OPERATING NET FISCAL IMPACT	\$3,773	\$3,773	\$3,773
<i>Capital</i>			
Capital Revenues	\$0	\$0	\$0
Capital Expenditures	\$10,265	\$10,265	\$10,265
CAPITAL NET FISCAL IMPACT	(\$10,265)	(\$10,265)	(\$10,265)
GRAND TOTAL NET FISCAL IMPACT	(\$6,492)	(\$6,492)	(\$6,492)
AVERAGE ANNUAL FISCAL IMPACT	(\$325)	(\$325)	(\$325)

Figure 26. Fiscal Impact of FAZ 3 by Scenario

20-Year Total Net Fiscal Impact - Fiscal Analysis Zone 3 City of Bryan Annexation Fiscal Impact Model (\$1,000)			
Category	SCENARIO		
	Residential Scenario	Employment Scenario	Hospitality Scenario
<i>Operating</i>			
Operating Revenues	\$16,923	\$16,923	\$16,923
Operating Expenditures	\$5,319	\$5,319	\$5,319
OPERATING NET FISCAL IMPACT	\$11,604	\$11,604	\$11,604
<i>Capital</i>			
Capital Revenues	\$0	\$0	\$0
Capital Expenditures	\$23,425	\$23,425	\$23,425
CAPITAL NET FISCAL IMPACT	(\$23,425)	(\$23,425)	(\$23,425)
GRAND TOTAL NET FISCAL IMPACT	(\$11,820)	(\$11,820)	(\$11,820)
AVERAGE ANNUAL FISCAL IMPACT	(\$591)	(\$591)	(\$591)

Figure 27. Fiscal Impact of FAZ 4 by Scenario

20-Year Total Net Fiscal Impact - Fiscal Analysis Zone 4 City of Bryan Annexation Fiscal Impact Model (\$1,000)			
Category	SCENARIO		
	Residential Scenario	Employment Scenario	Hospitality Scenario
<i>Operating</i>			
Operating Revenues	\$155,850	\$155,850	\$155,850
Operating Expenditures	\$44,216	\$44,216	\$44,216
OPERATING NET FISCAL IMPACT	\$111,634	\$111,634	\$111,634
<i>Capital</i>			
Capital Revenues	\$0	\$0	\$0
Capital Expenditures	\$15,269	\$15,269	\$15,269
CAPITAL NET FISCAL IMPACT	(\$15,269)	(\$15,269)	(\$15,269)
GRAND TOTAL NET FISCAL IMPACT	\$96,365	\$96,365	\$96,365
AVERAGE ANNUAL FISCAL IMPACT	\$4,818	\$4,818	\$4,818

To illustrate the cumulative net fiscal impact of the FAZs in each scenario, another set of figures are presented. In Figure 28, the net fiscal impact over time is observed for Scenario 1. Displayed in the figure, FAZ 1, FAZ 2, and FAZ 3 stay below the \$0 line (net negative fiscal impacts) during the projection period. However, starting early in the analysis, FAZ 4 begins to have a significant cumulative positive fiscal impact. Consequently, FAZ 4 begins to cover the negative impact of the other FAZs by 2033 (the break-even point).

Results are similar between the scenarios, resulting in the analogous figures.

Figure 28. Cumulative Net Fiscal Impact by FAZ in Scenario 1

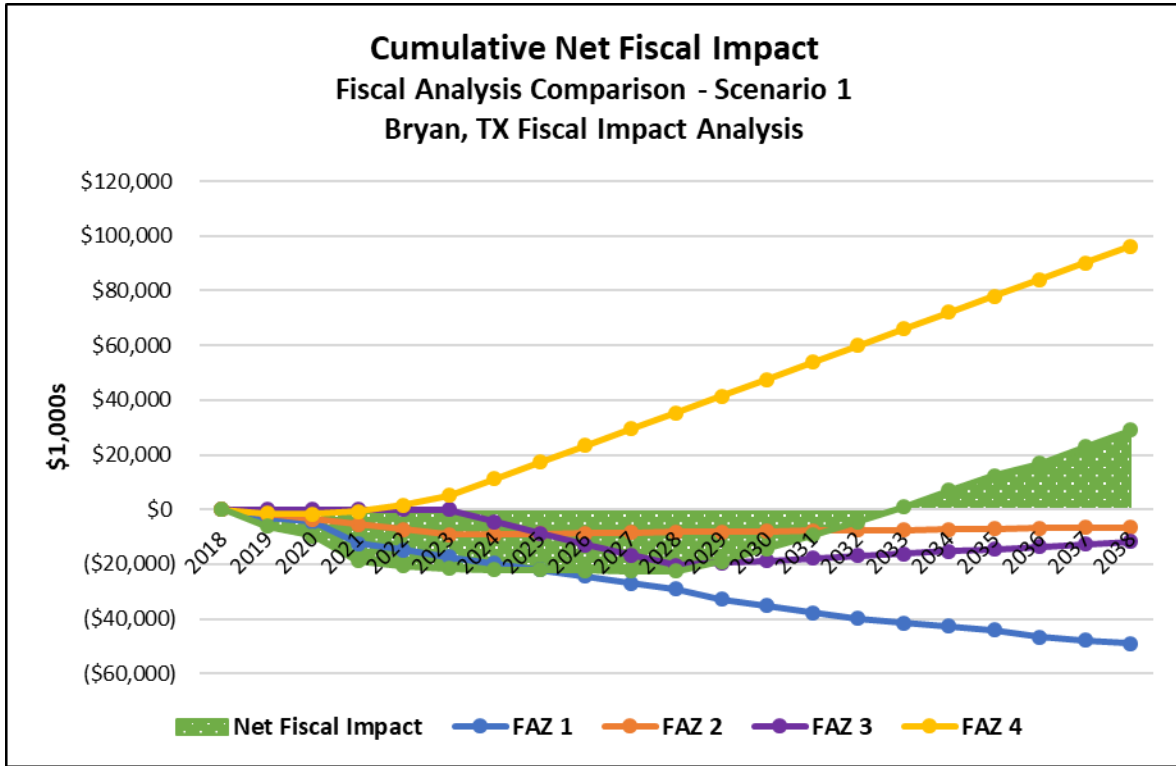


Figure 29. Cumulative Net Fiscal Impact by FAZ in Scenario 2

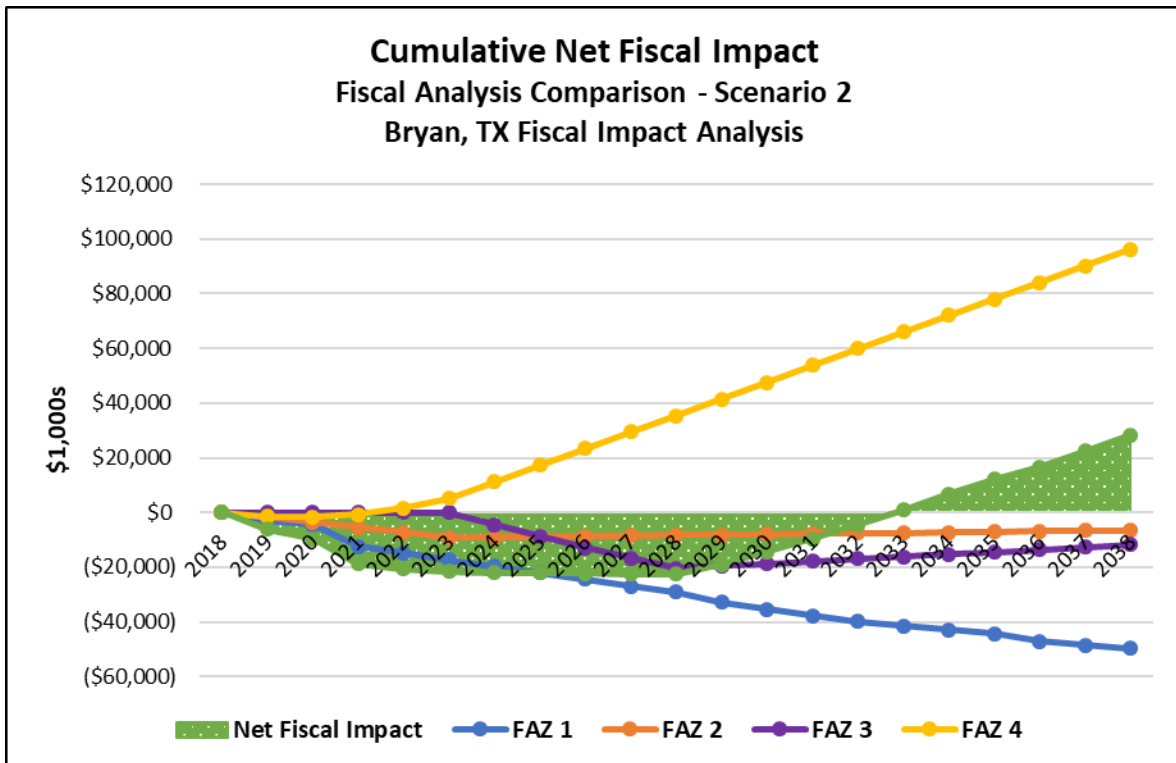
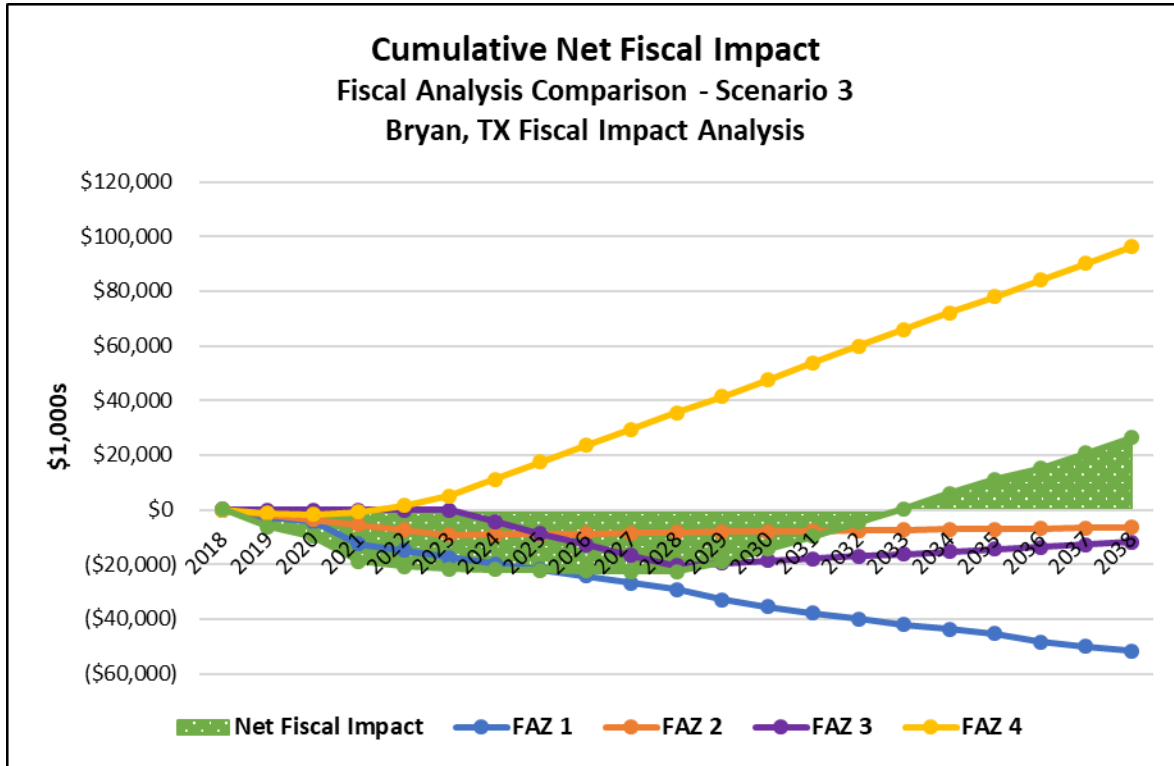


