Master Plan

San Antonio Innovation District for Science and Technology

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1. Project Introduction

The Texas Research and Technology Foundation (TRTF) is leading an effort to create an innovation district on the near Eastside of San Antonio. The innovation district is proposed to be located just outside the core of the city east of I-37. This area is well suited for attraction of development due to its proximity to the center of downtown. The area is also bounded by the historic Dignowity Park neighborhood and is adjacent to the growing River North/Broadway Corridor district. The area has the potential to attract development that can grow the presence of biomedical companies and research in a mix of historic buildings, adaptive reused buildings, and new development that is in the core of the San Antonio Region.

Traditional research campuses have traditionally been in large, dispersed formats that resemble suburban office parks. They have lacked a mixture of uses and amenities for workers and visitors. Recent trends in technology parks show an increasing interest in urban areas and many are moving to urban mixed-use environments centered around major research institutions, companies, and entertainment attractions.

TRTF and its partners are seeking to create an innovation district to leverage the VelocityTX campus, located at Houston Street and Cherry Street, and investments made by the public and private sectors. Central to the effort is the goal to foster collaboration across disciplines to expanding the region's biomedical job cluster. A common location that enables 'collision' among partners will generate greater creativity, productivity, and economic spin-off potential.

Collectively, TRTF and its partners recognize the opportunity to create development sites to attract capital, increase the level of commitment by regional and national partners, attract talent and a local high-tech workforce, and incorporate amenities—such as retail uses, transit service, mobility investments, and support institutions—that are co-located in and adjacent to the district. The Master Plan effort will:

1. Ensure that the fundamental concept of the innovation district—**Fostering Collaboration Across Sectors**—is incorporated in all elements of the district. This collaboration is central to achieving long-term benefit regarding inclusive growth, scientific discovery, technological advancement, attraction of talent, investment of capital, and economic spin-off.

2. Document **Fiscal and Economic Benefits**. The employers attracted and grown in the innovation district are expected to generate jobs for San Antonio residents and will elevate the wage levels for these new employees. Innovation districts can also foster inclusive growth by creating more economic opportunities for the communities they are located in. The district will also be major generator for tax revenue for the City of San Antonio, Bexar County, and the San Antonio Independent School District.

3. Provide a guide and **Action Plan** for TRTF and others to follow to develop the district. This Master Plan quantifies the magnitude for potential development in the district, identifies employment sectors with the greatest potential for expansion, identifies capital investments needed to support the district's growth, and provides a set of funding/financing tools that can be leveraged to support investment.

Overview of Texas Research and Technology Foundation

The Texas Research and Technology Foundation (TRTF) was founded by City and County elected officials, business and civic leaders, and spearheaded by General McDermott to further scientific research and development in bioscience in San Antonio. TRTF's primary focus is spurring economic development in the region in biomedicine and technology through the traditional channels of workforce development, attraction of industry, and entrepreneurship.

Through a major gift of land, the foundation established the Texas Research Park in 1986 on the western edge of the San Antonio community. TRTF in partnership with UT Health San Antonio established the Institute for Biotechnology at the park. The research campus grew over time adding new buildings to create space and labs for new bioscience companies.

TRTF made a strategic shift in its efforts in 2015 to better align its mission with the current approach to innovation. TRTF sold a large portion of the Texas Research Park and moved its efforts to the near Eastside of downtown San Antonio. In 2017, TRTF purchased the historic Merchants Ice building on Houston Street and built an initial phase of an urban innovation campus. The campus is anchored by the VelocityTX innovation hub. VelocityTX is a bioscience incubator and accelerator focused on supporting the creation and growth of bioscience startup companies. The efforts of VelocityTX are backed by a supporting McDermott Legacy Fund that provides pre-seed and venture capital for startup businesses. TRTF has also joined with the Alamo Angels to provide an angel investment fund to support companies at VelocityTX and in San Antonio. From these initial investments, the TRTF goal is to catalyze the growth of a larger bioscience innovation district and generate a substantial node of employment activity in the immediate area.

The VelocityTX Innovation Hub is home to the VelocityTX startup incubator program, the BioGlobal Accelerator program, and the offices of TRTF and Alamo Angels. Through the support of the McDermott Legacy Fund, TRTF has invested in and supports over 30 small bioscience and technology ventures. The campus is growing to provide space for private businesses and other support organizations. The campus is home to GenCure, a subsidiary of BioBridge Global, which provides lab space and services supporting manufacturing of biomedical products. Scorpion Biological Services is also a recent tenant to locate in the Merchants Ice Campus. The efforts of TRTF and its partners will continue to generate additional economic activity and needs the support of a larger district to be able to capitalize on the catalytic impacts of their efforts.

2. Innovation Economic Opportunities

San Antonio Economic Base

San Antonio's economic base has traditionally been driven by four main industries: Health Care, Military, Education, and Tourism. These industries account for over 40 percent of employment in Bexar County and captured most (64 percent) of the job growth over the past 20 years.

The economic base in Bexar County is growing and diversifying. Specific to research and development and biosciences, the growth industries are related to providing health care and scientific consulting services. This trend of service-oriented jobs is occurring despite the significant growth in the health care and the professional services industries overall.

TRTF's efforts and the innovation district strategy builds upon the traditional growth driving industries in Bexar County. The assets and jobs associated with these industries do have the potential to support increased innovation in biosciences.

- **Health Care** – The health care industry accounts for 148,000 jobs in Bexar County (18 percent of jobs). This industry grew by 67,000 jobs since 2000, which was 36 percent of job growth in Bexar County. The health care industry is anchored by the South Texas Medical Center, which is a major cluster of health care activities with 45 medical-related institutions including 12 hospitals and five specialty institutions.

- **Military** – San Antonio is known as Military City USA due to the large presence of military missions, the collective Joint Base San Antonio (JBSA) approach to management of multiple military installations/bases in the region, and a large population of veterans and retired military personnel. The US Army's Army North is also headquartered in San Antonio as part of the large JBSA effort. Army North conducts operations to support the US Northern Command focused on homeland defense and security. The region has several major military installations and missions. San Antonio is home to some of the U.S. military's major cybersecurity facilities including the 24th and 25th Air Force divisions, which provide key cybersecurity, intelligence, surveillance, and reconnaissance services for the Air Force. San Antonio is also home to NSA Texas centralized facility for the National Security Administration focused on cybersecurity operations. Central to TRTF's efforts is the concentration of military medicine missions and institutions. San Antonio is also home to major military health care services and research activities, many of which are located within the Brooks Army Medical Center located at Fort Sam Houston. The military health care and bioscience activities in San Antonio are described in more detail later in this report.

- **Education** – San Antonio is also a major regional hub for education services. The city has 31 higher education institutions with a total of more than 100,000 students. The universities and education institutions with bioscience education and research are detailed later in this report.

Wake Forest School of Medicine, Innovation Quarter Winston-Salem, NC

Workforce Conditions

The occupational conditions within the San Antonio-New Braunfels MSA were evaluated to highlight strengths and weaknesses in terms of the presence of occupations that can support bioscience and research and development activities. There are 64,620 jobs in the Healthcare Practitioner and Technical Occupations occupational category in the MSA. The MSA has a greater presence of these occupations than found nationally. The average annual wage for these occupations is $80,830, which is much greater than the average wages for the MSA. The MSA also has a higher than average concentration of clinical lab technologists and technicians and surgical technologists. The workers in these occupations potentially have skill sets that are compatible with research and development activities that are planned to occur in the innovation district. The Life, Physical, and Social Science occupation category has a smaller than average presence in the MSA. This is especially true when considering just the scientist occupation. However, the presence of military medicine missions and research institutions has a significant impact on the workforce in San Antonio, which may not be fully captured in employment/occupation data. The creation of an innovation district can help attract more of these professionals to the region by creating more opportunities to support military medicine research.

The Greater: SATX Regional Economic Partnership (Greater SATX) (formerly San Antonio Economic Development Foundation) and SA Works produce annual reports on the state of workforce for each target industry. The 2020 report for Bioscience found that there is a reported need for scientists, as 71 percent of respondents to their survey indicated the need to hire at least one scientist. The analysis completed within the report is summarized in **Table 1** and illustrates that the San Antonio region has a smaller presence of job postings for scientists and technicians in bioscience industries for most job types and associated education levels. It is likely there are many workers in San Antonio that have skills that are transferable to bioscience job needs, but these workers are currently working in more health service-oriented jobs. The lack of scientists is a potential barrier to attraction of research and development activities and companies hoping to commercialize military research in the region.

Table 1. Bioscience Workforce Evaluation

	JOB TITLE / EMSI GROUPING	LOCAL POSITIONS +/- NATIONAL AVG.	LOCAL WORKFORCE	5-YR GROWTH PROJECTION	LOCAL MEDIAN EARNINGS	NATIONAL MEDIAN EARNINGS	LOCAL POSTINGS/ MONTH	NATIONAL POSTINGS/ MONTH	TOP HIRING SECTOR	ENTRY-LEVEL ED.
SCIENTIST	Medical Scientists (Except Epidemiologists)	-67%	295	9.4%	$63K	$85K	32	67	Scientific R&D (42.1%)	Doctoral or Professional Degree
	Biological Scientists (All Other)	-50%	417	6%	$77K	$77K	6	16	Federal Government, Civilian (39.4%)	Bachelor's Degree
TECHNICIAN	Veterinary Technicians & Technologists	+55%	1,422	13%	$32K	$34K	17	12	Other Professional, Scientific & Technical Services (94%)	Associate's Degree
	Life, Physical & Social Scientists (All Other)	-51%	838	9%	$50K	$49K	50	61	Federal Government, Civilian (22.5%)	Associate's Degree
SPECIAL EMPHASIS	Biomedical Engineering Technicians	-17%	1,002	7%	$60K	$53K	37	44	Federal Government, Civilian (39.7%)	Associate's Degree
	Biomedical Engineers	-52%	71	7%	$88K	$88K	4	3	Scientific R&D Services (24.3%)	Bachelor's Degree
	Research Coordinators (Life, Physical & Social Sciences)	-44%	200	10%	$117K	$124K	46	62	Federal Government, Civilian (46.3%)	Bachelor's Degree

Source: SA Works; SAEDF

Regional Bioscience Ecosystem

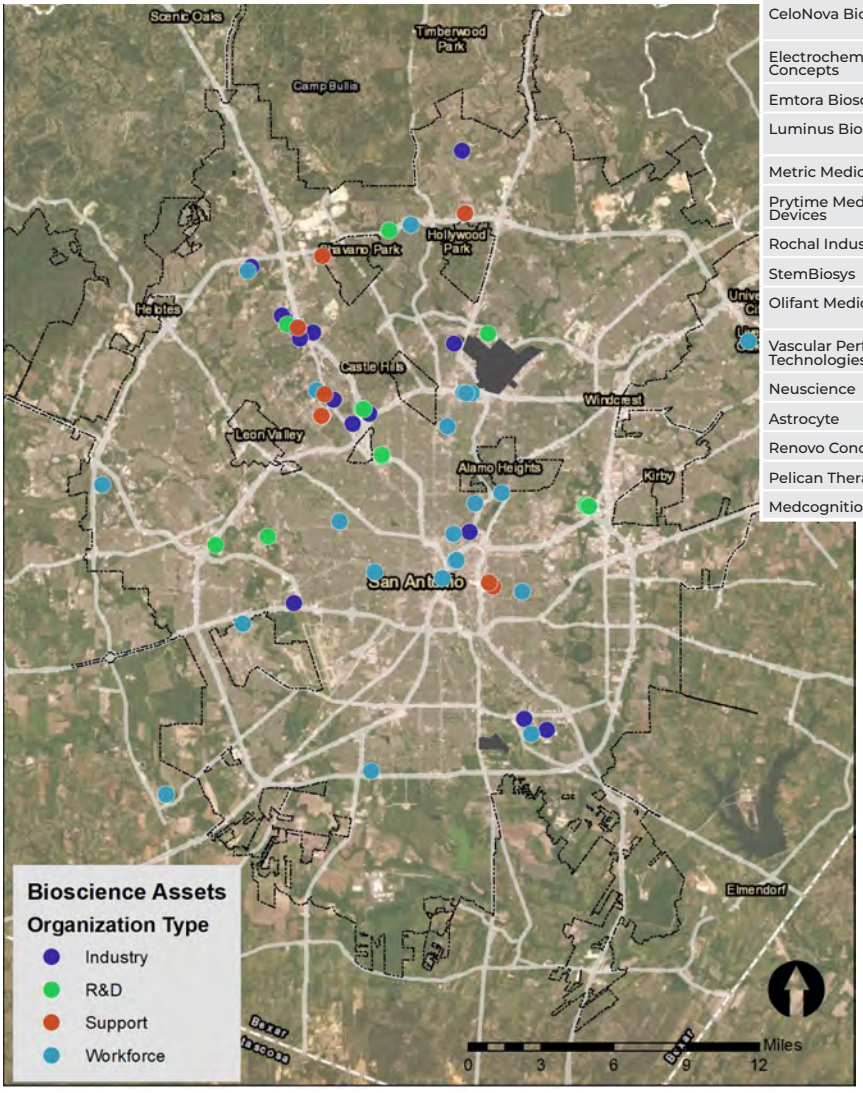
San Antonio has a robust bioscience ecosystem. The economic impact of the bioscience industry was $43.4 billion in 2019, according to the San Antonio Chamber of Commerce. One in every six employees in the MSA works in the health care and bioscience industry. This section provides a summary of the major assets in the bioscience ecosystem.

The 2020 Bioscience Demand Occupation and Education Report completed by SAEDF, and SA Works provides a comprehensive inventory of the bioscience assets in the region. The major assets are shown in **Table 2** organized within four categories: Industry, Research & Development (R&D), Workforce, and Support.

Table 2. San Antonio Bioscience Organization Assets

INDUSTRY	R&D	WORKFORCE	SUPPORT
Manufacturing	**For-Profit**	**Education**	**VC Funding**
Biomedical Enterprise	Brain Sentinel	High School	Fountainhead
Mission Pharmacal	Evestra	Health Careers	TRTF
Alamo Biologics	3M / KCI	The Centers for Applied Science and Tech (CAST) Schools	Targeted Technologies
Bone Bank	Seno Medical Devices, Inc.	Fox Tech	**Incubators**
Services	Xenex Disinfection Services	STEM Academy @ LEE	Incube Labs
Biomedical Dev. Corp.	Tissue Regenix	Higher Education	VelocityTX
Bridge PTS	**Nonprofit**	UTSA	Technovum
Cancer Insight	BioBridge Global	UTHSA	Grant Funding
INCELL Corporation	GenCure	University of the Incarnate Word	San Antonio Medical Foundation
Startups / Sm. Business	SwRI	Trinity University	SA Partnership in Precision Therapeutics
Bio2 Medical, Inc	Texas Biomed	St. Mary's University	**Economic Dev. & Advocacy**
BioAffinity	UTHSA	Our Lady of the Lake University	SAEDF & SA Works
Bluegrass Vascular	UTSA	Palo Alto College	City of San Antonio EDD
CeloNova Biosciences	**DoD**	Northwest Vista College	TRTF
Electrochemical Oxygen Concepts	US Army Institute of Surgical Research	St. Philips College	BiomedSA
Emtora Biosciences	Navy Medical Research	San Antonio College	The Health Cell
Luminus Biosciences	Air Force 59MDW	Northeast Lakeview College	
Metric Medical Devices		Staffing	
Prytime Medical Devices		Cherokee Nation	
Rochal Industries		Eagle Medical Services	
StemBiosys		Geneva Foundation	
Olifant Medical		Henry M Jackson Foundation	
Vascular Perfusion Technologies		Metis Foundation	
Neuscience		Parsons	
Astrocyte		Aerotek	
Renovo Concepts			
Pelican Therapeutics			
Medcognition			

Source: SA Works; SAEDF



The locations of the asset organizations and companies are shown in **Figure 1**. These assets are located throughout the City of San Antonio in the major employment areas (Regional Centers) in the community, with large concentrations in Downtown, the Medical Center, and UTSA regional center areas all connected by I-10.

Figure 1. Bioscience Assets by Type

Military Bioscience R&D

As noted above, San Antonio is home to several military installations and missions. Fort Sam Houston is home to the Brooke Army Medical Center (BAM-C), which is one of the largest military health centers in the US and the Department of Defense's (DOD) only Level 1 trauma center. The center is the location of several missions and efforts centered around a 425-bed military hospital.


Brooke Army Medical Center

In addition to the major military activities related to military health care, cybersecurity, and military training, San Antonio is also a major hub for military medical research and development. The Army, Navy and Air Force each have a military medical presence in San Antonio including research efforts.

US Army Institute of Surgical Research

US Army Medical Research and Development Command is responsible for medical research, development, and acquisition. The command is headquartered at Fort Detrick Maryland and has eight subordinate commands located throughout the world. The Command has six medical research laboratory commands including the Institute of Surgical Research (ISR) located at Fort Sam Houston. The mission of the command is to provide combat casualty care medical solutions and products with nine areas of focus, including combat burn care. The Army's sole facility for burn care is located within the ISR at Fort Sam Houston.

Naval Medical Research Unit

The Naval Medical Research Unit is located at Fort Sam Houston as well. Naval Medical Research is headquartered out of Maryland, like the Army, but the San Antonio lab is one of eight subordinate labs and focuses on combat casualty care and research.

Air Force 59th Medical Wing

The US Air Force 59th Medical Wing is the premier health care, medical education, research, and readiness wing in the Air Force. The 59th Medical Wing is located at Lackland Air Force Base in San Antonio. The 59th Medical Wing provides health care services to the Air Force out of the Wilford Hall Ambulatory Surgical Center and services 55,000 patients. The 59th Clinical Research Division is located at Lackland AFB. The Clinical Research Division is the largest clinical investigation program in the Air Force. The clinic supports research in vascular medicine, medical toxicology, emergency medicine, regenerative medicine, stem cell research, and dental post graduate research. The clinic also provides medical readiness training for combat care.

Military Collaboration Resources

Collaboration with the military to support research and commercialize products has been a focus for many organizations nationwide. There are entities and programs that provide support to private industry in their collaboration efforts. A few of the prominent efforts are summarized below.

- **METIS Foundation** – METIS Foundation is a nonprofit organization created to support the advancement of military medicine. The organization provides programming for the research community, facilitation of networking and collaboration in the military research community and of fundraising efforts to support research, and educational programs and new initiatives.
- **The Medical Technology Enterprise Consortium (MTEC)** (managed by Advanced Technology Inc based in South Carolina) is a nonprofit membership organization that assists with the tech transfer with the military (specifically around military purchasing of research). MTEC member benefits include:
  - Insight into government research needs
  - Information access on requirements of GOV
  - Access to federal market for small firms
  - Networking
  - Multiple funding avenues
  - New products and ideas website
  - Receiving products reviewed by the military
- **US Army Medical Command Office of Small Business Programs** – The office of small business programs aids small business trying to gain access to military service and research opportunities.
- **Small Business Innovation Research (SBIR) and Small Business Tech Transfer Program (STTR)** – The SBIR and STTR programs are referred to as "America's Seed Fund." The SBIR program promotes small businesses with tech innovation that support military missions. The program creates opportunities to respond to DoD announcements for needs related to scientific and technical problems. The STTR program funds cooperative R&D projects with small businesses partnered with affiliated research universities.
- **San Antonio Military Medical Innovation (SAMMI)** The City has recognized the potential for growth in commercialization of research completed in biosciences in the city—specifically, the potential opportunities related to military medical research. To support the military efforts and leverage opportunities, the City developed a military life science commercialization action plan in 2018. The action plan identified the need for greater coordination with the military to create opportunities and increase funding opportunities for businesses looking to commercialize military research or provide research and development services to the military. The City created a dedicated position focused on collaboration and launched the SAMMI fund to support research and commercialization activities. The effort has provided a start to the collective efforts to leverage the military

Example Partnership Model: Army Futures - Texas

The Army Applications Lab (AAL) Army Future Command in Austin, Texas was established in 2018 with a mission to partner with commercial businesses to create new solutions. The Army provides access, transparency, and capital to scale the private industry innovations and solutions for the Army. AAL provides various ways to fund projects to work with a variety of private companies. Research Development Test and Evaluation funding is programmed into the Congressional budget and allows AAL to fund projects up to prototype. The Special Program Awards for Required Technology Needs (SPARTN) unites Army Small Business Innovation Research (SBIR) funding and AAL's unique model to ensure sufficient incentives for private sector entities to work with the Army. Additional funding is available from Congress, if there is alignment with specific project needs and parameters.

Army Futures Command in Austin established a partnership with Texas A&M in 2019 to develop a technology facility that will create innovation solutions for soldiers and modernize the Army. The new facility, Bush Combat Development Complex, will be located at Texas A&M RELLIS campus in Bryan, Texas. The facility will cost $130 million and will include a combat development center, hypersonic tunnel, directed energy laser research, autonomous combat vehicle testing, a hub for evaluating AFC technology, and will also include a wide range of research labs. The Texas A&M Board of Regents is providing $80 million for the new facility and the Texas legislature is providing $50 million. Additionally, the Army Research Lab has granted $65 million to Texas A&M to do research at the new facility.

assets in the community. One of the greatest challenges found in development of the action plan was lack of funding, which prompted the SAMMI fund creation. Since then, more funding opportunities and community partners (like TRTF) have emerged to fill the funding role. The greatest need going forward to is increase collaboration and opportunities for partnerships with the military for local businesses and research institutions.

- **Defense Health Agency (DHA)** – The Defense Health Agency is a joint combat support agency in the Department of Defense that allows the Army, Navy, and Air Force to collaborate to provide medical services both during peacetime and wartime. The military medical facilities in San Antonio have officially unified as a "market" within DHA. This move will streamline medical service for the military and solidify military medical presence in the region.
- **Geneva Foundation** – The Geneva Foundation is a 501(c)3 nonprofit organization that advances military medicine through scientific research. The foundation is authorized to facilitate partnerships between military researchers and public or private organizations. Geneva has presence in San Antonio at the San Antonio Medical Center (SAMMC).
- **Henry Jackson Foundation (HJF)** – The Henry Jackson Foundation is a 501(c)3 nonprofit organization focused on advancing military medicine. The foundation serves clients by administering and supporting scientific programs that benefit military members.

Biomedical Research and Development

- **Texas Biomedical Research Institute (Texas Biomed)** – Texas Biomed is a leading private, nonprofit research institute located on the west side of San Antonio. The institute facility has nine biocontainment laboratories, including two CDC regulated labs, studying infectious diseases. The facility is also one of seven ethically operated National Primate Research Centers.
- **Southwest Research Institute (SwRI)** – SwRI, with 2,800 employees, is a major anchor of research and development for industrial and government clients. The independent, nonprofit organization focuses on the creation and transfer of technology in engineering and physical sciences.
- **UT Health San Antonio** – UT Health San Antonio is one of the nation's leading academic health and research institutions. The UT Health San Antonio Institute for Drug Development is one of the leading drug discovery programs in the country and a pioneer in cancer treatments. UTHSA performs basic and clinical research within each of the five schools (Medicine, Dentistry, Nursing, Health Professions, and Graduate). UTHSA's research activities primarily occur at the university's facilities in the South Texas Medical Center.

  The Military Health Institute (MHI) is part of the UT Health San Antonio system. MHI was established in 2014 to support collaboration between UT Health San Antonio and the Department of Dense and Department of Veteran Affairs.
- **UTSA** – UTSA support bioscience and technology innovation through several efforts. The university has 33 research centers and institutes. Specific to bioscience, the UTSA College of Biomedical Engineering conducts research through its Institute of Bioengineering and Translational Research. UTSA also host the Procurement Technical Assistance Center (PTAC), located at its downtown campus. The center supports business locally with military procurement. Within the PTAC is the San Antonio MBDA Business Center that is specifically focused on helping minority entrepreneurs.

Support Entities

	The Greater: SATX Regional Economic Partnership is a private-public nonprofit that supports the growth and attraction of jobs in the San Antonio region. With its rebranding, the entity expanded its focus and efforts beyond San Antonio and Bexar County to a larger eight county region. The entity helps with the attraction and retention of employment with a focus on target industry clusters in San Antonio including advanced manufacturing, biosciences, cyber security, and fin-tech. The foundation focuses on efforts related to jobs (job attraction/ retention), people (workforce development and education), and place (placemaking and quality of life). The foundation's work with companies in the bioscience industry has identified challenges to growth of this industry cluster.
	BioMedSA is a member organization created to support the life science industry in San Antonio. The organization was founded in 2005 to serve as a hub for support services for workers and businesses in bioscience and to help promote and grow the industry. The organization provides industry programming, industry leader forums, promotes economic opportunities and resources, and facilitates collaborations. The organization also tracks the impact of the life science industry and has found that the region is attracting $530 million of federal research dollars, has over 1,400 active clinical studies, and has published over 175 life science US patents.
	The **City of San Antonio** Economic Development Department (EDD) offers a range of programs and incentives to support economic growth in the community including specific programs focused on biosciences and health care. EDD administers the City's business attracting, retention, and expansion programs including the tax abatement incentive program. The department has also created and supports a large workforce development network to provide targeted workforce development programs for various industries and population groups.
	Bexar County's Economic & Community Development Department is another major partner supporting biomedical and economic development in the region. The County offers incentive programs aimed at supporting new development projects that generate employment in target industries. Specifically, the County has an innovation fund that supports growth of technology companies, a tax abatement program that uses property tax abatements to incentivize new and existing business expansion, and an industrial development bond program that supports private development with financing for public investments.
	The San Antonio Life Sciences Institute (SALSI) is a collaboration between UT Health San Antonio and UTSA. SALSI has enabled joint doctoral programs and research projects. Research areas include biomedical engineering, bioterrorism, cancer, health disparities, infectious diseases and vaccines, neuroscience, regenerative medicine, and translational science. SALSI partners with SwRI and Texas Biomed to support commercialization of research.
	BioBridge Global is a family of nonprofit entities joined together to collectively provide lifesaving therapies and support advances in regenerative medicine. The organization brings together the South Texas Blood and Tissue Center, Qualtex Laboratories (blood and plasma screening), GenCure, and the Blood and Tissue Center Fountain. Together they provide services related to blood, tissue, and biomaterial services.
	GenCure is a part of the BioBridge Global family. It provides a suite of services to support the use, testing, storage, and manufacturing of biomaterials used in advanced skin and tissue therapies. The company provides a pilot scale research facility and a clinical scale facility located on the VelocityTX campus.
	The Health Cell is a organization that was formed by the biotechnology, medical, military, and academic institutions in San Antonio to promote professional development within the health sector.

Innovation District Opportunities

The analysis and inventory of the bioscience ecosystem and conditions in San Antonio has helped to identify major opportunities and challenges to greater innovation in San Antonio and the potential for an innovation district around the VelocityTX/TRTF campus. The major findings are summarized below.

Opportunities

- The bioscience industry in San Antonio has developed a competitive advantage in trauma care through the variety of care providers locally, the focus on regenerative medicine at the research institutes and private companies, and the major institutes of research and services for casualty care provided by the three of the six branches of the military.
- The health care industry and the military are two major economic drivers for the region. The focus of these industries in San Antonio are primarily around providing care and education. The existing workforce reflects the orientation to care but in many cases has the skills necessary to support medical and bioscience research.
- The region has world renowned research institutions (including SwRI, Texas Biomed, UT Health, and UTSA) in biosciences that have created an international reputation for research in San Antonio. These major institutions have the opportunity to create spin-off research and commercialization locally.
- There is an opportunity for growth and a need for continued support from all stakeholders for the growth of innovation in regenerative medicine and casualty care in San Antonio to leverage the existing research. There is a strong and growing network of support agencies focused on this niche that are helping to raise awareness, increase access to funding, and provide connections to military research.
- The university research activities conducted in the region are becoming more oriented to public-private partnerships and fostering commercialization. UTSA is making major efforts to facilitate commercialization and creating locations for innovation at its main campus and downtown campus areas.
- Lastly, the concentration of military medicine and research within San Antonio presents a major opportunity to spur economic growth from activity already occurring in the area. The innovation district is designed specifically to create more formal partnerships between the military and the private sector in casualty care research and development.