Figure 30. Cumulative Net Fiscal Impact by FAZ in Scenario 3



Summary of FAZ Analysis

When comparing Fiscal Analysis Zones, FAZ 4 is the only zone in which there is a positive impact. The positive fiscal results of the entire annexation area are driven by the high level of positive impact from that zone. FAZ 4 has the most development in the analysis, generating significant revenue from sales and property tax. The impact is able to cover all operating and capital expenditures triggered in all four FAZs. The offsetting effect of FAZ 4 allows for the other zones to develop at a slower pace.

FAZ 1 is the most negatively impactful zone. This is a consequence of needing to provide fire services to the zone, which requires construction of a new station. The new station is assumed to be a fully loaded station with an ambulance, fire engine, and ladder truck. The high level of capacity is needed for this station to serve tall new multifamily developments and the RELLIS campus, which may require the station to have advanced crisis capabilities. The station requires a number of new hires to be operational as well. However, as mentioned, the **development in FAZ 4 ultimately covers all the operating and capital costs in the Study Area.**

V. REVENUE AND EXPENDITURE DETAIL

REVENUE METHODOLOGIES

This chapter provides detail on projection methodologies for revenue included in the analysis. Growth-related revenues are modeled in this analysis in the following funds:

- General Fund
- Special Revenue Funds:
 - Hotel and Motel Tax Fund
 - Street Improvement Fund
 - Drainage Fund
 - Court Technology Fund
 - Debt Service Fund

Other funds that are not included are either Enterprise Funds (self-sustaining), Internal Service Funds, or considered fixed (unaffected by growth).

First, base year City revenues are summarized and provided for context.

Current City Revenues (FY2018)

The City’s current FY18 General Fund by revenue source is shown below to provide a comparison with the revenues that are projected in this study. It should be reiterated that Figure 31 includes only General Fund revenues (and not the other funds included in the study). Figure 32 provides a summary by fund of the major funds included in the study.

Figure 31. City of Bryan FY2018 General Fund Revenues

Current General Fund Revenue Summary City of Bryan, Texas		
Category	FY2018	%
City Sales Tax	\$20,299,500	29.2%
Property Tax	\$22,370,604	32.2%
Franchise Fees	\$2,078,000	3.0%
Licenses & Permits	\$773,019	1.1%
Grants	\$1,205,458	1.7%
Charges for Services	\$4,348,823	6.3%
ROW Permits	\$14,711,477	21.2%
Other Income	\$3,699,328	5.3%
Total	\$69,486,209	100.0%

Figure 32. City of Bryan FY2018 Revenues by Fund

Current Revenue Summary City of Bryan, Texas		
Fund	FY2018	%
General Fund	\$69,486,209	76.5%
Hotel/Motel Tax Fund	\$1,300,000	1.4%
Street Improvement Fund	\$5,750,000	6.3%
TIRZ 10 - Traditions Fund	\$913,000	1.0%
TIRZ 19 - Nash Street Fund	\$289,811	0.3%
TIRZ 21 - Downtown Fund	\$120,620	0.1%
TIRZ 22 - Target Tract Fund	\$342,972	0.4%
TIRZ 22 - North Tract Fund	\$188,910	0.2%
Court Technology Fund	\$46,500	0.1%
Community Development Fund	\$2,032,828	2.2%
Oil & Gas Fund	\$271,952	0.3%
Debt Service	\$10,080,120	11.1%
Total	\$90,822,922	100.0%

General Fund Revenues

A snapshot of the City General Fund from the model is shown below by specific category and line item. The table shows the specific revenue category and source, base year (FY 2018) budget amount, projection methodology, and the level of service (LOS) standard, or dollar per demand unit. For instance, for those categories projected based on “POPULATION,” the current budget amount is divided by the estimated population for base year 2018. For example, the Animal Center amount of \$82,983 is divided by the base year population (87,079) to yield a per capita cost factor of \$0.95, which is then used to project future revenue from this source from future population growth.

Figure 33: General Fund Revenues

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std \$ per Demand Unit
Taxes	City Sales Tax	\$20,299,500	DIRECT ENTRY	\$0.00
	Property Tax	\$22,370,604	CUMUL AV	\$0.46
Franchise Fees	Franchise Fees	\$2,078,000	POP AND JOBS	\$16.15
Licenses & Permits	Business	\$36,535	JOBS	\$0.88
	Building Permits/Inspections	\$736,484	POP AND JOBS	\$5.72
Grants	Federal	\$0	FIXED	\$0.00
	State	\$0	FIXED	\$0.00
	Local Government	\$1,124,258	FIXED	\$0.00
	Private	\$81,200	FIXED	\$0.00
Charges for Services	General Government	\$144,840	POP AND JOBS	\$1.13
	Public Safety	\$689,520	POP AND JOBS	\$5.36
	Animal Center	\$82,983	POPULATION	\$0.95
	Mowing & Demo	\$96,900	FIXED	\$0.00
	Ambulance & Vital Stats	\$1,998,180	POP AND JOBS	\$15.53
	Recreation	\$1,284,400	POPULATION	\$14.75
	Library	\$52,000	POPULATION	\$0.60
Other Income	Fines	\$1,477,100	POP AND JOBS	\$11.48
	Miscellaneous and Shared Tax	\$2,112,228	POPULATION	\$7.28
	ROW Permits	\$14,711,477	POP AND JOBS	\$57.17
	Transfers In	\$110,000	FIXED	\$0.00
Future Category	Future Revenue		FIXED	\$0.00
	Future Revenue		FIXED	\$0.00
	Future Revenue		FIXED	\$0.00
	TOTAL	\$69,486,209		

NOTES TO TABLE:

CUMUL AV = Cumulative Assessed Value of real property

Other Customized/Marginal Calculations for General Fund

Revenues are projected assuming that the current revenue structure and tax rates, as defined by the FY18 budget, will not change during the analysis period. The following details the custom methodology used for certain revenue streams

- **City Sales Tax** is attributed to nonresidential development. To determine the level of revenue for each nonresidential category, the 2017 sales tax revenue totals from the Texas Comptroller of Public Accounts and the estimated floor area of the current nonresidential development in the City of Bryan are combined. Shown in Figure 34, retail development averages \$3.89 in annual sales tax per square foot compared to \$0.16 per square foot for office and \$0.75 per square foot for industrial development.

Figure 34. Sales Tax Revenue per Square Foot

Industry	2017 Sales Tax	Square Feet	Sales Tax Revenue/SF
Retail	\$14,277,829	3,668,218	\$3.89
Office	\$887,226	5,534,278	\$0.16
Industrial	\$3,848,627	5,122,108	\$0.75
Institutional	-	9,039,037	-
Total	\$19,013,682	23,363,641	\$0.81

Source: Texas Comptroller of Public Accounts; Bryan College Station MPO TAZ data; Trip Generation, Institute of Transportation Engineers, 10th Edition (2017).

Note: Institutional organizations are considered tax exempt

- **Property Tax** is projected based on the respective cumulative assessed values (see below for additional detail) of the property projected in the scenarios. Cumulative assessed values are multiplied by the current City tax rate of \$0.465 per \$100 valuation. As shown, assessed values for residential real property and nonresidential real property were projected separately to allow for comparison by type of development.

Figure 35. Assessed Values

Residential (\$/unit)	
Single Family	\$305,000
Multifamily	\$98,000

Nonresidential (\$/square foot)	
Retail	\$157
Office	\$162
Industrial	\$41
Hotel	\$104
Institutional*	0

*Note: land uses projected are assumed tax exempt

Source: Brazos Central Appraisal District

- **Licenses & Permits, Charges for Services, and Other Revenues:** Based on discussions with the Finance Department, several line items revenues are likely to increase with growth in *Population, Jobs, or Population and Jobs*.
- **Miscellaneous and Shared Tax:** Of that revenue, 70 percent is from the City selling assets and 30 percent is from the Mixed Drink and Bingo tax. For that reason, only 30 percent of the cost factor is applied to population growth in the model.
- **ROW Permits:** Half of the revenue from Right-of-Way Permits come from the City selling energy to the state electrical grid. As a result, only half of the cost factor is applied to population and job growth in the model.
- Revenues identified as “Fixed” are not anticipated to increase with growth.

Special Revenue Funds

The fiscal impact analysis includes other revenues from Special Revenue Funds, capturing revenues that are anticipated to be generated from growth. The majority of the growth-related Special Revenue Funds are expected to increase as the City’s population and jobs increase.