Challenges

- The research institutions largely do not provide opportunity for collaboration nor for technology and knowledge transfer. The major research institutions complete much of their work on large secure campuses isolated from their surroundings. SwRI and Texas Biomed have large, internal campuses located in west San Antonio. The military research is conducted within the military bases with limited opportunity for non-military personnel to participate in research.
- The region lacks a depth of private firms and workforce in biosciences to be a major attractor of new firms and workers despite the existing health care industry and major research institutions.
- San Antonio lacks the physical environment and locations that can support the development of a bioscience cluster. The downtown area is becoming a very attractive location for young professionals and for firms looking to attract talent. The specific amenities and assets that are needed to attract more tech and life science workers and firms are emerging.

Next Steps

The Innovation District for Science and Technology has the potential to capitalize on the opportunity to generate greater innovation and commercialization within biosciences specifically related to regenerative medicine and military casualty care. To be able to capture this opportunity, major efforts are needed to create the physical and social environment needed. The development of the innovation district can address the issues present in multiple ways. Major changes/efforts needed include:

- New approaches to research and institutional innovation are needed. Specifically, research activities that bring together institutional partners and private businesses are needed. This can occur through research that occurs within the innovation district.
- The most impactful action that can occur is the facilitation of military medicine research off military bases in partnership with private and/or institutional partners (e.g., university partners).
- Other opportunities include the attraction of university research activities and education in the innovation district. Partnerships with UTSA are a potential, however it is building its own locations for research activities. UT Health San Antonio is another partner that may present an opportunity for research or learning activities it provides in the district. Another approach could be partnership with Texas A&M, which has a growing local campus and an existing partnership with the US Army to support innovation in combat.
- The region needs to continue to attract firms and workers in the biosciences and life sciences. The creation of attractive locations to live and work is one component of that effort. Other components include the growth of employment opportunities and the education of the areas' workforce to support these industries.
- Lastly, a central location or locations within the region is needed that has the amenities and infrastructure that can support research efforts. Specifically, workspaces that allow for research are needed. This includes a variety of lab spaces that can be accessed by

private companies. It also includes office and manufacturing spaces for companies to use and grow into. The infrastructure to connect these efforts is needed. This infrastructure includes secure facilities, high-speed broadband connectivity, superior transportation connectivity, and a built environment that better connects neighboring firms and entities formally and informally. TRTF created VelocityTX and redeveloped the Merchants Ice Complex to be the catalyst to building this needed central location for innovation.

3. Innovation District Best Practices

Innovation Districts Overview

The Brookings Institute defines innovation districts as "geographic areas where leading-edge anchor institutions and companies cluster and connect with startups, business incubators, and accelerators. They are also physically compact, transit-accessible, and technically-wired and offer mixed-use housing, office and retail."

These modern-day centers of innovation are well-suited to accommodate knowledge-based economy. The U.S. economy is increasingly dependent on knowledge workers with skills to fill science, technology, education, and mathematics (STEM) related occupations. Research activities, firms, and jobs related to STEM fields are increasingly finding benefits to clustering of activities and of educated workers. The innovation district concept provides the opportunity for these companies and activities to cluster in environments that foster interaction. The benefits of these districts are numerous including the traditional economic development goals of job creation, growth of the tax base, and increased wages for workers. However, innovation districts also generate additional benefits beyond traditional research parks including:

Innovation Economy Definition

The innovation economy is the connection of knowledge, technology, entrepreneurship, and innovation as means to spur economic growth. The goal is to drive higher productivity and innovation. To do so, investments and policy interventions are needed to create partnerships between the public and private sectors to foster increased innovation.

- **Fostering more inclusive job and economic growth.** Locating employers, research activities, and the spin-off social/entertainment activities in centralized urban areas increases the diversity of jobs in the district. The superior connectivity of these areas makes it easier for workers of all backgrounds to work in the same area and share the same social networks, which is the opposite of the traditional models where knowledge workers were clustered in suburban office parks with little interaction with others outside the park.
- **Providing the connections to jump-start entrepreneurship.** New business creation plays an increasingly important role in economic growth in communities, but the rate of new business has been declining in the U.S. The rise of collaborative working spaces has decreased the cost and risk for new businesses, while the clustering of economic activities allows these new businesses to leverage assets needed to grow their ideas and businesses.
- **Supporting formal and informal interactions of workers and residents.** The regular interactions of workers and residents increase the social networks of workers in the districts and grows the resources of the companies they work for. These districts—and entities that help manage them—are designed to facilitate increased interaction through formal events but also through everyday interactions and events.

Innovation District Models

The Brookings Institute has identified three types/models of innovation districts. These models help guide the form and strategies needed to grow these innovation districts. The three models are the summarized in **Figure 2**.

Figure 2. Innovation District Models

Anchor Plus	Re-imagined Urban Area	Urbanized Science Park
Large-scale mixed-use development centered around anchor institutions, which are typically major research/education institutions	Older areas of central cities where the historic building fabric/uses have evolved	Suburban or exurban business parks that were traditionally isolated and car-only accessible
Example: Texas Medical Center Houston, TX	Example: Seaport Innovation District – Boston, MA	Example: Research Triangle Park Raleigh, NC
		

Source: Brooking Institute: So you think you have an innovation district? (2016)

The San Antonio Innovation Center for Science and Education district fits within the reimagined urban area innovation district model. The approach is to repurpose the built environment in the near Eastside of San Antonio to provide the physical environment needed to support innovation around bioscience and biomedical research.

Roadmap for Innovation District

The Brookings Institute has identified a roadmap for creating an innovation district that provides a guide for the City of San Antonio. The elements of the roadmap are summarized below and San Antonio's progress on the roadmap is illustrated in **Figure 3**.

1. **Collaborative Leadership Network** – Create a network of civic, business, and institutional partners that are champions for the creation of the district and can build support from the community for the district.

2. **Set a Vision for Growth** – A vision for the district is needed in terms of both its economic components and physical components. The vision must address the following:
   a. What is the competitive advantage provided by the district?
   b. How can the role and approach of partner institutions be reimagined to support modern innovation?
   c. What and how do you create the physical landscape needed to support innovation?

3. **Pursue Talent and Technology** – Attract, grow, and support the workforce and businesses in the district as the primary purpose of the district efforts. The goal of the innovation district is to attract and grow a talent workforce spurring the development of new technologies and businesses. Three elements needed for this effort are:
    a. A dedicated approach to talent attraction and growth
    b. A strategy for integrating technology into the physical landscape
    c. A targeted strategy for attracting research and businesses active in the industries of focus for the district.

4. **Promote Inclusive Growth** – Ensure the economic activity generated by the district is done in a way that creates inclusive growth for the community. This can be done through:
    a. Comprehensive neighborhood revitalization
    b. Labor market participation
    c. Entrepreneurship
    d. Upskilling and Workforce Development

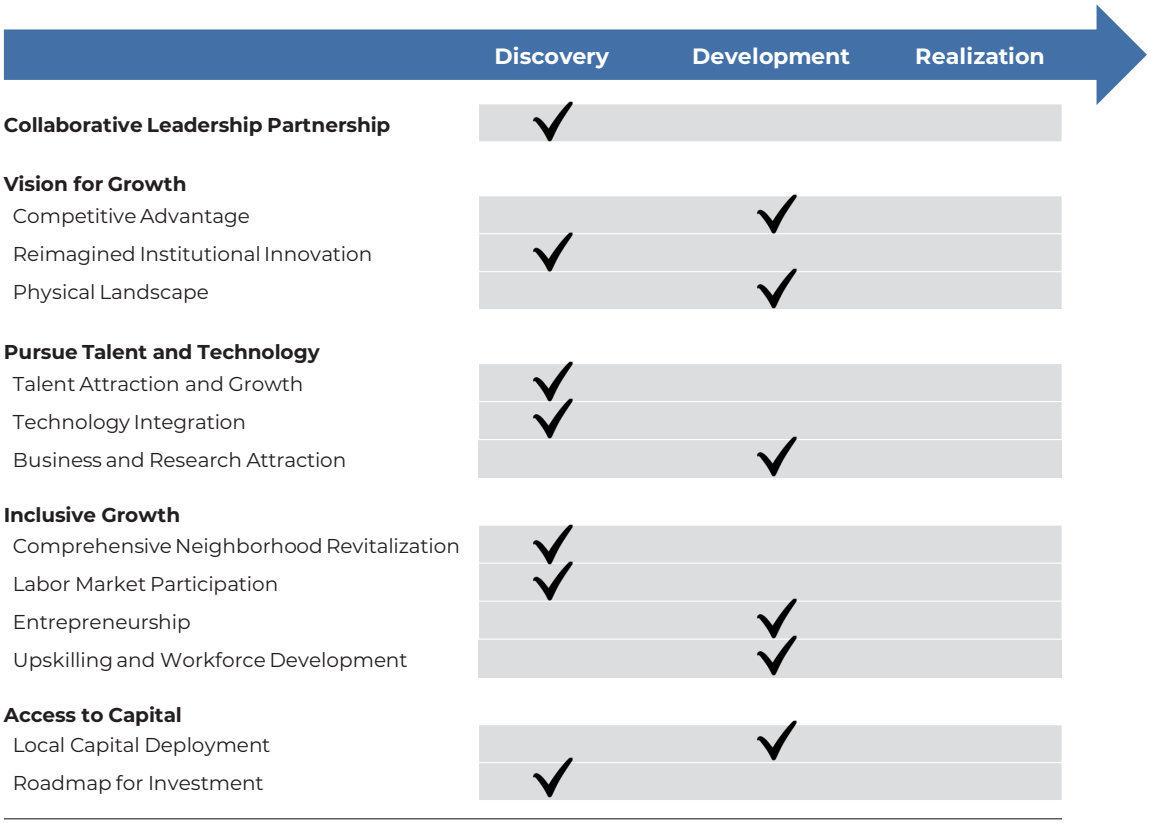
5. **Ensure Access to Capital** – Provide multiple avenues and opportunities for funding for a variety of improvements and investments that are both public and private. Guiding this investment is needed to create desired results. This can be done through:
    a. Guide local capital deployment
    b. Provide a roadmap for investment

The collective effort to create the San Antonio Innovation District for Science and Technology is in its early stages of development. Much like a new startup business, the effort is in the early discovery phase where plans are being created. Despite the infancy of the effort, TRTF and other partners have already made major strides in development of components of the district including:

- TRTF and its partners have identified the potential competitive advantage and role of the district in the bioscience ecosystem locally and nationally, with a focus on military care innovation within regenerative medicine and use of technology in providing care.
- The development of the VelocityTX innovation hub and Merchants Ice complex redevelopment are the first major steps in catalyzing the district. As the Merchants Ice Complex nears capacity, TRTF is expanding its footprint and efforts to the formerly State owned Sutton property a half block to the south. This site will provide the land needed to attract catalytic developments and users, such as the military, to the innovation district.
- TRTF and its partners have created a Pre-Seed Fund, a VC Fund, a startup incubator program, and startup accelerator program. TRTF has also attracted a venture capital entity, Alamo Angels, to the campus. All of these efforts are key components of supporting entrepreneurship and starting to leverage local capital funding opportunities. TRTF also provides networking and programing for the campus to engage workers and the community. The benefit of private businesses to the campus has further supported the attraction of investment and companies to the area.

This Master Plan effort will provide the guidance needed to move the remaining elements of the district out of the discovery phase and into development. Ultimately, the Master Plan will also provide a timeline for buildout of the district (realization) and its elements. This simple matrix can help track progress of the innovation district effort.

Figure 3. San Antonio Innovation District Progress



Overview of Districts

Seventeen innovation districts were evaluated both within and outside the United States, shown in **Table 3**. The initial analysis cast a wide net to identify examples of sizes, locations, and industry focuses of the districts. This initial analysis was used to identify topic areas common in districts and to identify example districts most applicable to San Antonio.

Table 3. Innovation District Examples

Name	City	State	Size (acre)	Companies	Emp	Location	Industry Focus
Cortex Innovation Community	St. Louis	MO	200	425	6,000	Midtown	Bioscience
16 Tech Indy	Indianapolis	IN	50	---	---	Downtown	Bioscience
Pegasus Park	Dallas	TX	23	---	---	NW of Downtown	Biotech
Austin Innovation District	Austin	TX	123	---	---	Downtown	Medical/ heatlh
Medical Alley	Golden Valley	MN	---	1,000	500,000	Outside of Minneapolis	Health technology
Buffalo Niagara Medical Campus	Buffalo	NY	120	150	16,000	Downtown	Medical
Cleveland Health Tech Corridor	Cleveland	OH	1,600	700	5,000	Midtown	Biotech/ biomedical
The Innovation Quarter	Winston-Salem	NC	330	90	3,600	Downtown	Healthtech
Research Park	Orlando	FL	1,027	145	10,000	Suburb of Orlando	Defense/ Military, cyber, energy
Midtown Innovation District/ Tech Square	Atlanta	GA	115	---	---	Midtown	Global health
University City/ Center City District	Philadelphia	PA	960	---	100,000	Center City	Healthcare/ life science
Research Triangle Park	Durham	NC	7,000	300	55,000	Suburb	Biotech
International	**City**	**Country**					
Mars Centre	Toronto	Canada	---	120	17,200	Downtown	Cleantech, health, fintech, & enterprise software
Halifax Innovation District	Halifax	Canada	---	2,000	---	South End/ Downtown	Health and life sciences
Liverpool Innovation Precinct	Liverpool	Australia	---	---	---	Suburb of Sydney	Healthcare
Medellin Innovation District	Medellin	Colombia	425	200	4,200	North of Downtown	Healthcare, ICT, energy
Oslo Science City	Oslo	Norway	---	---	---		Bioscience

Source: Economic & Planning Systems

The best practice topic areas identified are described below. These topic areas are used to direct the evaluation of the example districts for San Antonio.