The **Debt Service Fund** receives a portion of the property tax in the City. Cumulative assessed values are multiplied by the current City tax rate of \$0.165 per \$100 valuation.

Figure 36. Special Revenue Funds

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std \$ per Demand Unit
Hotel/Motel Tax Fund	Hotel Tax	\$1,300,000	POP AND JOBS	\$10.10
Street Improvement Fund	Fees	\$5,590,000	POP AND JOBS	\$43.45
	Other	\$80,000	FIXED	\$0.00
	Interest Income	\$80,000	FIXED	\$0.00
Drainage Fund	Fees	\$913,000	POP AND JOBS	\$7.10
	Other	\$0	FIXED	\$0.00
	Interest Income	\$0	FIXED	\$0.00
Court Technology Fund	Technology Fee	\$45,000	POP AND JOBS	\$0.35
	Interest Income	\$1,500	FIXED	\$0.00
Debt Service Fund	Property Tax	\$7,764,467	CUMUL AV	\$0.17
	Interest Income	\$35,000	FIXED	\$0.00
	BVSW/MA	\$401,431	FIXED	\$0.00
	Transfers in	\$1,879,222	POP AND JOBS	\$14.61
	TOTAL	\$24,059,360		

REVENUE OUTPUTS

This section details revenue outputs from the Fiscal Impact Analysis.

Revenue Projections

The following figures illustrate the projected revenues in the City’s General Fund and other Funds modeled. Results are shown as a cumulative total over the 20-year projection period as well as an average annual figure. As noted in the figures, the listed dollar amounts are in \$1,000s.

The scenarios have similar revenue generation, but the Residential Scenario generates the most among the three. The scenarios average just below \$10 million in annual revenue.

Figure 37: Revenue Projections by Scenario

20-Year Cumulative Revenues - Scenario Comparisons City of Bryan Citywide Fiscal Impact Model (\$1,000)						
Category	SCENARIO					
	Residential Scenario	%	Employment Scenario	%	Hospitality Scenario	%
General Fund Revenues						
Sales Tax	\$69,424	43%	\$70,706	45%	\$69,020	44%
Property Tax	\$68,059	42%	\$65,077	41%	\$65,409	42%
Franchise Fees	\$3,002	2%	\$2,837	2%	\$2,812	2%
Licenses & Permits	\$1,112	1%	\$1,054	1%	\$1,045	1%
Grants	\$0	0%	\$0	0%	\$0	0%
Charges for Services	\$6,239	4%	\$5,819	4%	\$5,786	4%
Other Income	\$13,720	8%	\$12,929	8%	\$12,826	8%
SUBTOTAL GENERAL FUND REVENUES	\$161,555	100%	\$158,422	100%	\$156,898	100%
SUBTOTAL SPECIAL REVENUE FUND REVENUES	\$38,284		\$36,447		\$36,452	
GRAND TOTAL REVENUES	\$199,839		\$194,869		\$193,350	

Figure 38. Revenue Totals and Annual Average

20-Year Total Revenue - Scenario Comparisons City of Bryan Citywide Fiscal Impact Model (\$1,000)						
Category	SCENARIO					
	Residential Scenario	%	Employment Scenario	%	Hospitality Scenario	%
General Fund Revenue	\$161,555	81%	\$158,422	81%	\$156,898	81%
Special Revenues	\$38,284	19%	\$36,447	19%	\$36,452	19%
Capital Revenues	\$0	0%	\$0	0%	\$0	0%
CUMULATIVE TOTAL	\$199,839	100%	\$194,869	100%	\$193,350	100%
ANNUAL AVERAGE REVENUE	\$9,992		\$9,743		\$9,667	

OPERATING EXPENDITURE METHODOLOGIES

All variable operating expenditures are projected—including personnel and operating costs. Capital Expenditures are discussed in a separate section.

First, base year City expenditures are summarized and provided for context.

Current City Expenditures (FY2018)

The City’s current FY18 General Fund expenditures by source are shown below to provide a comparison with the expenditures projected in this study. It should be reiterated that Figure 39 includes only General Fund expenditures (and not the other funds included in the study). Figure 40 provides a summary of expenditures by major funds included in the study.

Figure 39. City of Bryan FY2018 General Fund Expenditures

Current General Fund Expenditure Summary City of Bryan, Texas		
Category	FY2018	%
Public Safety	\$39,192,574	52%
Public Works	\$5,577,311	7%
Development Services	\$2,779,891	4%
Community Services	\$8,976,921	12%
Support Services	\$9,519,203	13%
General Administration	\$4,871,519	6%
Non-Departmental	\$4,528,504	6%
Total	\$75,445,923	100%

Figure 40. City of Bryan FY2018 Expenditures by Fund Group

Current Expenditure Summary City of Bryan, Texas		
Fund	FY2018	%
General Fund	\$75,445,923	73%
Hotel Tax Fund	\$1,541,500	1%
Street Improvement Fund	\$6,844,598	7%
Drainage Fund	\$3,083,419	3%
TIRZ 10 - Traditions Fund	\$2,932,927	3%
TIRZ 19 - Nash Street Fund	\$212,239	0%
TIRZ 21 - Downtown Fund	\$100,000	0%
TIRZ 22 - Target Tract Fund	\$296,176	0%
TIRZ 22 - North Tract Fund	\$203,297	0%
Court Technology Fund	\$34,500	0%
Community Development Fund	\$2,032,828	2%
Oil & Gas Fund	\$0	0%
Debt Service	\$11,326,657	11%
Total	\$104,054,064	100%

For most City departments, operations and personnel costs are projected separately. A summary of the approach is provided below. It should be noted that many departments have some portion of their budget that is considered “fixed” and will not increase with growth. That is, existing operations will be able to absorb a portion of additional impacts from growth in the City. In the figure below, “fixed” is only indicated for those categories that are considered entirely “fixed.”

Figure 41: General Fund Operating Expenditures Approach

Expenditure Category	Department	Population	Jobs	Population & Jobs	Lane Miles	Total Police Calls	Total Fire and EMS Calls	Custom Analysis	Fixed	Staff Modeled?
General Fund										
Public Safety	Municipal Court					✓				✓
	Police Services					✓				✓
	Fire & Emergency Services						✓			✓
	Bryan Animal Center	✓								✓
Public Works	Engineering Services				✓					✓
	Streets & Drainage				✓					✓
	Traffic				✓					✓
Development Services	Development Services			✓						✓
	Code Enforcement			✓						✓
	Community Development Admin.			✓						✓
Community Services	Library Services	✓								✓
	Parks And Recreation							Contact hires based on new park acres	✓	
	Golf Course	✓								✓
Support Services	Fiscal Services								✓	
	Information Technology								✓	
	Human Resources								✓	
	Facility Services								✓	
	Fleet Services								✓	
General Administration	Executive Services								✓	
	Economic Development			✓						✓
	Internal Audit								✓	
	City Secretary	✓								✓
	City Council Services								✓	
	Communications & Marketing	✓								✓
	Neighborhood & Youth Services	✓								✓
Legal Services			✓						✓	

Figure 42: Special Revenue Funds Operating Expenditures Approach

Expenditure	Population	Jobs	Population & Jobs	Lane Miles	Total Police Calls	Total Fire and EMS Calls	Custom Analysis	Fixed
Special Revenue Funds								
Hotel Tax Fund	✓							
Street Improvement Fund				✓				
Drainage Fund			✓					
TIRZ 10 - Traditions Fund								✓
TIRZ 19 - Nash Street Fund								✓
TIRZ 21 - Downtown Fund								✓
TIRZ 22 - Target Tract Fund								✓
TIRZ 22 - North Tract Fund								✓
Court Technology Fund			✓					
Community Development Fund								✓
Oil & Gas Fund								✓
Debt Service			✓					

Custom Methodologies

All growth-related departments except for Parks and Recreation are modeled using a metric that is calculated in each scenario. Further explanation of those metrics is found in the Base Year Demographic Estimates Chapter. A description of the methodology used to calculate the Parks and Recreation operating expenditures is below.

- Parks and Recreation:* After interviews with staff in the Parks and Recreation Department it was determined that future parks are going to be maintained by contracted hires. As future residential development triggers new parks to be constructed (explained in the next chapter), an additional annual operating cost, based on recent contracted hire, is included. The two most recent parks constructed, Siena and Edgewater, average an annual contracted expense of \$3,274 per acre. The cost factor is applied to all new park acres triggered by new growth.

CAPITAL EXPENDITURE METHODOLOGIES

Capital Expenditures

Capital costs and infrastructure improvements to serve new development are modeled based on demand generated by the future growth scenarios. This section provides further detail on capital cost assumptions used in the Fiscal Impact Analysis. Capital facilities, infrastructure, vehicles, and equipment are projected for General Government, Parks and Recreation, Fire, Police, Public Works, and Transportation.

Many of the assumptions on which the analysis is based can be viewed as policy-making decision points, which if modified would affect the overall results. For example, most of the capital expenditures assumed in the analysis, and the resulting costs (assumed in most cases as debt financed), are projected independent of the current capital improvement programs and debt capacity guidelines. Rather, the capital costs projected in this analysis reflect the potential cost to serve new growth, regardless of whether the resources are available to cover the costs. The City will continue to balance its annual budgets considering financial guidelines and policies, applicable operating impacts, and available resources.

An important aspect of the capital expenditure methodology is that the funding of new facilities will be “front-loaded”. In other words, the projects will be paid in full in the year that they are constructed. Although, in reality the City may debt finance projects. However, including debt financing in the model may lead to the model underestimating the capital costs. For example, if a project is triggered for construction in Year 12 and it is debt financed for 20 years, only 8 of those years will be captured in the 20-year analysis, resulting in less than half of the project’s true cost to be reflected in the analysis.

Furthermore, only facilities for departments that are funded through the City’s General Fund are included in the analysis. Costs for capital improvement needs from Enterprise Funds (i.e. sewer and water) are assumed to be covered by the utility rates charged to users.

General Government Facilities

To serve residential and nonresidential development in the scenarios, the population and job growth is multiplied by the current level of service of municipal buildings. The level of service is found by dividing the current floor area of all municipal buildings by the current population and job total in the City (146,978 square feet / 128,661 population and jobs = 1.14 square feet per population and job). As residential and nonresidential growth occurs in the scenarios, the demand factor of 1.14 square feet per population or job is applied to General Government capital costs. It should be noted that City staff

considered the projected municipal office space increase from this assumed demand factor to be higher than would apply in the City of Bryan context, meaning that actual capital costs would be lower.

Parks and Recreation

The fiscal impact analysis determines growth-related needs for Parks and Recreation infrastructure. Additional Park and Recreation improvements are modeled based on population growth. The City's recommended level of service in the Comprehensive Plan for Neighborhood Parks, Community Parks, and Natural Areas/Trails is included in the model. Additionally, the recommended size for each park category is used to determine when a park should be constructed.

- Neighborhood park – level of service: 2.5 acres per 1,000 residents. Recommended size: 5 acres.
- Community park – level of service: 5 acres per 1,000 residents. Recommended size: 20 acres.
- Natural Area/Trail – level of service: 7 acres per 1,000 residents. Recommended size: 3 acres.

After discussions with staff, an important assumption for Parks and Recreation capital projects, is that new parks and trails are going to be funded by developers. This is consistent with the two most recent parks, Siena and Edgewater. However, the model calculates the new park acres to determine the City's operating cost to maintain them.

No indoor recreational facilities are assumed to be affected by the scenarios.

Fire and EMS

The City currently has five Fire Stations with a total footprint of approximately 67,000 square feet. Per the Bryan Fire Department, a sixth Fire Station will be needed to serve the annexation area, particularly the furthest area, FAZ 1. Additionally, fire service may be necessary at the RELLIS campus which will require a full station that is able to serve advanced fire and rescue situations. With new roads to accompany development in the other FAZs, the new growth in the beginning of the scenarios will be served by current fire stations. However, without a fire station to serve the current population in FAZ 1, the City of Bryan will drop from their top-rated ISO 1 ranking to ISO 10 in the newly annexed area. As such, in the model, a fire station has been directly entered to be constructed and operational in Year 3. Before the construction of the new station is complete, a temporary facility is needed. There are several options, including an old facility at the Texas A&M RELLIS Campus. However, all options are assumed to need expansion and modernization to house staff and fire apparatuses. The following, details the capital and operating costs of a new station.

- It is estimated that to expand and modernize a facility to temporarily house the new staff and vehicles there will be cost of up to \$500,000 spread over multiple years. The capital cost is included in the analysis in Year 1. A new fire engine and ambulance will be posted at this station.

- The fiscal analysis projects a new engine in Year 1 at a cost of \$950,000. The engine is estimated to have a frontline lifespan of ten years.
- The fiscal analysis projects a new ambulance in Year 1 at a cost of \$260,000. The ambulance is estimated to have a frontline lifespan of four years.
- The temporary station will house 21 new personnel hires.
- The new fire station, Station 6, is assumed to be 14,000 square feet at a cost of \$4.3 million. In the analysis, the station's cost and start of operation are included in Year 3.
- The City of Bryan has one ladder truck. To be able to assist the taller buildings and, potentially, more advanced emergency situations at the RELLIS campus, a new ladder truck is assumed to be stationed at Station 6. The fiscal analysis projects a new ladder truck when Station 6 is built at a cost of \$1,500,000. The ladder truck is estimated to have a frontline lifespan of 15 years.
- Lastly, Station 6 will require additional hires to operate the ladder truck, 12 new hires are assumed necessary for Station 6 to be fully operational.
- In total, 33 new hires are expected in the scenarios. The new hires include 6 Lieutenants, 6 Apparatus Operators, and 21 Firefighters. At the current salary and benefits, the annual operating cost of Station 6 is \$2,450,000.
- The City of Bryan may in reality choose to debt finance the construction of the fire stations. However, if this was the case in the fiscal analysis because a portion of the costs would not be captured. Since the construction of Station 6 happens in Year 3, the last years of a 20-year bond would not be included in the model and thus underestimating the real impact of the new station. Because of this, the full cost of the station's construction and apparatuses are triggered when the station is constructed.

Police

After interviews with the Police Department, there are no facilities improvements needed to serve the scenarios. However, additional patrol vehicles are necessary to support the new police hires. For every new Lieutenant, Sergeant, or Officer a new police patrol vehicle is added. A patrol vehicle is estimated to cost \$63,000 and have a frontline lifespan of seven years.

Public Works

After interviews with Public Works staff, there are no facilities improvements needed to serve the scenarios. However, under the scenarios, the City will annex current roadways and new roads will be constructed to serve development. As a result, there will be a need to expand the Public Works vehicle and heavy equipment fleet to accommodate the increase in road maintenance. From an inventory of the Department's fleet, there are 41 vehicles and heavy equipment to serve the current City. The average cost is \$45,000. To continue serving at the current level of service, the model has been programmed to trigger a new unit based on new lane miles added.

Transportation

Along with Kendig Keast Collaborative, Kimley-Horn is partnered on this study to complete an engineering analysis. To understand the fiscal impact of road costs to the City, Kimley-Horn calculated the cost to improve existing roads within the annexation area and the cost to develop collector and arterial roadways. To approximate the new road construction costs, the City's Thoroughfare Plan was examined. Thoroughfare Plans generally have longer horizons than this study's projection period (20 years) and given the uncertainties about the pace of development at the RELLIS campus and exact location of development in the annexation areas, it was determined that not all roadways highlighted in Bryan's Thoroughfare Plan should be included in the fiscal impact analysis. **With consultation from City staff, it was determined that half of the lane miles in the Thoroughfare Plan would be included in the analysis.**

Additionally, after further consultation with City staff and recent development agreements (i.e. the Edgewater subdivision), it was determined that an assumption should be included that developers would fund half of the road construction cost. The City would carry the remaining burden. If a developer funded element was not included in the analysis, the analysis would overburden the City compared to what is expected in reality. However, if the City is not able to secure development agreements that hold developers to at least 50 percent of the road costs in the annexation areas, it is expected that the positive net fiscal impacts of the scenarios would be lessened. Furthermore, it is assumed that local roads will be constructed by developers.

In Figure 43, the total cost estimate is listed and includes construction, right-of-ways, contingency, and design costs. Adding to the costs, as a result of the geography, there are a number of expensive bridges that are necessary. Also, it is assumed that the road costs do not vary based on the type of development in the scenarios. Further detail of the road costs is found in the Kimley-Horn report attached in this packet.

As mentioned, the road costs will be funded entirely in the year that they are constructed. There is no debt financing of the projects. The construction of roads is assumed to coincide with residential and nonresidential development. Each scenario has three phases:

- Phase 1: Years 1-5, development of FAZ 2 and 4.
- Phase 2: Years 6-10, development of FAZ 3.
- Phase 3: Years 11-15, development of FAZ 1.

The total capital costs for the City are listed in Figure 43. To attribute the costs over the projection period, the capital costs of each phase is averaged over the span of the phases, five years each. This method allows for the full cost of the existing roadways and new roads needed to accommodate growth to be captured in the model.

Figure 43. Transportation Capital Costs

Description	City Road Capital Cost (\$)
PHASE 1 (FAZ 2 and 4)	
Roadways	\$20,441,349
PHASE 2 (FAZ 3)	
Roadways	\$22,780,901
PHASE 3 (FAZ 1)	
Roadways	\$1,639,411
GRAND TOTAL	
Roadways	\$44,861,661

Source: Kimley-Horn

A list of capital needs and costs is shown below in the next three figures. Replacement facilities and major maintenance are not included in the capital costs. Facilities needed to serve new growth are reflected. For capital improvements that are purchased—vehicles, equipment, etc., the model and results do include both the initial purchase cost and the cost to replace the item after it reaches its useful life. The costs shown below include both initial purchase and replacements, where applicable.

Figure 44. Scenario One Summary of Capital Improvement Needs

Capital Facilities	Units	Total Cost
General Govt Office Building (sq. ft.)	14,439	\$4,418,213
Fire Stations (Temporary & Permanent)	2	\$4,784,000
Fire Engines	2.00	\$1,900,000
Ambulances	5.00	\$1,300,000
Ladder Trucks	2.00	\$3,000,000
Police Patrol Vehicles	45.00	\$2,813,123
Public Works Vehicles	3.00	\$136,152
Road Lane Miles	17.33	\$44,861,661
Total		\$63,213,149

Figure 45. Scenario Two Summary of Capital Improvement Needs

Capital Facilities	Units	Total Cost
General Govt Office Building (sq. ft.)	12,987	\$3,973,969
Fire Stations (Temporary & Permanent)	2	\$4,784,000
Fire Engines	2.00	\$1,900,000
Ambulances	5.00	\$1,300,000
Ladder Trucks	2.00	\$3,000,000
Police Patrol Vehicles	42.00	\$2,625,582
Public Works Vehicles	3.00	\$136,152
Road Lane Miles	17.33	\$44,861,661
Total		\$62,581,363

Figure 46. Scenario Three Summary of Capital Improvement Needs

Capital Facilities	Units	Total Cost
General Govt Office Building (sq. ft.)	12,753	\$3,902,364
Fire Stations (Temporary & Permanent)	2	\$4,784,000
Fire Engines	2.00	\$1,900,000
Ambulances	5.00	\$1,300,000
Ladder Trucks	2.00	\$3,000,000
Police Patrol Vehicles	42.00	\$2,625,582
Public Works Vehicles	3.00	\$136,152
Road Lane Miles	17.33	\$44,861,661
Total		\$62,509,759

Capital Costs Funded by Enterprise Funds

Along with roadway capital costs, Kimley-Horn has identified capital costs for sewer and water facilities. Found in Figure 47, there is a grand total of \$56.8 million in capital costs for sewer and water facilities over the 20-year projection period. It is assumed that these projects are funded through the City’s Enterprise Funds and are covered by utility rates, thus not affecting the City’s General Fund. As a result, the capital costs are not included in the analysis. However, if these projects were funded through the City’s General Fund it would have a negative fiscal impact.