- **Master Plan and Implementation** – Examples of best practices for development of Master Plan and subsequent guides for implementation of districts.
- **Management and Funding** – Examples of best practices for management of districts and ongoing funding for capital improvement and operations costs.
- **Bioscience** – Examples of best practices for districts that are focused on the growth of bioscience companies.
- **Military Innovation** – Examples of best practice for districts that are focused on capitalizing on military research and development activities.
- **Non-University Anchor** – Examples of best practices for districts that do not have a research university as a primary tenant or major district partner.
- **Equity and Inclusion** – Examples of best practices for districts that have been successful in spurring inclusive economic growth.

Of the numerous districts evaluated, six innovation districts were further analyzed based on the best practice topic areas, shown below in **Table 4**. Each district highlighted and executed at least one of the topic areas. Three of the innovation districts, Cortex, 16 Tech, and Innovation Quarter, met criteria for four out of the six topic areas and are most applicable for San Antonio. Each of these innovation districts are discussed in more detail below.

Table 4. Best Practices Matrix

District	Size (Acres)	Jobs	Master Plan/ Implementation	Mgmt/Funding	Bioscience	Military Innovation	Non-University Anchor	Equity & Inclusion
Cortex	200	6,000						
St. Louis, MO			✓	✓	✓	✗	✗	✓
16 Tech	50	N/A						
Indianapolis, IN			✓	✓	✓	✗	✗	✓
Innovation Quarter	330	3,600						
Winston-Salem, NC			✓	✓	✓	✗	✗	✓
Pegasus Park	23	N/A						
Dallas, TX			✗	✗	✓	✗	✓	✗
Tech Center	100	N/A						
Newport News, VA			✓	✓	✗	✓	✓	✗
Research Park	1,027	10,000						
Orlando, FL			✗	✗	✗	✓	✗	✗

Source: Economic & Planning Systems

Model Districts for San Antonio

The model districts identified for San Antonio include Cortex in St. Louis, 16 Tech in Indianapolis, and Innovation Quarter in Winston-Salem. Each of these innovation districts demonstrate the best practice topic areas of master plan and implementation, management and funding, bioscience, and equity and inclusion. Each district includes qualities and strategies that should be replicated for a successful innovation district in San Antonio.

Cortex - St. Louis, MO

In 2005, the Cortex Innovation Community (CIC) was established with a master plan to develop 200 acres within the City of St. Louis. The district is strategically located near St. Louis University, Washington University, and BJC academic healthcare complex, all of which are funding partners of Cortex. The area was established as a TIF and "Super TIF," a newly created tax increment district model. The Super TIF district was established by the City of St. Louis, State of Missouri, and St. Louis City Schools before redevelopment occurred. The combined revenues generated by the Cortex development over the 30-year projection period is estimated at over $775 million.

Cortex has been constructed in two phases with the first phase focused on bioscience with the development of a multitenant office and lab building and build-to-suit Solae soybean R&D facility. By the end of 2009, Cortex housed 35 companies. In 2010, Cortex expanded from bioscience and attracted other technology industries including information technology, data analytics, manufacturing, and logistics. From 2010 to 2018, the second phase of development occurred with a new interstate interchange into the CIC, a new light rail station, 3-acre park, and the rehab or new construction of 10 buildings. By 2018, Cortex developed over 2 million square feet of space from $700 million of investment. The CIC includes about 300 startups and entrepreneurs and is attracting large companies, including Microsoft that opened its new Midwest regional headquarters in the CIC in 2018. As of 2020, Cortex houses 425 companies and 6,000 employees.

Master Plan and Implementation – Cortex created a detailed master plan of the two phases of development. It established a desirable place to live and work and created a built environment that invites interaction. The master plan includes infrastructure plans to support research, commercialization, and livability through stormwater management, streetscape, bicycle network, public transportation network, parking access, open space, and design standards.

Management and Funding – Cortex was established as a nonprofit with clear goals identified to guide its work, which is to create new revenues for St. Louis, to create new jobs in St. Louis, and to promote inclusive growth. Cortex was established with a strong focus of economic development. The five anchor institutions pledged a total of $29 million in equity to acquire land for the district. Of which $5.4 million was paid in equity directly into the land acquisition fund and the remaining consisted of equity commitments (with no contingencies) payable over five years (University of Missouri-St. Louis was over 10 years). Various St. Louis corporations donated a total of $3.5 million to implement the initial phase of Cortex. In 2005, Cortex received $12 million in transferable

state tax credits that required building projects over a five-year period. These tax credits were shared with two regional nonprofits and all three had to raise $24 million in private sector contributions to use the tax credits over five years. Charitable investors received $500,000 in tax credits for every $1,000,000 invested. Washington University was a crucial partner that leased over 110,000 square feet of space to catalyze private investment in Cortex during the early stages of development.

In 2006, the City granted Cortex West Redevelopment Corporation increased authority with the ability to use traditional powers of eminent domain, secure land use approval, and provide tax abatement within the district. This authority allowed Cortex to implement the redevelopment plan without purchasing all of the land upfront; freeing up cash and equity that might have been needed for land banking purposes. Additionally, Cortex was able to use tax abatements for up to 25 years, including 100 percent of taxes in the first 10 years and 50 percent in the remaining 15 years, depending on need. Cortex used this tax abatement on its first two buildings.

In addition to tax abatement, in 2013, the City established Cortex as a tax increment financing (TIF) district to capture tax increases from investment and use it to finance district infrastructure improvements and reimburse development. The TIF, in essence, captured the increment attributed to buildings that did not receive tax abatement. The TIF district was approved for $167.7 million and allowed Cortex to capture 100 percent of the property tax increment and 50 percent of the sales, utility, and local payroll and earning tax increments for 23 years. A portion of the TIF proceeds were used to issue bonds in 2014 for $13 million and again in 2017 for $22.7 million. In 2015, the State of Missouri approved a SuperTIF in Cortex, which captured up to 50 percent of the increment state sales tax revenue. The SuperTIF was used to issue a bond for $17.5 million.

The revenue model of Cortex works like a Business Improvement District where annual building assessment fees are charged along with rent and management fees to support operations and provide services in the district. In 2020, Cortex earned an estimated $1.2 million in assessment fees.

Bioscience Partners – Cortex recruited two national partners that were crucial in creating a bioscience hub. Wexford Science and Technology put up capital, recruited tenants, and assembled financing deals to fill space within Cortex. Cambridge Innovation Center established two co-working office and lab space locations in Cortex and offered short-term membership agreements to fill the space. Both partners were essential in Cortex's formation and emphasis on bioscience companies.

Equity and Inclusion – Cortex has specific goals of diversity and inclusion that are a core component to the development strategy. A series of initiatives were established to assure inclusion and social equity including enacting organizational governance, adopting operational policies to ensure inclusion occurs throughout CIC, encouraging equity in entrepreneurship and new business development, and stipulating that construction projects within CIC are inclusive of their employment and contractor profiles. The Executive Committee of the Cortex Board approved an annual commitment of $125,000, over 10 years, toward initiatives that support Cortex goals of inclusion and equity. Since 2010, Cortex has met and exceeded the equity goals, specifically attaining minority and women owned company participation in CIC construction projects; increasing diversity on the board; promoting inclusive access to programming and events; contributing to efforts to train and engage young people of color in STEM and technology; dedicated a fund for training entrepreneurs; and partnering with Washington University to ensure access to affordable lab space for BIPOC research groups.

16 Tech - Indianapolis, IN

In 2015, the nonprofit organization 16 Tech Community Corporation (16TCC) was established by property owners, City of Indianapolis, corporate partners, and local institutions to lead and develop 16 Tech Indy. The 16 Tech Community Corporation is governed by a board of directors with a goal to foster economic growth and innovation in Central Indiana. 16 Tech is located in downtown Indianapolis in proximity to Indiana University School of Medicine and Indiana University-Purdue University Indianapolis (IUPUI) .

16 Tech is currently developing phase one of the 50-acre district. The first building is complete, an anchor office and research building, with 120,000 square feet and fully leased. This anchor facility was constructed by Browning Davis and includes Indiana Biosciences Research Institute, Indiana University of Medicine researchers, and the Central Indiana Corporate Partnership as anchor tenants as well as various advanced industry companies. Phase one of development is estimated to be complete by 2027 and will include over 2 million square feet of development including approximately 865,000 square feet of advanced industries/innovation-related office and lab space, 268,000 square feet of retail, restaurant, hotel, and amenity space, and 885 multifamily units. Additional components of the master plan include 15 acres of green space, three miles of bike and pedestrian trails, and access to White River and Fall Creek.

Upon buildout of phase one, in approximately five years, 16 Tech Indy is estimated to generate nearly 3,000 jobs of all skill levels with approximately 61 percent for entry and middle skill level jobs and 39 percent for high skill jobs. Over this time frame the district is estimated to generate over $500 million in private investment.

Master Plan and Implementation – 16 Tech created a master plan for the district in 2016 with an update in 2019. 16 Tech is located within the larger 250-acre technology park district designated by the City of Indianapolis. The 50-acre plan area is bounded by two arterial streets to the north and south, railroad tracks to the west, and Fall Creek to the east. The district will have central park and plaza space, small and walkable blocks, and a mix of building types and uses. The master plan includes four primary objectives of connections, density, vibrancy, and a sense of place. The plan is broken into two phases of near-term infrastructure investments and near-term development. The infrastructure investments include improving access by a roadway extension, design guidelines for streetscapes and public open spaces, and enhanced connectivity over the creek. Currently, 16TCC is working on the design of a bridge over Fall Creek to connect to the IUPUI hospital district and downtown.

Management and Funding – 16 Tech Community Corporation is a nonprofit organization with a board of directors that engages industry, civic, philanthropic, and community leaders in its mission. In 2015, the City of Indianapolis approved $75 million in TIF for infrastructure improvements for 16 Tech, including sewers and roads. Lilly Endowment Inc. awarded 16TCC with a $38 million grant to help fund the initial phase of development for the district. 16TCC has a development agreement with Browning Davis for $120 million to construct three new buildings and renovate an 11-acre facility that was provided by the City.

Bioscience – 16 Tech has a defined niche and focus of bioscience and supporting industries. The anchor entities fill each roll needed for a holistic bioscience cluster with research, incubation and acceleration, and private funding. There are numerous support companies and organization for the core entities that offer complementary research and uses. Additionally, 16 Tech Indy has connections to national and international ecosystems within the bioscience field.

Equity and Inclusion – 16 Tech has a commitment to support and engage with the surrounding neighborhoods to the north, east, and west of the district. 16TCC has goals for 16 Tech to create access, opportunity, and revitalization in the nearby neighborhoods. Its engagement strategy includes developing relationships with neighborhood associations; support community-based and industry partnerships that advance neighborhood workforce development, STEAM education, and create job pathways in the district; invest in neighborhood quality of life initiatives and improvements to connectivity and infrastructure; and coordinate district-wide engagement and opportunities to volunteer and partner with neighboring communities.

16TCC has two grant programs that award funding to numerous projects each year. The innovation pool grant supports projects designed, led, and implemented by grassroots and neighborhood-based organizations with funding up to $25,000. The impact pool grant supports projects with a significant impact on neighborhoods and residents with funding up to $100,000. In 2020, 16TCC awarded over $1 million in grant funding to 21 projects. The projects were focused on workforce training, business support, education, neighborhood capacity building, and infrastructure and beautification.

Innovation Quarter - Winston-Salem, NC

Innovation Quarter is a 330-acre district located in downtown Winston-Salem. The district is anchored by Wake Forest School of Medicine and houses a total of 90 companies with approximately 3,600 employees. In 2002, plans for an innovation district in downtown were created with an estimated 25-year buildout. Wake Forest Health Sciences led the initiative and partnered with the city, county, and state government. In 2010, Reynolds American (tobacco company) donated a total of 38 acres of land in downtown and $2 million to help develop the district. The first building, Wake Forest Biotech Place, opened in 2012 by Wexford Science and Technology, which was a redevelopment of a former tobacco warehouse. Since 2012, phase one is complete with over 1.9 million square feet of mixed-use space developed through new construction and revitalization of historic buildings. The following phases will include approximately 2.7 million square feet of mixed-use space, including 1 million square feet of clinical, office, and lab space plus 15 acres of urban green space. Buildings within the district feature ground-level activation of retail and restaurant space with office, innovation space, and housing above. The total public-private investment in the Innovation Quarter as of June 2021 is over $841 million.

Innovation Quarter was recognized as a best practice by Global Institute in 2020 for creating integrated places through intentionality around developed mixed use space. The best example of this in the district is the redevelopment of the 111,500 square foot Bailey Power Plant building into multiple restaurants, community spaces, an innovation hall, Wake Forest School of Medicine departments, private company offices, and flexible spaces to house startups, nonprofits, and community organizations. Additionally, Bailey Park is adjacent to this building and the area is the central activity hub of the district. Bailey Park is 1.6 acres of urban greenspace and hosts over 100 outdoor gatherings annually.

Master Plan and Implementation – Wexford Science and Technology was a major partner in the first phase of Innovation Quarter along with public-private partnerships with local, state, and federal government agencies. The first phase included large amounts of rehabilitation and redevelopment, which required significant infrastructure improvements. These improvements included moving transmission lines underground, relocation of existing rail and creating a new rail corridor, creation of a new four-lane road, stormwater retention system, demolition of existing structures, and installation of new water, sewer, fiber, power, and gas throughout the district.

For phase two of development, Innovation Quarter partnered with a global design firm to develop and design the master plan. This next phase is centered around a linear park that will host large scale entertainment, academic, and professional events. The development will occur on a 28-acre site and will include 450 residential units, 30,000 square feet of ground level retail and restaurant space, and 1 million square feet of office and innovation space. A significant component of this phase is connectivity to neighborhoods to the east across a highway through improved streetscapes, bridge enhancements, and extension of bike and pedestrian trails.

Management and Funding – Strategic partnerships with Wake Forest Baptist Health and real estate and development partner Wexford Science and Technology, which was the master developer, were essential for the district's formation. Additionally, partnerships with city, county, and state government, local businesses, developers, and community members supported the funding and establishment of the district.

Bioscience – The first tenant and anchor in the district was Wake Forest Biotech Place that occupied 284,000 square feet. Inmar Inc. relocated its headquarters and 900 associates to the Innovation Quarter in two renovated tobacco buildings. These were the catalysts for additional development and attracted a mix of tenants in bioscience and health technology. The key sectors of data analytics, clinical research, population health, regenerative medicine, and academic relationships and services are all located within the district.