Figure 47. Capital Costs Funded by Enterprise Funds

Description	Construction Cost	Contingency	Engineering, Surveying, and Testing	Subtotal
Years 1-5 (FAZs 2 and 4) Public Infrastructure Components				
Sanitary Sewer	\$26,830,176	\$4,024,526	\$3,756,225	\$34,610,927
Water	\$1,735,635	\$260,345	\$279,437	\$2,275,417
Subtotal	\$28,565,811	\$4,284,871	\$4,035,662	\$36,886,344
Years 6-10 (FAZ 3) Public Infrastructure Components				
Sanitary Sewer	\$2,313,070	\$346,961	\$323,830	\$2,983,861
Water	\$2,546,703	\$382,005	\$410,019	\$3,338,727
Subtotal	\$4,859,773	\$728,966	\$733,849	\$6,322,588
Years 11-15 (FAZ 1) Public Infrastructure Components				
Sanitary Sewer	\$4,956,160	\$743,424	\$693,862	\$6,393,446
Water	\$5,473,625	\$821,044	\$881,254	\$7,175,923
Subtotal	\$10,429,785	\$1,564,468	\$1,575,116	\$13,569,369
Grand Total	\$43,855,369	\$6,578,305	\$6,344,627	\$56,778,301

Source: Kimley-Horn

EXPENDITURE OUTPUTS

This section details **expenditure** outputs from the Fiscal Impact Analysis.

Operating and Capital Expenditure Projections

Operating and capital expenditure results are provided in this section based on the expenditure methodologies discussed above.

For operating expenditure projections, the 20-year cumulative total is shown. Of the costs, the Fire and Police Department account for the majority. Much of the Fire Department operating costs are generated from the personnel needed at the new station. Also, new staffing costs for the Police Department is driving the high operating expenses. Shown in Figure 48, the other government departments are affected far less by growth than the Public Safety departments. Also, there are increases in expenditures in the Special Revenue Funds.

Figure 48: Operating Expenditure Projections by Scenario

20-Year Total Operating Expenditures - Scenario Comparisons City of Bryan Annexation Fiscal Impact Model (\$1,000)						
Category	SCENARIO					
	Residential Scenario	%	Employment Scenario	%	Hospitality Scenario	%
Police Service	\$25,359	31%	\$24,097	30%	\$24,121	30%
Fire Department	\$50,113	60%	\$49,942	61%	\$49,961	62%
Public Safety - Other	\$1,879	2%	\$1,803	2%	\$1,807	2%
Public Works Department	\$821	1%	\$821	1%	\$821	1%
Development Services	\$1,136	1%	\$1,073	1%	\$1,064	1%
Support Services	\$0	0%	\$0	0%	\$0	0%
General Government	\$1,066	1%	\$1,005	1%	\$997	1%
Other	\$2,628	3%	\$2,483	3%	\$2,462	3%
SUBTOTAL GENERAL FUND EXPS	\$83,002	100%	\$81,223	100%	\$81,233	100%
SUBTOTAL SPECIAL REVENUE FUND EXPS	\$25,380		\$24,106		\$23,920	
GRAND TOTAL OPERATING EXPS	\$108,382		\$105,330		\$105,153	

The capital results for General Fund funded departments are shown below.

The analysis assumes all capital projects to be funded in the year that they are constructed. If projects were modeled as debt financed, the debt service costs would continue after the last year of the projection period, resulting in the full capital costs not being captured in the analysis. As illustrated in Figure 49, the capital costs for improvements to existing roads and construction of new roads is the most expensive category. The new fire station and apparatuses for the station contribute a significant amount to the total capital costs as well.

Figure 49. Summary of Capital Costs

20-Year Total Capital Expenditures - Scenario Comparisons City of Bryan Annexation Fiscal Impact Model (\$1,000)						
Category	SCENARIO					
	Residential Scenario	%	Employment Scenario	%	Hospitality Scenario	%
General Government	\$4,418	7%	\$3,974	6%	\$3,902	6%
Parks and Recreation	\$0	0%	\$0	0%	\$0	0%
Fire Department	\$10,984	17%	\$10,984	18%	\$10,984	18%
Police Department	\$2,813	4%	\$2,626	4%	\$2,626	4%
Public Works	\$136	0%	\$136	0%	\$136	0%
Transportation	\$44,862	71%	\$44,862	72%	\$44,862	72%
TOTAL	\$63,213	100%	\$62,581	100%	\$62,510	100%

APPENDIX A: DEMOGRAPHIC AND DATA ASSUMPTIONS

BASE YEAR DEMOGRAPHIC ESTIMATES

The table below summarizes estimates of the base year population, housing units, employment, nonresidential space, and facility factors in the City of Bryan. These estimated values serve as the basis for the fiscal impact analysis and are used to determine the cost and revenue factors used in the analysis.

Figure 50. Base Year Input Data

Population [1]	POPULATION	87,079
	JOBS	41,581
	POP AND JOBS	128,661
Housing Units by Type [1]	SINGLE FAMILY	25,172
	APARTMENTS	13,909
	TOTAL HOUSING	39,081
	SF UNITS	25,172
Jobs by Type [1]	OFFICE JOBS	16,434
	RETAIL JOBS	8,596
	INDUSTRIAL JOBS	8,150
	INSTITUTIONAL JOBS	8,402
	TOTAL JOBS	41,581
	RETAIL, OFFICE, IND JOBS	33,179
Nonresidential Floor Area [2]	OFFICE SF	5,534,278
	RETAIL SF	3,668,218
	INDUSTRIAL SF	5,122,108
	INSTITUTIONAL SF	9,039,037
	TOTAL NR KSF	23,363,641
Vehicle Trips [3]	RESIDENTIAL TRIPS	174,715
	NONRES TRIPS	177,858
	VEHICLE TRIPS	352,573
Facility Factors	[4] LANE MILES	762
	[5] PARK ACRES	570
	[5] FACILITY SF	385,128
Public Safety Factors	TOTAL POLICE CALLS	65,047
	TOTAL FIRE AND EMS CALLS	11,979

[1] Bryan College Station MPO TAZ data

[2] Bryan College Station MPO TAZ data; Trip Generation, Institute of Transportation Engineers, 10th Edition (2017).

[3] Institute of Transportation Engineers (ITE) Trip Generation Manual, 2017.

[4] City of Bryan Streets & Drainage Department

[5] City of Bryan Comprehensive Plan, 2016

HOUSEHOLD SIZE

Household size is used to project population over the planning horizon. Figure 51 shows household size assumptions by type of unit.

Figure 51. Household Size

Type of Unit	Persons	Housing Units	PPHU	Households	PPHH	Housing Mix	Vacancy
Single Family [1]	55,278	20,220	2.73	18,659	2.96	64%	8%
Multifamily [2]	21,441	11,557	1.86	10,310	2.08	36%	12%
Total	76,719	31,777	2.41	28,969	2.65		10%

Note: Single family includes Single Family Detached, Attached, and Mobile Homes.

Note: Multifamily includes structures with 2+ Units.

Source: U.S. Census Bureau 2012-2016 American Community Survey 5-Yr Estimates

EMPLOYEE DENSITY FACTORS

Employees per 1,000 square feet of nonresidential space are used to project future employment. Projected nonresidential square footage by type of development is converted to employment by using the employee density figures highlighted found in the Institute of Transportation Engineers' Trip Generation (2017), Figure 52. Shopping Center demand factors are applied to retail development in the model, General Office is applied to office development, Manufacturing is applied to Industrial, and Elementary School is applied to Institutional.

Figure 52. Floor Area per Employee

ITE Code	Land Use	Demand Unit	Wkdy Trip Ends Per Dmd Unit	Wkdy Trip Ends Per Employee	Emp Per Dmd Unit	Sq Ft Per Emp
110	Light Industrial	1,000 Sq Ft	4.96	3.05	1.63	615
130	Industrial Park	1,000 Sq Ft	3.37	2.91	1.16	864
140	Manufacturing	1,000 Sq Ft	3.93	2.47	1.59	628
150	Warehousing	1,000 Sq Ft	1.74	5.05	0.34	2,902
254	Assisted Living	bed	2.60	4.24	0.61	na
320	Motel	room	3.35	25.17	0.13	na
520	Elementary School	1,000 Sq Ft	19.52	21.00	0.93	1,076
530	High School	1,000 Sq Ft	14.07	22.25	0.63	1,581
540	Community College	student	1.15	14.61	0.08	na
550	University/College	student	1.56	8.89	0.18	na
565	Day Care	student	4.09	21.38	0.19	na
610	Hospital	1,000 Sq Ft	10.72	3.79	2.83	354
620	Nursing Home	1,000 Sq Ft	6.64	2.91	2.28	438
710	General Office (avg size)	1,000 Sq Ft	9.74	3.28	2.97	337
760	Research & Dev Center	1,000 Sq Ft	11.26	3.29	3.42	292
770	Business Park	1,000 Sq Ft	12.44	4.04	3.08	325
820	Shopping Center (avg size)	1,000 Sq Ft	37.75	16.11	2.34	427
310	Hotel	Room	8.36	14.34	0.58	1,715

Source: Trip Generation, Institute of Transportation Engineers, 10th Edition (2017).

VEHICLE TRIPS

Vehicle trips are used to project some operating and capital expenditures in the fiscal impact analysis. Average Weekday Vehicle Trip Ends by type of development (or trip generation rates) are from the reference manual, *Trip Generation, 10TH Edition*, published by the Institute of Transportation Engineers (ITE), in 2017. A “trip end” represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). Trip rates have been adjusted to avoid overestimating the number of actual trips because one vehicle trip is counted in the trip rates of both the origination and destination points.

Residential Vehicle Trips

A customized trip rate is calculated for the single family and multifamily units in Bryan. In Figure 53, the most recent data from the American Community Survey is inputted into equations provided by the ITE to calculate the trip ends per housing unit factor. A single family unit is estimated to generate 7.4 trip ends on an average weekday and a multifamily unit is estimated to generate 7.2 trip ends on an average weekday.

Figure 53. Customized Residential Trip End Rates

	Vehicles Available (1)	Households (2)			Vehicles per Household by Tenure
		Single Family	Multifamily Units	Total HHs	
Owner-occupied	27,425	13,272	5,387	18,659	1.47
Renter-occupied	21,923	121	10,189	10,310	2.13
TOTAL	49,348	13,393	15,576	28,969	1.70
Housing Units (6) =>		20,220	11,557	31,777	
Persons per Housing Unit =>		2.73	1.86	2.41	

	Persons (3)	Trip Ends (4)	Vehicles by Type of Housing	Trip Ends (5)	Average Trip Ends	Trip Ends per Housing Unit
Single Family	55,278	169,307	19,764	129,601	149,454	7.40
Multifamily	21,441	49,019	29,584	116,853	82,936	7.20
TOTAL	76,719	218,326	49,348	246,453	232,390	7.30

(1) Vehicles available by tenure from Table B25046, 2012-2016 American Community Survey 5-Year Estimates.

(2) Households by tenure and units in structure from Table B25032, American Community Survey, 2012-2016.

(3) Persons by units in structure from Table B25033, American Community Survey, 2012-2016.

(4) Vehicle trips ends based on persons using formulas from *Trip Generation* (ITE 2017). For single family housing (ITE 210), the fitted curve equation is $EXP(0.89*LN(persons)+1.72)$. To approximate the average population of the ITE studies, persons were divided by 286 and the equation result multiplied by 286. For multifamily housing (ITE 221), the fitted curve equation is $(2.29*persons)-81.02$.

(5) Vehicle trip ends based on vehicles available using formulas from *Trip Generation* (ITE 2017). For single family housing (ITE 210), the fitted curve equation is $EXP(0.99*LN(vehicles)+1.93)$. To approximate the average number of vehicles in the ITE studies, vehicles available were divided by 485 and the equation result multiplied by 485. For multifamily housing (ITE 220), the fitted curve equation is $(3.94*vehicles)+293.58$ (ITE 2012).

(6) Housing units from Table B25024, American Community Survey, 2012-2016.

Residential Vehicle Trips Adjustment Factors

A vehicle trip end is the out-bound or in-bound leg of a vehicle trip. As a result, so to not double count trips, a standard 50 percent adjustment is applied to trip ends to calculate a vehicle trip. For example, the out-bound trip from a person’s home to work is attributed to the housing unit and the trip from work back home is attributed to the employer.

However, an additional adjustment is necessary to capture City residents’ work bound trips that are outside of the City. The trip adjustment factor includes two components. According to the National Household Travel Survey (2009), home-based work trips are typically 31 percent of out-bound trips (which are 50 percent of all trip ends). Also, utilizing the most recent data from the Census Bureau's web application "OnTheMap", 68 percent of Bryan workers travel outside the City for work. In combination, these factors account for 11 percent of additional production trips ($0.31 \times 0.50 \times 0.68 = 0.11$). Shown in Figure 54, the total adjustment factor for residential housing units includes attraction trips (50 percent of trip ends) plus the journey-to-work commuting adjustment (11 percent of production trips) for a total of 61 percent.

Figure 54. Trip Adjustment Factor for Commuters

Employed Bryan Residents (2015)	33,828
Bryan Residents Working in the City (2015)	10,836
Bryan Residents Commuting Outside of the City for Work	22,992
Percent Commuting out of the City	68%
Additional Production Trips	11%
Standard Trip Adjustment Factor	50%
Residential Trip Adjustment Factor	61%

Source: U.S. Census, OnTheMap Application, 2015

Nonresidential Vehicle Trips

Vehicle trip generation for nonresidential land uses are calculated by using ITE’s average daily trip end rates and adjustment factors found in their recently published 10th edition of Trip Generation. To estimate the trip generation in the City of Bryan, the weekday trip end per 1,000 square feet factors highlighted in Figure 52 are used.

A simple factor of 50 percent is applied to the Office, Industrial, and Institutional land uses. The Retail category has a trip factor of less than 50 percent because this type of development attracts vehicles as they pass-by on arterial and collector roads. For example, when someone stops at a convenience store on their way home from work, the convenience store is not their primary destination.

Base Year Vehicle Trip Totals

Trip rates and adjustment factors are shown in the figure. Using trips generated from single family units as an example, the formula is as follows: 25,172 units x 7.40 vehicle trips per unit x 61% adjustment = 113,627. As shown in Figure 55, residential development accounts for an estimated 50 percent of total daily trips and nonresidential development accounts for an additional 50 percent.

Figure 55. Vehicle Trips

Residential Vehicle Trips on an Average Weekday		
<i>Residential Units</i>		
Single Family	25,172	
Multifamily	13,909	
<i>Average Weekday Vehicles Trip Ends Per Unit [1]</i>		
Single Family	7.40	61%
Multifamily	7.20	61%
<i>Residential Vehicle Trip Ends on an Average Weekday</i>		
Single Family	113,627	
Multifamily	61,088	
TOTAL RESIDENTIAL TRIPS	174,715	50%
Nonresidential Vehicle Trips on an Average Weekday		
<i>Nonresidential Gross Floor Area (1,000 sq. ft.) [2]</i>		
Office	5,534	
Retail	3,668	
Industrial	5,122	
Institutional	9,039	
<i>Average Weekday Vehicle Trip Ends per 1,000 Sq. Ft. [1]</i>		
Office	9.74	50%
Retail	37.75	38%
Industrial	3.93	50%
Institutional	19.52	50%
<i>Nonresidential Vehicle Trips on an Average Weekday</i>		
Office	26,952	
Retail	52,621	
Industrial	10,065	
Institutional	88,221	
TOTAL NONRESIDENTIAL TRIPS	177,858	50%
TOTAL TRIPS	352,573	100%
Source: Trip rates are from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 2017.		

FUNCTIONAL POPULATION

Both residential and nonresidential developments increase the demand on City services and facilities. To calculate the proportional share between residential and nonresidential demand on service and facilities, a functional population approach is used. The functional population approach allocates the cost of the facilities to residential and nonresidential development based on the activity of residents and workers in the City through the 24 hours in a day.

Residents that do not work are assigned 20 hours per day to residential development and 4 hours per day to nonresidential development (annualized averages). Residents that work in the City of Bryan are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents that work outside the City are assigned 14 hours to residential development, the remaining hours in the day are assumed to be spent outside of the City working. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2015 functional population data, residential development accounts for 71 percent of the functional population, while nonresidential development accounts for 29 percent, see Figure 56.

Figure 56. City of Bryan Functional Population

	Demand Units in 2015	Demand Hours/Day	Person Hours	Proportionate Share
Residential				
Estimated Residents in Bryan [1]	75,616			
Residents Not Working	55% 41,788	20	835,760	
Workers Living in Bryan [2]	45% 33,828			
Residents Working in Bryan [2]	32% 10,836	14	151,704	
Residents Working outside of Bryan	22,992	14	321,888	
	Residential Subtotal		1,309,352	71%
Nonresidential				
Non-Working Residents	41,788	4	167,152	
Jobs Located in Bryan [2]	36,033			
Residents Working in Bryan	10,836	10	108,360	
Non-Resident Workers Bryan	25,197	10	251,970	
	Nonresidential Subtotal		527,482	29%
	TOTAL		1,836,834	100%

[1] Source: U.S. Census Bureau 2011-2015 American Community Survey 5-Yr Estimates

[2] Source: US Census, OnTheMap Application

POLICE CALLS FOR SERVICE

A custom methodology is used to allocate police costs based on an analysis of calls for service in the City of Bryan. TischlerBise analyzed call data from 2016.

As shown in Figure 56, 71 percent of the functional population in the City is attributed to residential purposes and 29 percent of the functional population is attributed to nonresidential purposes. These factors are used to allocate costs to residential and nonresidential land uses. This percentage split is used to allocate the total police calls. In 2016, there was a total of 65,047 calls for service to the Bryan Police Department, 71 percent (or 46,368 calls) is attributed to residential development and 29 percent (or 18,679 calls) is attributed to nonresidential development.

To project future Police calls for service from new development, the above data is used to determine a call per person and call per nonresidential trip. This methodology seeks to capture demand for services from both residential and nonresidential development. Since specific records on calls for service by type of nonresidential land use is not available, *vehicle trips by type of nonresidential land use are utilized as a realistic proxy*. This methodology reflects that the greatest number of calls for service on a per square foot basis. If calls for service were allocated on a per employee basis, office uses would generate the greatest number of calls due to its high employment density, which is contrary to actual experience.

Shown in Figure 57, to find the residential police demand factor, the City’s population is applied to the total residential calls for service to find a level of service of 0.53 calls per person. The number of nonresidential vehicle trips is applied to the total nonresidential calls for service to find a level of service of 0.11 calls per nonresidential trip. These factors are then applied to projected population and nonresidential vehicle trips in each growth scenario to project new Police calls for service.

Figure 57. Police Service Call Demand Factors

	<i>City of Bryan</i>
TOTAL CALLS FOR SERVICE	65,047
Total Residential Calls	46,368
Population	87,079
Call per person	0.53
Total Nonresidential Calls	18,679
Total Nonresidential Trips	177,858
Call per nonresidential trip	0.11

Source: 2016 BPD Annual Report

FIRE CALLS FOR SERVICE

As shown in Figure 56, in 2017, the Fire Department received 11,979 calls for service. Of the total, 63 percent (or 7,578 calls) were attributed to residential development and 37 percent (or 4,401 calls) were attributed to nonresidential development.

To project future Fire calls for service from new development, the above data is used to determine a call per person and call per nonresidential trip. This methodology seeks to capture demand for services from both residential and nonresidential development. Since specific records on calls for service by type of nonresidential land use is not available, *vehicle trips by type of nonresidential land use are utilized as a realistic proxy*. This methodology reflects that the greatest number of calls for service on a per square foot basis. If calls for service were allocated on a per employee basis, office uses would generate the greatest number of calls due to its high employment density, which is contrary to actual experience.

Shown in Figure 58, to find the residential fire demand factor, the City's population is applied to the total residential calls for service to find a level of service of 0.087 calls per person. The number of nonresidential vehicle trips is applied to the total nonresidential calls for service to find a level of service of 0.025 calls per nonresidential trip. These factors are then applied to projected population and nonresidential vehicle trips in each growth scenario to project new Fire calls for service.

Figure 58. Fire Department Demand Factors

FIRE/RESCUE DATA INPUT AREA		
Fire/Rescue Calls for Service Data [1] Land Use	FIRE/EMS	
	2017 Fire Calls	Percent
Residential Land Uses	7,578	63%
Nonresidential Land Uses	4,401	37%
TOTAL CALLS FOR SERVICE	11,979	100%
Current Population		87,079
Current Nonresidential Vehicle Trips		177,858
Calls per Capita		0.087
Calls per Nonres. Trip		0.025

Source: City of Bryan Fire Department

GROWTH PROJECTIONS

The following figures list the annual cumulative growth of residential and nonresidential development in each Fiscal Analysis Zone (FAZ) for each scenario. The vehicle trip generation for each FAZ is listed as well. The vehicle trip generation is calculated by combining the residential and nonresidential development with the Institute of Transportation Engineers' vehicle trip end factors and trip adjustment factors found above in the Vehicle Trip section of the Appendix.