Equity and Inclusion – Innovation Quarter has a goal to help facilitate spatial justice by sharing spatial resources and facilitating events to strengthen the connections between people and places. The district partners with a local food bank to offer a weekly drive-through produce pantry. Innovation Quarter also offers space and support for local community events, nonprofits, and community organizations. Through a partnership with Soy Empredador, the district offers a two month accelerator program and entrepreneurial education for Black and Latinx students.

Application in San Antonio

- **TIF and Value Capture Strategies** – Tax increment financing allows for the district to keep the incremental new tax revenue from the growth in assessed value due to investment and market appreciation. TIF revenues can be bonded against or used to reimburse costs as revenues accrue. Other value capture strategies include improvement districts and impact fees. Value capture allows for the increased property values from investment to be held and then reinvested within the district they generated from. Establishing these strategies prior to major redevelopment and infrastructure improvements within the innovation district is crucial to collect the most revenue from value capture to support the development and overall district. TIF was used in Cortex and 16 Tech.

- **Establish Infrastructure and Connectivity** – Establishing infrastructure is an essential component to setting up the innovation district for success and long-term sustainability. An infrastructure plan should be a significant component within the master plan and a priority to implement or phase. Key components within the infrastructure plan should include utilities, broadband, multimodal access, parking, street network, bike lanes, streetscape improvements and design guidelines. In addition, connectivity within the district and to the surrounding neighborhoods is important to identify early to maximize access and mobility. Creating safe, comfortable pathways with direct and convenient links within the district and to neighboring areas of the city will enhance the district and make an enjoyable experience for all users. An important objective along these lines is permeable boundaries, such that the surrounding community can migrate on and off campus with ease, due to the intentional efforts to integrate with surrounding neighborhoods. 16 Tech has a strong emphasis on infrastructure and connectivity. The district is currently designing and constructing a bridge over a waterway to connect to an adjacent neighborhood to improve access and create a scenic and unique place.

- **Centralized Activity Hub** – Creating a space that is the central hub for the district, is publicly accessible, and highly inviting will set it apart from other innovation districts and typical office parks. The central hub should include common space and green space with a mix of commercial, research, and residential uses within or adjacent. Creating a space that is a destination for a variety of users allows for it to be activated and utilized most of the time. A prime example of this is Bailey Power Plant and Bailey Park in Innovation Quarter. Bailey Park is multipurpose and hosts a variety of events each year and the Bailey Power Plant adaptive reuse is a true multi-use building with a variety of users and visitors. The Bailey area bolsters collaboration and serves as an activity and community hub for tenants, residents, and visitors.

- **Master Developer** – Engaging a master developer is a common practice used in the example innovation districts. An entity charged with coordinating, attracting, and supporting the development of new buildings is used in

Bailey Park in the Innovation Quarter, Winston-Salem NC

most examples to back the district. The type of Master Developer entity can vary. For 16 Tech, the 16 Tech Community Corporation – a nonprofit entity created by the project partners – serves as the master developer of the project guiding the implementation of the plan. At Innovation Quarter, a private developer, Wexford Science and Technology, was brought in to serve as the master developer. Cortex used a combination of these approaches by first creating the Cortex West Redevelopment Corporation to serve as the redevelopment authority including powers traditionally granted to the City or other local governments (e.g., eminent domain). Cortex also partnered with Wexford Science and Technology to attract tenants and develop supporting office and mixed-use buildings in the district.

Engaging a private developer to serve as the Master Developer for the San Antonio Innovation District is likely not a good approach given the multiple property owners in the district and the lack of control over development sites. An entity that can help guide infrastructure investment, support the horizontal development of the district, and secure strategic parcels is needed. The creation of a quasi-municipal or nonprofit redevelopment authority (similar to the 16 Tech Community Corporation or the Cortex West Redevelopment Corporation) is a better approach for San Antonio. The creation of a Local Government Corporation, an Economic Development Corporation, or a Redevelopment Agency are potential approaches to replicating the structure used at Cortex or 16 Tech.

Outdoor beer garden at Alamo Beer Company.

4. District Land Use Strategy

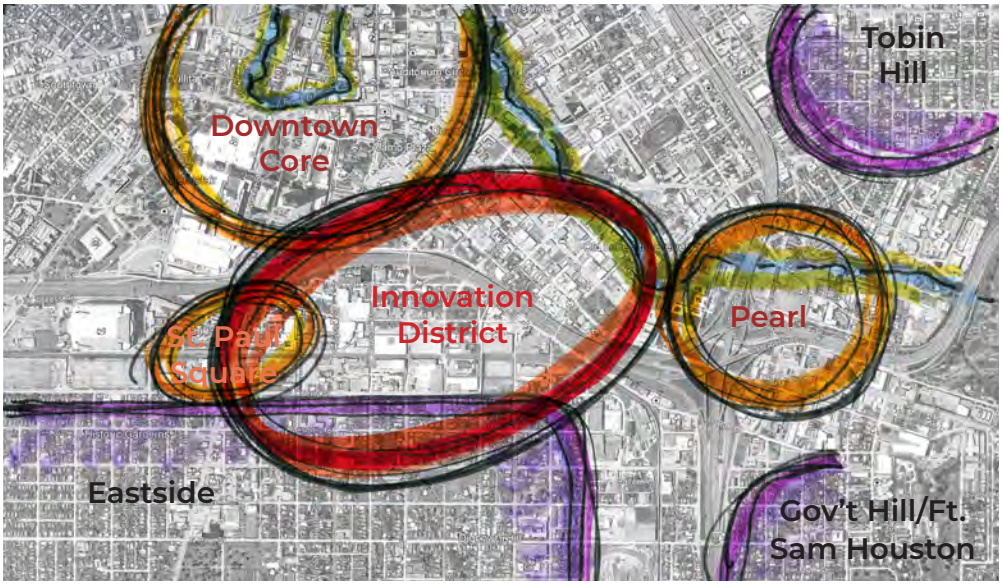
Eastside San Antonio

The Texas Research and Technology Foundation and its affiliated efforts including VelocityTX are in the historic Merchants Ice complex located at the intersection of Houston Street and Cherry Street on the near Eastside of San Antonio. The area around its facility is situated in between established neighborhoods and destinations of San Antonio. The location is ideal due to its proximity to Fort Sam Houston and downtown, as well as being in an area prime for supporting innovation based on the Brookings Institute model for a reimagined urban area.

The Eastside is the cultural and historic center for the Black community in San Antonio. Twenty six percent of residents of the Eastside Promise Zone are Black (compared to 6 percent citywide). St. Paul Square is the historic center of the Black community named after the St. Paul Colored Methodist Church that was established in the area on Center Street. Ellis Alley was one of the first African American settlements formed after Emancipation.

Large portions of the Eastside neighborhoods have been traditionally marginalized and disinvested in due to the legacy of segregation and racist policies, such as redlining, that shaped growth and investment in the community. The area has struggled for several decades to attract reinvestment from the public and private sectors. Its socioeconomic conditions and the opportunities that are present adjacent to the area are two of the major reasons that the area was designated as a Neighborhood Promise Zone by the Obama Administration in 2014. This federal designation and other federal, state, county, and city efforts have attracted recent investment to the area, which have been bolstered by the community development organization San Antonio for Growth on the Eastside (SAGE).

The near-Eastside area in which TRTF is located is made up of a mixture of older industrial buildings and uses, historic buildings, and vacant/ underutilized sites. The innovation district in this area has the opportunity to directly connect the Eastside to activity in downtown and to revitalize the historic economic center of the Eastside.



Defining the District

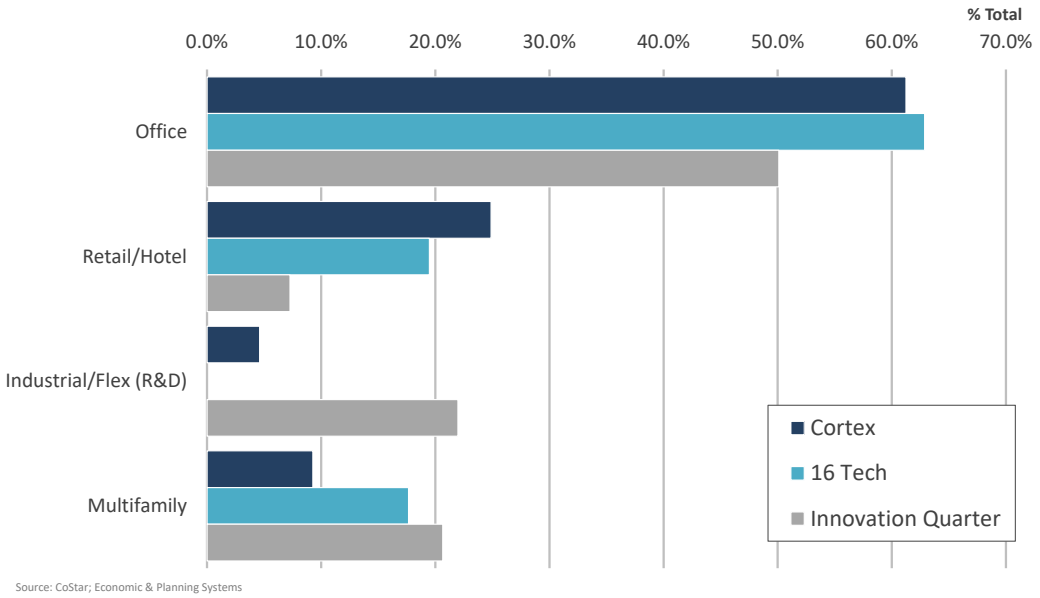
To define the boundaries of the innovation district, several inputs were researched and developed. First, analysis of peer innovation districts was completed to identify the typical size and amount of development in these areas. An estimate for capture of housing, office and retail demand citywide and within the innovation district was developed. Lastly, the existing uses in the area around TRTF were inventoried and categorized based on their compatibility with the innovation district.

Comparison to Peers

The model innovation districts for San Antonio include Cortex in St. Louis, 16 Tech in Indianapolis, and Innovation Quarter in Winston-Salem. These districts were further analyzed based on existing and planned land use to identify the best mix of uses and scale of development for San Antonio's Innovation District. Overall, each district includes between 2 and 3 million square feet of existing and planned development. The mix of uses by district is illustrated in **Figure 4**.

Office space is the dominant land use consisting of office, lab, and innovation space and accounts for 50 to 60 percent of each district. This is approximately 900,000 to 1.7 million square feet of office space. Multifamily accounts for approximately 10 to 20 percent of each district and includes between 250 to over 1,000 multifamily units. Residential development is a key component for innovation districts to have activated spaces outside of normal workday hours. Residents are also essential to help support the neighboring retail spaces. Retail and hotel development account for 10 to 25 percent of each district, which is approximately 190,000 to 690,000 square feet. Industrial and flex development varies between district depending on the presence of research and development (R&D). For example, 16 Tech has no industrial/flex development while the Innovation Quarter has 570,000 square feet, which accounts for 22 percent of the district.

Figure 4. Model Innovation District Space Allocation



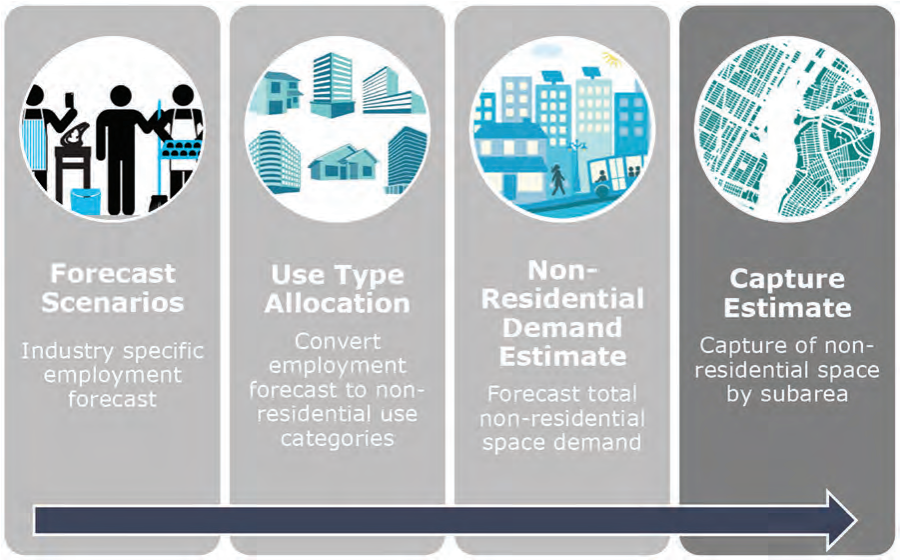
Source: CoStar; Economic & Planning Systems

Land Demand Analysis

Office Demand

The demand for office development is forecasted for Greater San Antonio MSA with a capture rate applied to estimated demand for the City of San Antonio. Based on the citywide capture of office demand, another capture rate is applied to estimate demand for the innovation district. The methodology used to forecast employment space over the 2020 to 2040 time period is illustrated in **Figure 5**.

Figure 5. Office Demand Methodology



Employment Forecast

Employment growth forecasts for Greater San Antonio MSA were developed using employment projections for Alamo Workforce Development Area created by the Texas Workforce Commission. The projected average annual growth rates by industry were applied to current employment estimates for the MSA and projected over the 20-year time period. Greater San Antonio MSA is projected to grow by a total of 349,500 jobs between 2020 and 2040. This is an average of 17,500 jobs per year, which is an average annual growth rate of 1.5 percent.

Use Type Allocation

The percent of total employment located in office development by industry is estimated to forecast the growth of office-based employees. This percentage varies by industry, yet on average, 33.4 percent of total employment is located in office development.

Demand Estimate

The forecasted office employees are translated to demand of office space using a standard employee per square foot factor that provides a total estimate of office development (square feet) demand. For office development, an average factor of 250 square feet of space per employee is applied. This results in a total demand of 27.1 million square feet of office development in Greater San Antonio MSA from 2020 to 2040, or an average of 1.3 million square feet annually, shown in **Table 5**.