Figure 59. Scenario 1 Fiscal Analysis Zone Growth Projections

Fiscal Analysis Zone	5-Year Increments								
	2018	2019	2020	2021	2022	2023	2028	2033	2038
FAZ 1									
Residential									
Population	60	60	60	60	60	60	60	3,527	3,527
Single Family (Units)	22	22	22	22	22	22	22	202	202
Multifamily (Units)	0	0	0	0	0	0	0	1,600	1,600
Subtotal Housing	22	22	22	22	22	22	22	1,802	1,802
Nonresidential									
Jobs	264	264	264	264	264	264	264	534	534
Office (Sq. Ft.)	0	0	0	0	0	0	0	23,000	23,000
Retail (Sq. Ft.)	7,700	7,700	7,700	7,700	7,700	7,700	7,700	30,700	30,700
Industrial (Sq. Ft.)	154,500	154,500	154,500	154,500	154,500	154,500	154,500	218,500	218,500
Subtotal (Sq. Ft.)	162,200	162,200	162,200	162,200	162,200	162,200	162,200	272,200	272,200
FAZ 2									
Residential									
Population	235	235	235	235	235	235	235	235	235
Single Family (Units)	86	86	86	86	86	86	86	86	86
Multifamily (Units)	0	0	0	0	0	0	0	0	0
Subtotal Housing	86	86	86	86	86	86	86	86	86
Nonresidential									
Jobs	317	342	368	393	419	444	444	444	444
Office (Sq. Ft.)	0	0	0	0	0	0	0	0	0
Retail (Sq. Ft.)	0	0	0	0	0	0	0	0	0
Industrial (Sq. Ft.)	199,150	215,150	231,150	247,150	263,150	279,150	279,150	279,150	279,150
Subtotal (Sq. Ft.)	199,150	215,150	231,150	247,150	263,150	279,150	279,150	279,150	279,150
FAZ 3									
Residential									
Population	41	41	41	41	41	41	532	532	532
Single Family (Units)	15	15	15	15	15	15	195	195	195
Multifamily (Units)	0	0	0	0	0	0	0	0	0
Subtotal Housing	15	15	15	15	15	15	195	195	195
Nonresidential									
Jobs	0	0	0	0	0	0	375	375	375
Office (Sq. Ft.)	0	0	0	0	0	0	0	0	0
Retail (Sq. Ft.)	0	0	0	0	0	0	160,000	160,000	160,000
Industrial (Sq. Ft.)	0	0	0	0	0	0	0	0	0
Subtotal (Sq. Ft.)	0	0	0	0	0	0	160,000	160,000	160,000
FAZ 4									
Residential									
Population	339	1,422	2,506	3,590	4,674	5,758	5,758	5,758	5,758
Single Family (Units)	124	412	700	988	1,276	1,564	1,564	1,564	1,564
Multifamily (Units)	0	160	320	480	640	800	800	800	800
Subtotal Housing	124	572	1,020	1,468	1,916	2,364	2,364	2,364	2,364
Nonresidential									
Jobs	0	498	995	1,493	1,991	2,488	2,488	2,488	2,488
Office (Sq. Ft.)	0	12,000	24,000	36,000	48,000	60,000	60,000	60,000	60,000
Retail (Sq. Ft.)	0	132,000	264,000	396,000	528,000	660,000	660,000	660,000	660,000
Industrial (Sq. Ft.)	0	96,000	192,000	288,000	384,000	480,000	480,000	480,000	480,000
Subtotal (Sq. Ft.)	0	240,000	480,000	720,000	960,000	1,200,000	1,200,000	1,200,000	1,200,000

Source: Trip Generation, Institute of Transportation Engineers, 10th Edition (2017); TischlerBise analysis

Figure 60. Scenario 1 Total Growth Projections

Total Scenario 1	5-Year Increments								
	2018	2019	2020	2021	2022	2023	2028	2033	2038
Residential									
Population	674	1,758	2,842	3,926	5,010	6,094	6,585	10,052	10,052
Single Family (Units)	247	535	823	1,111	1,399	1,687	1,867	2,047	2,047
Multifamily (Units)	0	160	320	480	640	800	800	2,400	2,400
Grand Total Housing	247	695	1,143	1,591	2,039	2,487	2,667	4,447	4,447
Nonresidential									
Jobs	581	1,104	1,627	2,150	2,673	3,196	3,571	3,842	3,842
Office (Sq. Ft.)	0	12,000	24,000	36,000	48,000	60,000	60,000	83,000	83,000
Retail (Sq. Ft.)	7,700	139,700	271,700	403,700	535,700	667,700	827,700	850,700	850,700
Industrial (Sq. Ft.)	353,650	465,650	577,650	689,650	801,650	913,650	913,650	977,650	977,650
Grand Total (Sq. Ft.)	361,350	617,350	873,350	1,129,350	1,385,350	1,641,350	1,801,350	1,911,350	1,911,350

Source: Trip Generation, Institute of Transportation Engineers, 10th Edition (2017); TischlerBise analysis

Figure 61. Scenario 1 Vehicle Trip Generation

Fiscal Analysis Zone	5-Year Increments								
	2018	2019	2020	2021	2022	2023	2028	2033	2038
FAZ 1									
Vehicle Trips									
Residential	99	99	99	99	99	99	99	7,939	7,939
Nonresidential	414	414	414	414	414	414	414	982	982
Vehicle Trip Subtotal	513	513	513	513	513	513	513	8,921	8,921
FAZ 2									
Vehicle Trips									
Residential	388	388	388	388	388	388	388	388	388
Nonresidential	391	423	454	486	517	549	549	549	549
Vehicle Trip Subtotal	780	811	842	874	905	937	937	937	937
FAZ 3									
Vehicle Trips									
Residential	68	68	68	68	68	68	880	880	880
Nonresidential	0	0	0	0	0	0	2,295	2,295	2,295
Vehicle Trip Subtotal	68	68	68	68	68	68	3,175	3,175	3,175
FAZ 4									
Vehicle Trips									
Residential	560	2,562	4,565	6,568	8,571	10,573	10,573	10,573	10,573
Nonresidential	0	2,141	4,281	6,422	8,562	10,703	10,703	10,703	10,703
Vehicle Trip Subtotal	560	4,703	8,846	12,990	17,133	21,277	21,277	21,277	21,277
Total Scenario 1									
Vehicle Trips									
Residential	1,115	3,118	5,120	7,123	9,126	11,129	11,941	19,781	19,781
Nonresidential	805	2,977	5,149	7,322	9,494	11,666	13,961	14,529	14,529
Vehicle Trip Grand Total	1,920	6,095	10,270	14,445	18,620	22,794	25,902	34,310	34,310

Source: Trip Generation, Institute of Transportation Engineers, 10th Edition (2017); TischlerBise analysis

Figure 62. Scenario 2 Fiscal Analysis Zone Growth Projections

Fiscal Analysis Zone	5-Year Increments								
	2018	2019	2020	2021	2022	2023	2028	2033	2038
FAZ 1									
Residential									
Population	60	60	60	60	60	60	60	2,039	2,039
Single Family (Units)	22	22	22	22	22	22	22	202	202
Multifamily (Units)	0	0	0	0	0	0	0	800	800
Subtotal Housing	22	22	22	22	22	22	22	1,002	1,002
Nonresidential									
Jobs	264	264	264	264	264	264	264	752	752
Office (Sq. Ft.)	0	0	0	0	0	0	0	0	0
Retail (Sq. Ft.)	7,700	7,700	7,700	7,700	7,700	7,700	7,700	33,300	33,300
Industrial (Sq. Ft.)	154,500	154,500	154,500	154,500	154,500	154,500	154,500	423,300	423,300
Subtotal (Sq. Ft.)	162,200	162,200	162,200	162,200	162,200	162,200	162,200	456,600	456,600
FAZ 2									
Residential									
Population	235	235	235	235	235	235	235	235	235
Single Family (Units)	86	86	86	86	86	86	86	86	86
Multifamily (Units)	0	0	0	0	0	0	0	0	0
Subtotal Housing	86	86	86	86	86	86	86	86	86
Nonresidential									
Jobs	317	342	368	393	419	444	444	444	444
Office (Sq. Ft.)	0	0	0	0	0	0	0	0	0
Retail (Sq. Ft.)	0	0	0	0	0	0	0	0	0
Industrial (Sq. Ft.)	199,150	215,150	231,150	247,150	263,150	279,150	279,150	279,150	279,150
Subtotal (Sq. Ft.)	199,150	215,150	231,150	247,150	263,150	279,150	279,150	279,150	279,150
FAZ 3									
Residential									
Population	41	41	41	41	41	41	532	532	532
Single Family (Units)	15	15	15	15	15	15	195	195	195
Multifamily (Units)	0	0	0	0	0	0	0	0	0
Subtotal Housing	15	15	15	15	15	15	195	195	195
Nonresidential									
Jobs	0	0	0	0	0	0	375	375	375
Office (Sq. Ft.)	0	0	0	0	0	0	0	0	0
Retail (Sq. Ft.)	0	0	0	0	0	0	160,000	160,000	160,000
Industrial (Sq. Ft.)	0	0	0	0	0	0	0	0	0
Subtotal (Sq. Ft.)	0	0	0	0	0	0	160,000	160,000	160,000
FAZ 4									
Residential									
Population	339	1,422	2,506	3,590	4,674	5,758	5,758	5,758	5,758
Single Family (Units)	124	412	700	988	1,276	1,564	1,564	1,564	1,564
Multifamily (Units)	0	160	320	480	640	800	800	800	800
Subtotal Housing	124	572	1,020	1,468	1,916	2,364	2,364	2,364	2,364
Nonresidential									
Jobs	0	498	995	1,493	1,991	2,488	2,488	2,488	2,488
Office (Sq. Ft.)	0	12,000	24,000	36,000	48,000	60,000	60,000	60,000	60,000
Retail (Sq. Ft.)	0	132,000	264,000	396,000	528,000	660,000	660,000	660,000	660,000
Industrial (Sq. Ft.)	0	96,000	192,000	288,000	384,000	480,000	480,000	480,000	480,000
Subtotal (Sq. Ft.)	0	240,000	480,000	720,000	960,000	1,200,000	1,200,000	1,200,000	1,200,000