Capture Estimate

Capture rates for the city and innovation district are used to estimate demand based on historic development trends and developable land availability. Based on historical capture rates, the City of San Antonio is anticipated to capture 83.5 percent of the office demand in the MSA. Over the 20-year time frame, San Antonio is estimated to have 22.6 million square feet or 1.1 million square feet per year of office development. TRTF is estimated to capture 5 percent of the citywide demand resulting in 1.1 million square feet or 56,600 square feet per year of office development, shown in **Table 5**.

Table 5. Office Demand, 2020-2040

Office Demand (sq. ft.)	2020-2040		
	% Capture	Total	Ann. #
Greater San Antonio MSA		**27,132,000**	**1,356,600**
City of San Antonio	83.5%	22,655,220	1,132,761
Innovation District	5.0%	1,132,761	56,638

Source: Economic & Planning Systems

Retail Demand

Future retail demand estimated for San Antonio is based on household and income growth and the portion of total income spent in retail stores as estimated in the steps below. To estimate retail demand for the innovation district, capture rates are applied to citywide demand estimates for specific store categories anticipated to locate within the district.

- Total Personal Income (TPI) growth is estimated based on household growth multiplied by average household income.
- Based on the U.S. Census of Retail Trade, the percent spent by retail store category is estimated.
- The amount of retail space supported by the growth in trade area expenditures is estimated by dividing expenditure potential by average annual sales per square foot estimates for each store category.

Population and household projections were developed for the City of San Antonio based on historical growth rates and forecasted growth rates for Bexar County developed by the Texas Demographic Center. San Antonio is estimated to reach 776,435 households by 2040 or an average increase of 12,579 households per year, which is an average annual growth rate of 2.0 percent. The total personal income (TPI) of residents in San Antonio is calculated by multiplying households by average household income. In 2019, the average household income in San Antonio was $72,587, which results in $37.1 billion of total personal income. From 2019 to 2040, San Antonio is estimated to increase by 264,162 households, which results in an increase of $19.1 billion of TPI, shown in **Table 6**.

Table 6. San Antonio Total Personal Income, 2019-2040

San Antonio	2019	2040	2019-2040 Total
Households	512,273	776,435	264,162
Avg. Household Income	$72,587	$72,587	
Total Personal Income	**$37,184,360,251**	**$56,359,083,352**	**$19,174,723,101**

Source: US Census; Economic & Planning Systems

Only a portion of all retail categories are included in this analysis, in an effort to align the nature of the innovation district with the most applicable retail store types. The relevant store categories include convenience goods (convenience stores, beer, wine, and liquor stores; and health and personal care), other shoppers' goods (clothing and accessories, and miscellaneous retail), and eating and drinking (essentially bars and restaurants). These retail store categories are anticipated to locate within the TRTF district. Based on the 2017 Census of Retail Trade, the average Texas household spends approximately 20 percent of household income on these retail goods annually. From 2019 to 2040, total retail expenditures by San Antonio residents are estimated at $3.8 billion, shown in **Table 7**. Retail expenditures are divided by an average sales per square foot, which varies by retail type, to calculate retail space demand. From 2019 to 2040, San Antonio is estimated to have demand for 10.7 million square feet of retail.

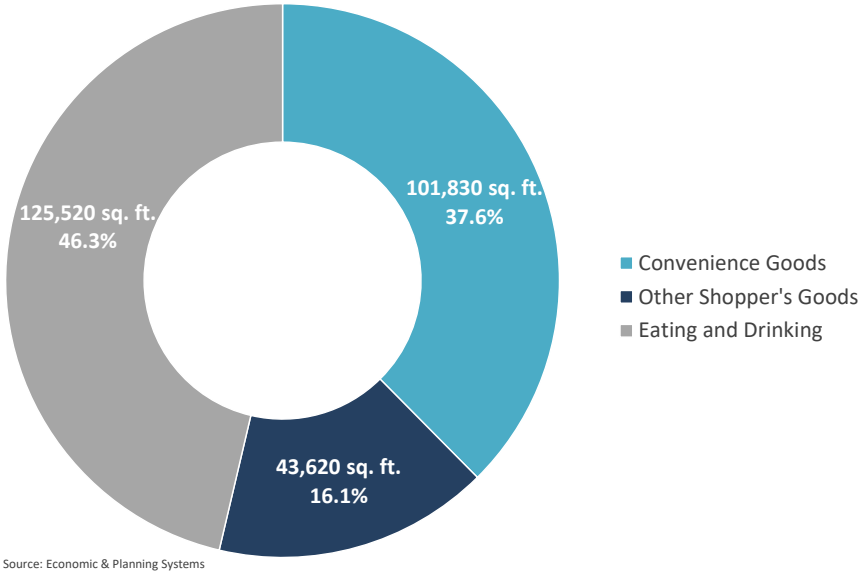
Table 7. Supportable Retail Development (sq. ft.), 2019-2040

Store Type	San Antonio Retail Sales % TPI (2017)	San Antonio 2019-2040 ($000s)	Avg. Sales Per Sq. Ft.	San Antonio Demand Sq. Ft.	TRTF Capture Pct.	TRTF Demand Sq. Ft.
Total Personal Income (TPI)	**100%**	**$19,174,723**				
Convenience Goods	8.8%	$1,683,054	$367	4,349,000	2.3%	101,830
Other Shopper's Goods	3.8%	$730,619	$325	2,181,000	2.0%	43,620
Eating and Drinking	7.6%	$1,464,443	$350	4,184,000	3.0%	125,520
Total Retail Goods	**20.2%**	**$3,878,117**		**10,714,000**		**270,970**

Source: 2017 Census of Retail Trade; Economic & Planning Systems

The total retail demand for the innovation district over this time period is approximately 270,970 square feet based on citywide capture rates or an average of 12,903 square feet annually. The methodology for this analysis is shown below in **Figure 6** and reflects each step in the analysis. The key element is the very low capture rates of citywide generation rates, which range from 2.0 to 3.0 percent, by store category. As it relates to convenience goods, TRTF is estimated to capture 2.3 percent of San Antonio's citywide demand, resulting in 101,830 square feet, 2.0 percent of other shoppers' goods resulting in 43,620 square feet, and 3.0 percent of eating and drinking resulting in 125,520 square feet.

Figure 6. TRTF Retail Demand



Residential Demand

Housing Demand

Population and household projections for San Antonio for the 20-year time period were used to translate demand for housing units by type. San Antonio is projected to grow by 264,162 households by 2040, shown in **Table 8**. A standard vacancy rate of 5.0 percent was applied and results in demand for 253,790 housing units over the next 20 years or an average of 12,085 units per year.

Table 8. San Antonio Housing Demand Forecast, 2019-2040

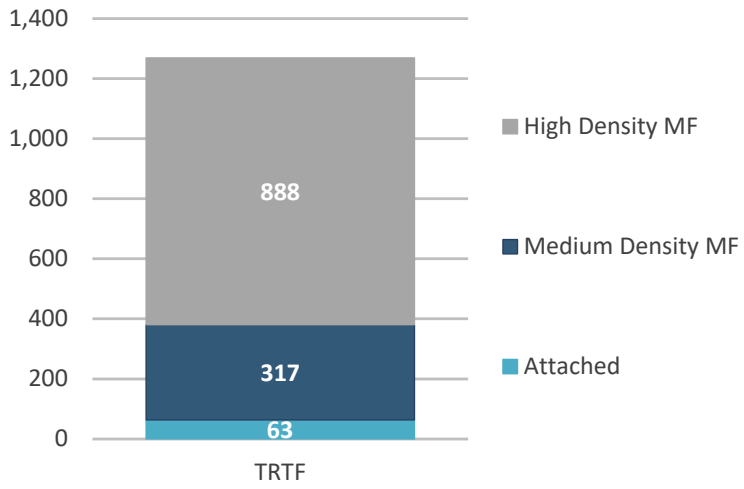
San Antonio	Factor	2019	2030	2040	Change 2019-2040 Total #	Ann. #	Ann. %
Forecast							
Population		1,547,250	1,862,477	2,204,451	657,201	31,295	1.7%
Pop per HH		*3.02*	*2.92*	*2.84*			
Households		512,273	636,947	776,435	264,162	12,579	2.0%
Housing Units	**5% Vacancy**	561,467	668,794	815,257	253,790	12,085	1.8%

Source: U.S. Census; Economic & Planning Systems

The innovation district is estimated to capture 0.5 percent of the citywide housing demand. This is a total of 1,269 units over the 20-year time period or an average of 63 units per year, shown in **Table 9**. The demand for housing units is broken down by housing type based on the type of housing anticipated to develop within the innovation district and the amount of available land. This breakdown of unit type includes 5 percent attached, 25 percent medium density multifamily, and 70 percent high density multifamily. Based on the total housing unit demand of 1,269 units from 2020 to 2040, approximately 63 units will be attached units, 317 medium density multifamily units, and 888 high density multifamily units, shown in **Figure 7**.

The amount of land required for each housing type (i.e., land absorption) is calculated based on the gross density for each housing type. Attached units have a gross density of 25 dwelling units (du) per acre, medium density multifamily units 50 du per acre, and high density multifamily units 100 du per acre. Based on these gross densities, 2.5 acres is required for attached units, 6.3 acres for medium density multifamily units, and 8.9 acres for high density multifamily units, shown in **Table 9**. Overall, a total of 17.8 acres of land is necessary to support the 1,269 units of housing demand.

Figure 7. Innovation District Housing Demand by Type



Source: Economic & Planning Systems

Table 9. TRTF Housing Demand and Land Absorption, 2020-2040

Housing Types	Factor	2020-2030	2030-2040	Change 2020-2040 Total #	Change 2020-2040 Ann. #
New Housing Demand	**% of units**				
Attached	5.0%	27	37	63	3
Medium Density MF	25.0%	134	183	317	16
High Density MF	70.0%	376	513	888	44
	Capture				
Total	**0.5%**	**537**	**732**	**1,269**	**63**
Land Absorption (Acres)	**Gross Density**				
Attached	25.0 DU/Acre	1.1	1.5	2.5	0.1
Medium Density MF	50.0 DU/Acre	2.7	3.7	6.3	0.2
High Density MF	100.0 DU/Acre	3.8	5.1	8.9	0.3
Total		**7.5**	**10.3**	**17.8**	**0.6**

Source: Economic & Planning Systems

Development Program

From 2020 to 2040, the innovation district has the demand to support approximately 2.7 million square feet of development. The development program is estimated to consist of 42 percent of office, lab, and innovation space, 48 percent residential development, and 10 percent retail development, shown in **Table 10**. Based on the demand estimates above, the innovation district can attract approximately 1.1 million square feet of office or an average of 56,600 annually. Supportive retail uses anticipated to located within the district may include restaurants, coffee shops, bars, convenience stores, personal services, gym/fitness studios, etc. The district is estimated to support 271,000 square feet of retail development or an average of 13,500 annually.

Table 10. Innovation District Development Program, 2020-2040

Description		2020-2040 Total	Ann. #	% Total
Office	sq. ft.	1,132,761	56,638	41.7%
Retail	sq. ft.	270,970	13,549	10.0%
Residential	sq. ft.	1,315,554	65,778	48.4%
	units	1,269	63	
Total	sq. ft.	**2,719,285**	**135,964**	**100.0%**

Source: Economic & Planning Systems

Additionally, approximately 1,269 housing units are anticipated to develop within the district, which is approximately 1.3 million square feet based on an average unit size of 1,037 square feet. Over the 20-year time frame, this is an average of 63 units annually. The innovation district is estimated to have a greater proportion of residential uses than peer districts. This greater capture of residential uses will help support the development of the innovation uses but also is a reflection of the market demand for the area that is becoming an increasingly more attractive place to live as new housing developments are built.

District Components

The innovation district area is meant to be integrated into the fabric of its surrounding community. The district needs to have its own sense of place and be a destination but be accessible for all users and visitors. Realizing the research and economic activities that are going to occur in the district will impact not just the parcels/blocks they are happening on but also the surrounding neighborhoods, two geographies were developed to define the district, the core district area and the surrounding influence area. The Master Plan provides guidance specifically for the core district but also for the influence area and beyond.

Innovation District at buildout

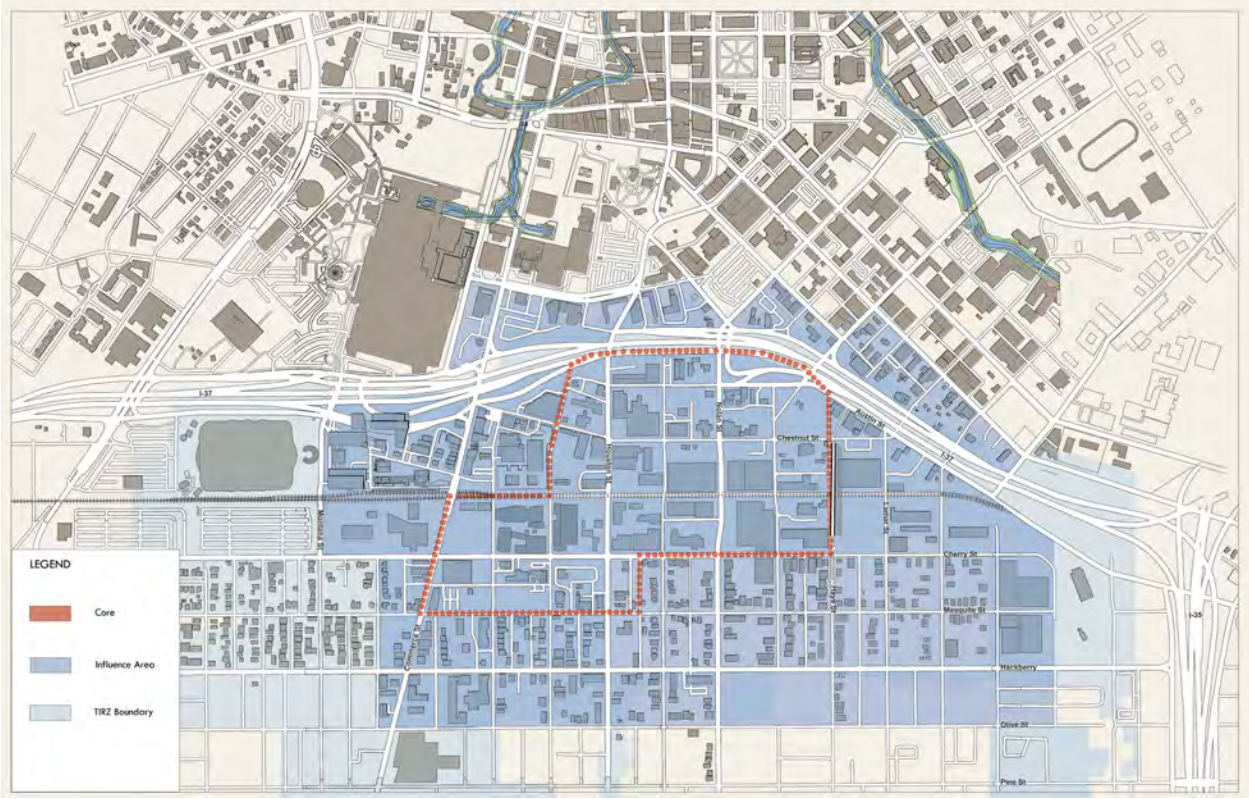
Core District

The Core District area is where the primary economic activities within the innovation district are going to occur. The Core District is centered around the Merchants Ice site and spreads to the north and south to encompass areas that are good candidates for redevelopment where existing support services are located, and there is a presence of historic buildings/uses that will aid in creating a sense of place for the area. The Core District area will be the focus of development and business attraction efforts, enhanced urban design guidelines, infrastructure investments, and place activation and management efforts.

Influence Area

The areas surrounding the Core District that are likely to be significantly impacted by the investments and activities in the district are identified as the Influence Area. The Influence Area includes parcels and uses that need enhanced efforts to mitigate displacement, support for encouragement of reinvestment and redevelopment of underutilized sites and investments in wayfinding and mobility to connect to the Core District. The Influence Area is almost completely within the Inner-City Tax Increment Reinvestment Zone (Inner City TIRZ), which creates the opportunity to utilize tax increment funds to support growth of the innovation district and support programs focused on the Influence Area.

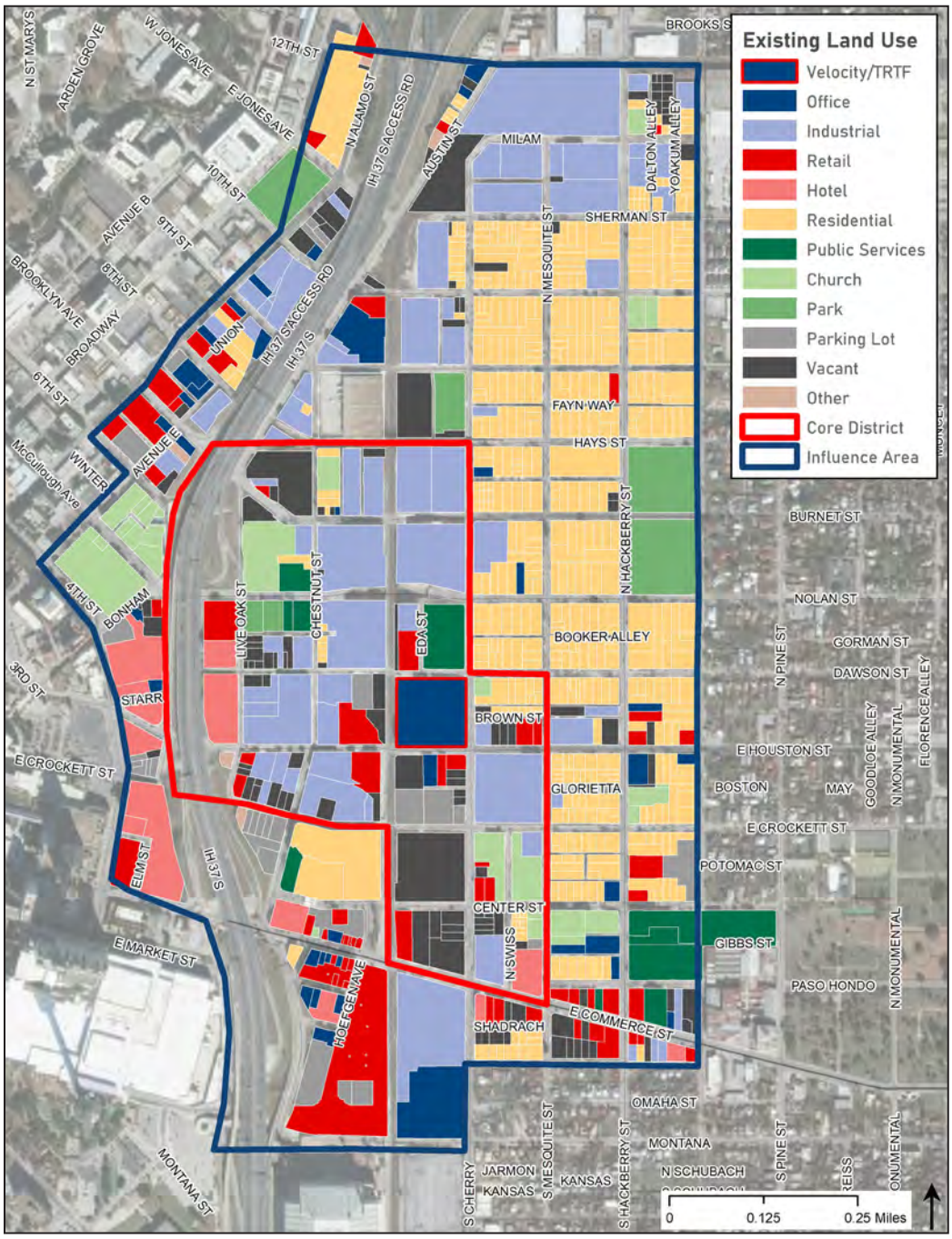
Figure 8. Innovation District Core and Influence Areas



Existing Uses

The existing land uses in the larger Influence Area were inventoried to better understand the potential areas of change and support for the district. The parcels between I-37 and Cherry Street are occupied by predominately industrial uses including existing businesses and vacant/underutilized industrial sites/buildings. Within this area, there is also a collection of historic commercial uses and buildings, social and public services, and some newer multifamily residential uses. The majority of the Influence Area, especially west of Cherry Street has characteristics (e.g., existing site utilization, land and building values, parcel sizes) that are supportive of redevelopment.

Figure 9. Existing Land Uses

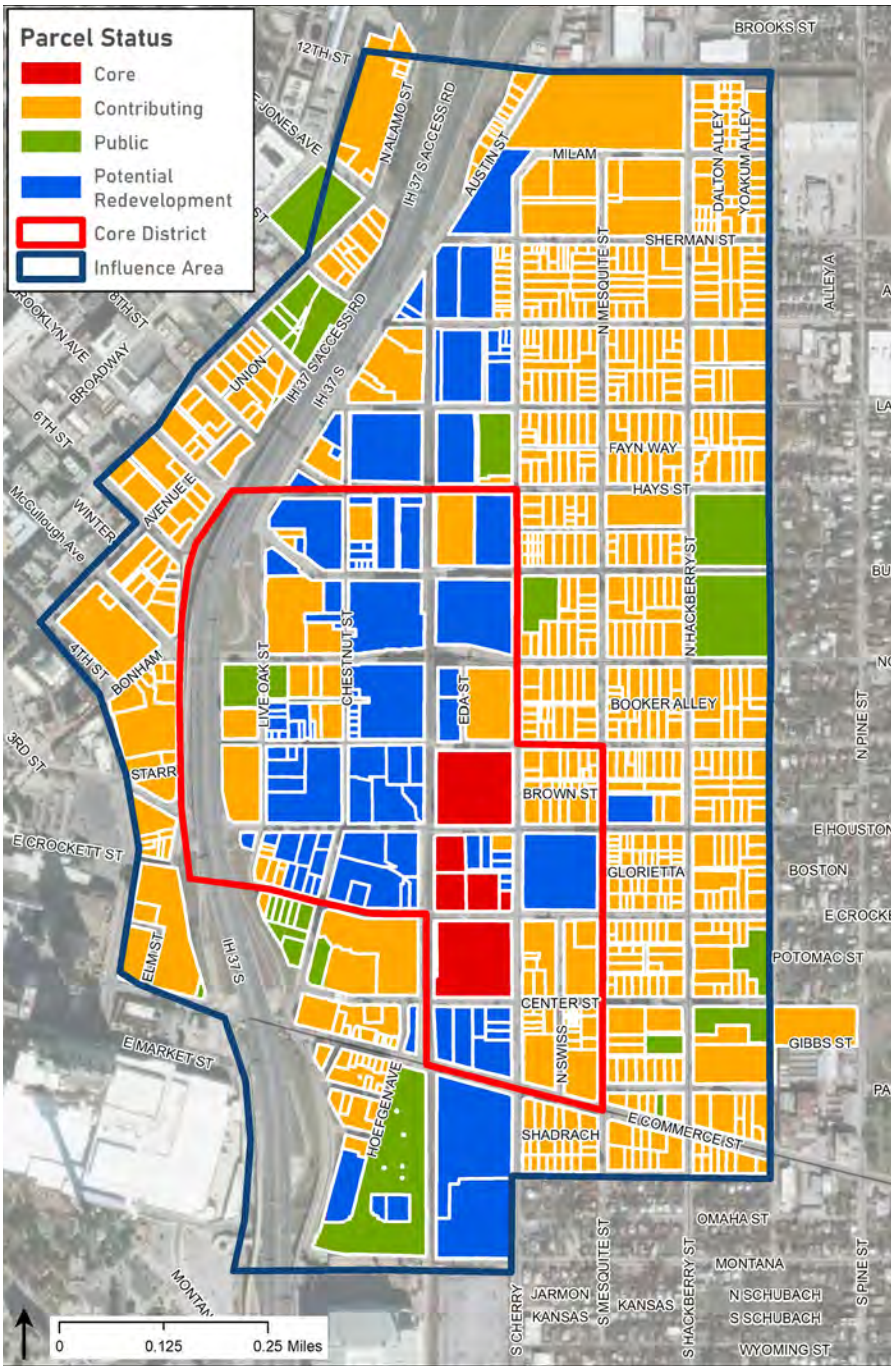


Assets Inventory

The parcels within the Influence Area were also categorized based on their potential role in the district. The parcels were considered to either be Core, Contributing, Public, or Potential Redevelopment.

- **Core Parcels** – Parcels that are owned and under control of TRTF and its partners. These parcels are the focus of the catalytic developments for the innovation district. They consist of three primary land holdings; the Merchants Ice site, a vacant lot on the south side of Houston (1304 E Houston), and the Sutton property to the south located between Crockett Street and Center Street.
- **Contributing Parcels** – Parcels that contain existing uses that contribute to the built environment in the district. These parcels contain a mixture of retail businesses, social service providers, public service providers (e.g., fire station), and workforce housing for the district and city.

Figure 10. Core and Contributing Parcels



- **Public Parcels** – Parcels that are for public uses and are owned by public/nonprofit entities. These types of parcels include parks and urban plazas (e.g., Sunset Station) that are open to the public for active or passive uses.

- **Potential Redevelopment** – Parcels that are vacant, underutilized, and/or contain uses that are not directly contributing to the desired future vision of the innovation district. These parcels do not necessarily contain businesses or uses that are incompatible or not welcome in the district but the current buildings, parcel utilization, and other factors indicate that a higher and better use is possible to be developed on the parcel and can support the growth of the innovation district through reinvestment or redevelopment.

The Core District Area is approximately 68 acres in size. Within the Core District there are numerous parcels that are identified as potential redevelopment sites, totaling 46 acres (2/3 of the district). These 46 acres have a capacity to support over 4.2 million square feet of development, which is sufficient capacity to support the innovation district program and allow for flexibility for where redevelopment occurs. The Influence Area adds capacity for another 2.2 million or more square feet of development in addition to the Core District.

Table 11. Innovation District Development Capacity

Description	Land Square Feet	Acres	Efficiency Factor	Net Acres	Floor-Area-Ratio	Building Capacity
Influence Area						
All Parcels	5,168,140	119	85%	101	2.5	10,982,297
Potential Redevelopment	3,040,985	70	85%	59	2.5	6,462,094
Core District						
All Parcels	2,973,372	68	85%	58	2.5	6,318,416
Potential Redevelopment	2,003,641	46	85%	39	2.5	4,257,738

Source: Economic & Planning Systems

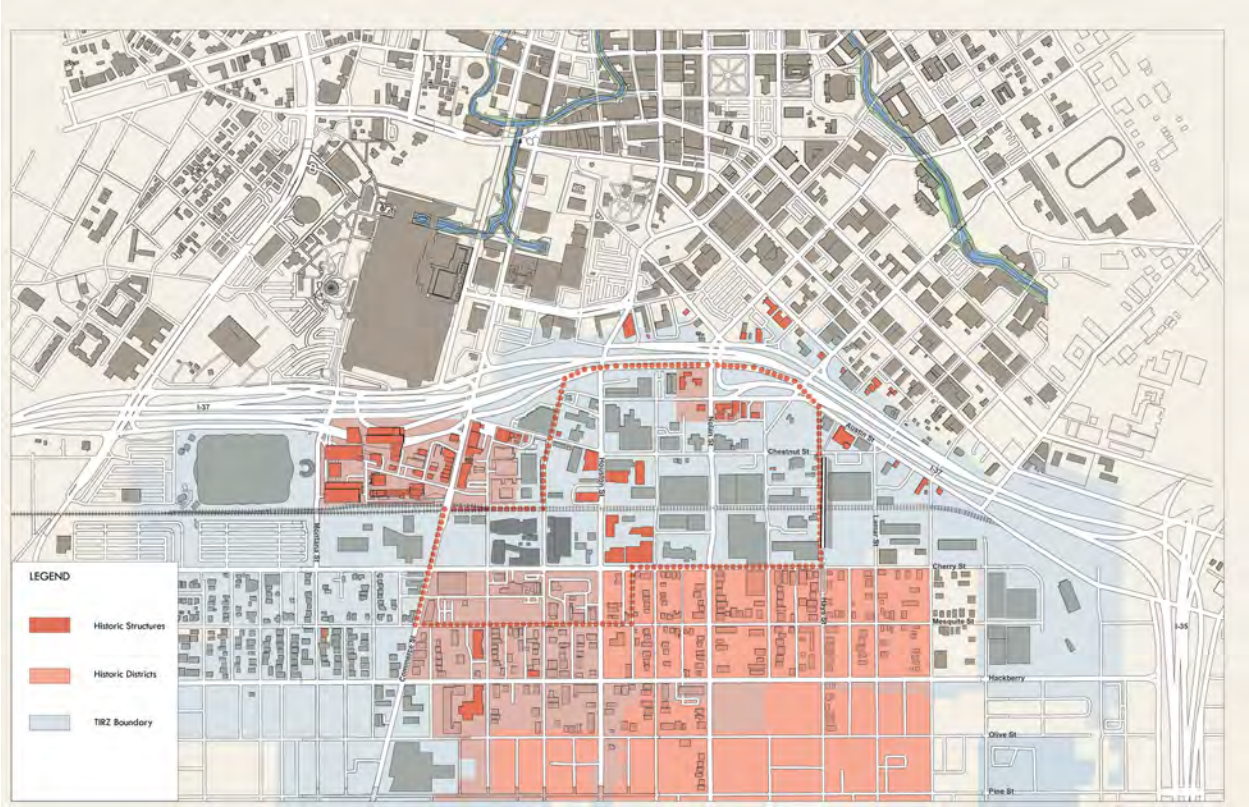
Historic Context

The Influence Area includes several historically designated buildings and districts. These designations help protect the historic character of the area and are an asset to the innovation district. There are three main nodes of historic buildings that are intended to be the central gathering places within the Influence Area and Core District.