Source: Trip Generation, Institute of Transportation Engineers, 10th Edition (2017); TischlerBise analysis

Figure 63. Scenario 2 Total Growth Projections

Total Scenario 2	5-Year Increments								
	2018	2019	2020	2021	2022	2023	2028	2033	2038
Residential									
Population	674	1,758	2,842	3,926	5,010	6,094	6,585	8,564	8,564
Single Family (Units)	247	535	823	1,111	1,399	1,687	1,867	2,047	2,047
Multifamily (Units)	0	160	320	480	640	800	800	1,600	1,600
Grand Total Housing	247	695	1,143	1,591	2,039	2,487	2,667	3,647	3,647
Nonresidential									
Jobs	581	1,104	1,627	2,150	2,673	3,196	3,571	4,059	4,059
Office (Sq. Ft.)	0	12,000	24,000	36,000	48,000	60,000	60,000	60,000	60,000
Retail (Sq. Ft.)	7,700	139,700	271,700	403,700	535,700	667,700	827,700	853,300	853,300
Industrial (Sq. Ft.)	353,650	465,650	577,650	689,650	801,650	913,650	913,650	1,182,450	1,182,450
Grand Total (Sq. Ft.)	361,350	617,350	873,350	1,129,350	1,385,350	1,641,350	1,801,350	2,095,750	2,095,750

Source: Trip Generation, Institute of Transportation Engineers, 10th Edition (2017); TischlerBise analysis

Figure 64. Scenario 2 Vehicle Trip Generation

Fiscal Analysis Zone	5-Year Increments								
	2018	2019	2020	2021	2022	2023	2028	2033	2038
FAZ 1									
Vehicle Trips									
Residential	99	99	99	99	99	99	99	4,425	4,425
Nonresidential	414	414	414	414	414	414	414	1,309	1,309
Vehicle Trip Subtotal	513	513	513	513	513	513	513	5,735	5,735
FAZ 2									
Vehicle Trips									
Residential	388	388	388	388	388	388	388	388	388
Nonresidential	391	423	454	486	517	549	549	549	549
Vehicle Trip Subtotal	780	811	842	874	905	937	937	937	937
FAZ 3									
Vehicle Trips									
Residential	68	68	68	68	68	68	880	880	880
Nonresidential	0	0	0	0	0	0	2,295	2,295	2,295
Vehicle Trip Subtotal	68	68	68	68	68	68	3,175	3,175	3,175
FAZ 4									
Vehicle Trips									
Residential	560	2,562	4,565	6,568	8,571	10,573	10,573	10,573	10,573
Nonresidential	0	2,141	4,281	6,422	8,562	10,703	10,703	10,703	10,703
Vehicle Trip Subtotal	560	4,703	8,846	12,990	17,133	21,277	21,277	21,277	21,277
Total Scenario 2									
Vehicle Trips									
Residential	1,115	3,118	5,120	7,123	9,126	11,129	11,941	16,267	16,267
Nonresidential	805	2,977	5,149	7,322	9,494	11,666	13,961	14,856	14,856
Vehicle Trip Grand Total	1,920	6,095	10,270	14,445	18,620	22,794	25,902	31,124	31,124

Source: Trip Generation, Institute of Transportation Engineers, 10th Edition (2017); TischlerBise analysis

Figure 65. Scenario 3 Fiscal Analysis Zone Growth Projections

Fiscal Analysis Zone	5-Year Increments								
	2018	2019	2020	2021	2022	2023	2028	2033	2038
FAZ 1									
Residential									
Population	60	60	60	60	60	60	60	2,039	2,039
Single Family (Units)	22	22	22	22	22	22	22	202	202
Multifamily (Units)	0	0	0	0	0	0	0	800	800
Subtotal Housing	22	22	22	22	22	22	22	1,002	1,002
Nonresidential									
Jobs	264	264	264	264	264	264	264	547	547
Office (Sq. Ft.)	0	0	0	0	0	0	0	15,000	15,000
Retail (Sq. Ft.)	7,700	7,700	7,700	7,700	7,700	7,700	7,700	22,700	22,700
Industrial (Sq. Ft.)	154,500	154,500	154,500	154,500	154,500	154,500	154,500	194,500	194,500
Subtotal (Sq. Ft.)	162,200	162,200	162,200	162,200	162,200	162,200	162,200	232,200	232,200
FAZ 2									
Residential									
Population	235	235	235	235	235	235	235	235	235
Single Family (Units)	86	86	86	86	86	86	86	86	86
Multifamily (Units)	0	0	0	0	0	0	0	0	0
Subtotal Housing	86	86	86	86	86	86	86	86	86
Nonresidential									
Jobs	317	342	368	393	419	444	444	444	444
Office (Sq. Ft.)	0	0	0	0	0	0	0	0	0
Retail (Sq. Ft.)	0	0	0	0	0	0	0	0	0
Industrial (Sq. Ft.)	199,150	215,150	231,150	247,150	263,150	279,150	279,150	279,150	279,150
Subtotal (Sq. Ft.)	199,150	215,150	231,150	247,150	263,150	279,150	279,150	279,150	279,150
FAZ 3									
Residential									
Population	41	41	41	41	41	41	532	532	532
Single Family (Units)	15	15	15	15	15	15	195	195	195
Multifamily (Units)	0	0	0	0	0	0	0	0	0
Subtotal Housing	15	15	15	15	15	15	195	195	195
Nonresidential									
Jobs	0	0	0	0	0	0	375	375	375
Office (Sq. Ft.)	0	0	0	0	0	0	0	0	0
Retail (Sq. Ft.)	0	0	0	0	0	0	160,000	160,000	160,000
Industrial (Sq. Ft.)	0	0	0	0	0	0	0	0	0
Subtotal (Sq. Ft.)	0	0	0	0	0	0	160,000	160,000	160,000
FAZ 4									
Residential									
Population	339	1,422	2,506	3,590	4,674	5,758	5,758	5,758	5,758
Single Family (Units)	124	412	700	988	1,276	1,564	1,564	1,564	1,564
Multifamily (Units)	0	160	320	480	640	800	800	800	800
Subtotal Housing	124	572	1,020	1,468	1,916	2,364	2,364	2,364	2,364
Nonresidential									
Jobs	0	498	995	1,493	1,991	2,488	2,488	2,488	2,488
Office (Sq. Ft.)	0	12,000	24,000	36,000	48,000	60,000	60,000	60,000	60,000
Retail (Sq. Ft.)	0	132,000	264,000	396,000	528,000	660,000	660,000	660,000	660,000
Industrial (Sq. Ft.)	0	96,000	192,000	288,000	384,000	480,000	480,000	480,000	480,000
Subtotal (Sq. Ft.)	0	240,000	480,000	720,000	960,000	1,200,000	1,200,000	1,200,000	1,200,000

Source: Trip Generation, Institute of Transportation Engineers, 10th Edition (2017); TischlerBise analysis

Figure 66. Scenario 3 Total Growth Projections

Total Scenario 3	5-Year Increments								
	2018	2019	2020	2021	2022	2023	2028	2033	2038
Residential									
Population	674	1,758	2,842	3,926	5,010	6,094	6,585	8,564	8,564
Single Family (Units)	247	535	823	1,111	1,399	1,687	1,867	2,047	2,047
Multifamily (Units)	0	160	320	480	640	800	800	1,600	1,600
Grand Total Housing	247	695	1,143	1,591	2,039	2,487	2,667	3,647	3,647
Nonresidential									
Jobs	581	1,104	1,627	2,150	2,673	3,196	3,571	3,854	3,854
Office (Sq. Ft.)	0	12,000	24,000	36,000	48,000	60,000	60,000	75,000	75,000
Retail (Sq. Ft.)	7,700	139,700	271,700	403,700	535,700	667,700	827,700	842,700	842,700
Industrial (Sq. Ft.)	353,650	465,650	577,650	689,650	801,650	913,650	913,650	953,650	953,650
Grand Total (Sq. Ft.)	361,350	617,350	873,350	1,129,350	1,385,350	1,641,350	1,801,350	1,871,350	1,871,350

Source: Trip Generation, Institute of Transportation Engineers, 10th Edition (2017); TischlerBise analysis

Figure 67. Scenario 3 Vehicle Trip Generation

Fiscal Analysis Zone	5-Year Increments								
	2018	2019	2020	2021	2022	2023	2028	2033	2038
FAZ 1									
Vehicle Trips									
Residential	99	99	99	99	99	99	99	4,425	4,425
Nonresidential	414	414	414	414	414	414	414	781	781
Vehicle Trip Subtotal	513	513	513	513	513	513	513	5,206	5,206
FAZ 2									
Vehicle Trips									
Residential	388	388	388	388	388	388	388	388	388
Nonresidential	391	423	454	486	517	549	549	549	549
Vehicle Trip Subtotal	780	811	842	874	905	937	937	937	937
FAZ 3									
Vehicle Trips									
Residential	68	68	68	68	68	68	880	880	880
Nonresidential	0	0	0	0	0	0	2,295	2,295	2,295
Vehicle Trip Subtotal	68	68	68	68	68	68	3,175	3,175	3,175
FAZ 4									
Vehicle Trips									
Residential	560	2,562	4,565	6,568	8,571	10,573	10,573	10,573	10,573
Nonresidential	0	2,141	4,281	6,422	8,562	10,703	10,703	10,703	10,703
Vehicle Trip Subtotal	560	4,703	8,846	12,990	17,133	21,277	21,277	21,277	21,277
Total Scenario 3									
Vehicle Trips									
Residential	1,115	3,118	5,120	7,123	9,126	11,129	11,941	16,267	16,267
Nonresidential	805	2,977	5,149	7,322	9,494	11,666	13,961	14,328	14,328
Vehicle Trip Grand Total	1,920	6,095	10,270	14,445	18,620	22,794	25,902	30,595	30,595

Source: Trip Generation, Institute of Transportation Engineers, 10th Edition (2017); TischlerBise analysis