- The **Historic St. Paul Square and Sunset Station** area is currently a destination for major events and entertainment in association with the Alamo Dome.
- The **Houston Street corridor** will serve as the focal point for the innovation district and serve as the central gathering place for workers, visitors, and residents with businesses providing a variety of services and workspaces. The reuse and adaptation of the historic buildings along Houston Street from Chestnut Street to Cherry Street will aid in the creation of a sense of place supported by streetscape and roadway improvements (described later in the plan). The adapted reuse of historic structures has been a major component of the efforts by TRTF within the Merchants Ice complex. TRTF utilized local, state, and federal resources and incentives to help fund reuse of the site. Properties in this area that currently have a historic designation (in addition to the Merchants Ice) include: 1200 E Houston St (Crane Building), 1226 E Houston St (former Spaghetti Warehouse), 1201 E Houston St, 1213-1225 E Houston Street, and 422 Chestnut Street.

- The **Healy Murphy area** is centered along Nolan Street at the intersection with Live Oak Street. This area is envisioned as a community gathering location and support center that can help bridge the gap between the downtown core and the Eastside. This area includes the Healy-Murphy Center that provides individualized education to youth in crisis, early childhood development, and family support services. The center is within a campus with a mixture of new and historic buildings on the north side of Nolan Street. South of Nolan Street is Healy Murphy Park, the Salvation Army, and two historic landmark buildings that are currently vacant. The reinvestment and activation of this area, including the areas under I-37, will serve as a community gathering place as you enter into the innovation district and the Eastside along Nolan Street, which is a major connection route due to its grade separated crossing of the railroad tracks.

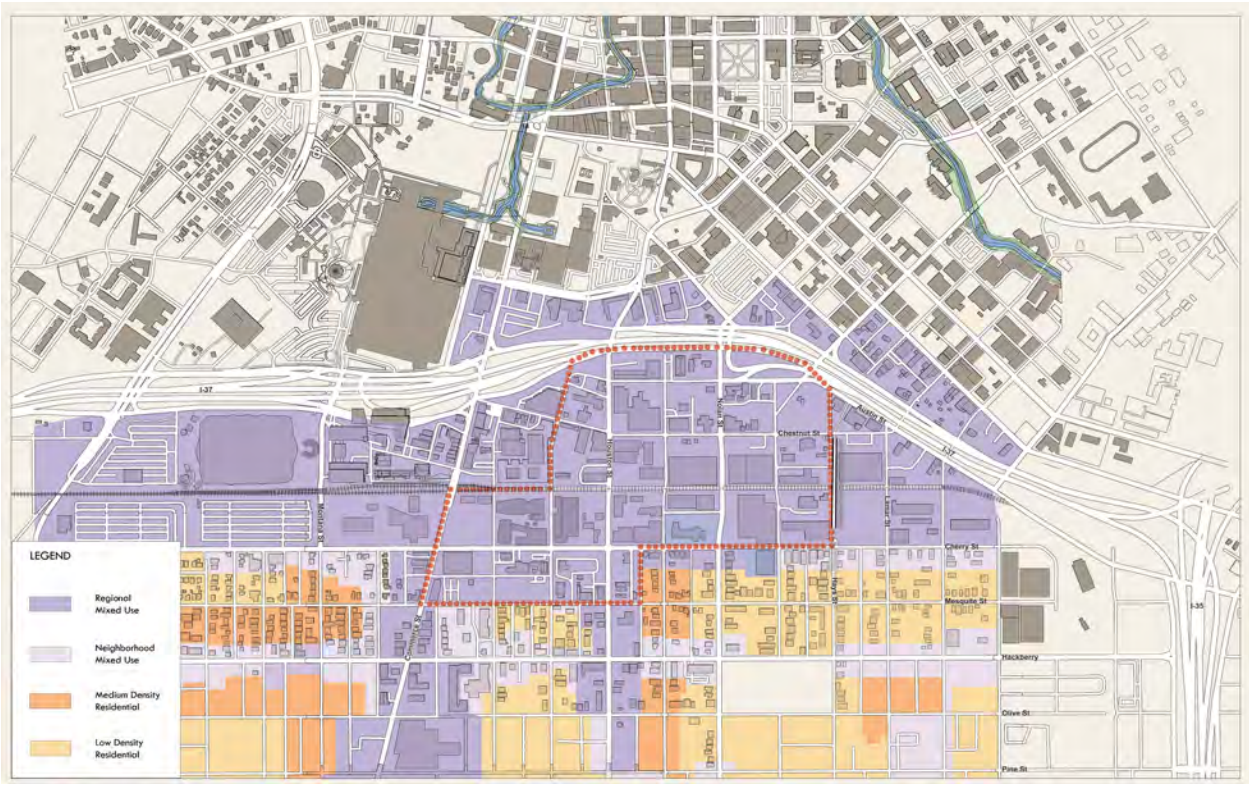
Figure 11. Historic Districts and Landmarks



SA Tomorrow and Future Land Use

The City of San Antonio recently adopted the Downtown Regional Center Plan that will guide development and efforts in the downtown area of the community over the next 20 years. Within this plan, the desired future land use for the entire downtown was developed. The entirety of the Core District is designated as Regional Mixed-Use, which is the highest density and most permissive land use (in terms of mixture of uses) designation. This designation provides ample flexibility and guidance to support the innovation district. The areas to the east of Cherry Street fall within the Eastside Community Area. This area is currently in the process of adopting a community area plan for the Eastside, which will also provide future land use designations. The draft designations from the plan were considered as well and support the Innovation District Master Plan.

Figure 12. SA Tomorrow Future Land Use Categories



Land Use Strategy

The land use strategy for the innovation district uses four designations to guide efforts.

Core – The Core designation indicates blocks and parcels that will be the focus of the initial efforts to attract redevelopment, new businesses and institutions to the district. The Core area stretches from Chestnut Street on the west to Mesquite Street including the blocks on the north and south of Houston Street. The Core area also stretches south between the railroad and Cherry Street to Center Street to encompass the Sutton Property. Partnership with existing landowners and strategic land purchases by TRTF and/or the future place management entity are needed to ensure the Core area is used for innovation district related efforts.

Contributing – The contributing areas are the existing businesses, uses, and parcels that will continue to support the innovation district. Efforts are needed to support these uses and mitigate negative impacts on these contributing partners.

Potential Redevelopment – These areas are the potential future redevelopment or adaptive reuse locations for the innovation district. TRTF and its partners should support and encourage investment in these areas for projects and efforts that bring supporting uses to the area such as office space, flexible employment spaces, housing, retail uses, and hospitality services.

Public Space – Areas identified as Public Space are a mixture of existing parks and public gathering spaces as well as areas identified as future community gathering corridors. The proposed public open spaces include the creation of complete streets along Nolan Street, Houston Street, and Commerce Street. Additional street/pathway improvements include Austin Street/Live Oak Street from Nolan north along I-37, the underpass of I-37, and areas adjacent to the railroad tracks connecting Houston Street to St. Paul Square. In addition, public spaces internal to major development campuses in the Core area will also be provided including the existing public spaces in the Merchants Ice complex and planned spaces within the future Sutton Property redevelopment.

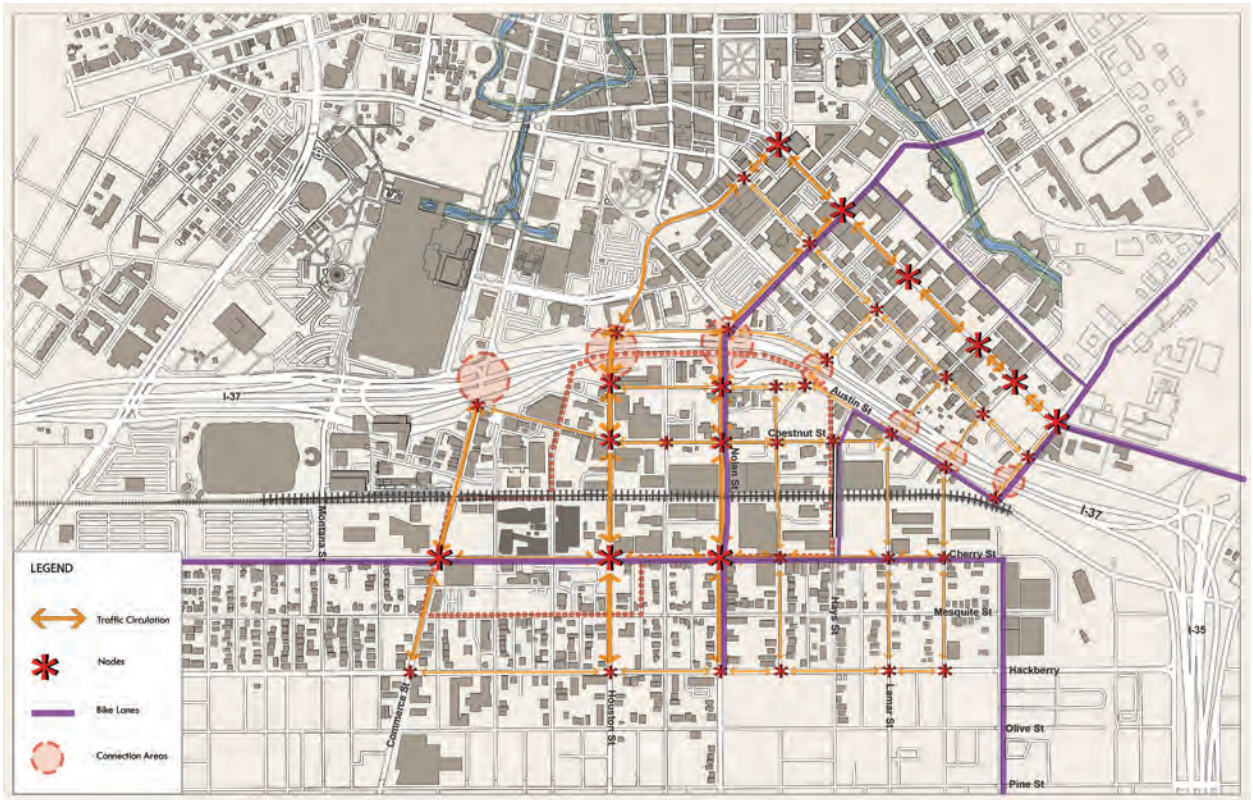
Figure 13. Innovation District Land Use Strategy

Innovation District Core area at buildout

Mobility Strategy

The Mobility Strategy diagram lays out the circulation patterns and multimodal improvements needed in the district. The diagram identifies desired traffic circulation patterns, the streets that should be enhanced bicycle routes with dedicated bike lanes including major connections through the district on Nolan Street and via the Hay Street bridge, intersection nodes that should have enhanced signaling and wayfinding, and major underpass connection locations that need pedestrian safety enhancements.

Figure 14. Innovation District Mobility Strategy



Railroad Right of Way through Innovation District facing south

Priority Infrastructure Improvements

A set of priority infrastructure improvements have been identified that are needed to support the growth of the district. Additional improvements will be needed and identified as the Master Plan is implemented and the district grows. The priority improvements are organized in four groups: multimodal improvements, complete streets, I-37 underpass improvements, and broadband infrastructure.

Table 12. Innovation District Priority Infrastructure Projects

Title	Additional Info	Description	Cost
Multimodal (bike lanes, sidewalks, lighting, shade)	Repair existing and establish new improvements to the essential infrastructure. The area described improves connectivity and safety between Eastside parks like Dignowity Park and Lockwood Park to the active Downtown region.	**Order**: South to North	
		Area: Total	**$10,307,000**
		McCullough Ave. (From N Alamo St. to I-37),	**$680,000**
		Brooklyn Ave. (From N Alamo St. to Burnet)	**$860,000**
		Burnet (From Live Oak St. to N Hackberry)	**$1,600,000**
		9th St. (From N Alamo St. to Austin St.)	**$430,000**
		Lamar St. (From Austin St. to N Hackberry)	**$1,332,000**
		10th St. (From N Alamo St. to Austin St.)	**$375,000**
		Burleson (From Austin St. to N Hackberry)	**$1,160,000**
Complete Streets	Repair and improve to become a Complete Street. The area described again provides a bridge between the Eastside and Downtown. There is an opportunity to improve safety, micromobility, and multimodality.	**Order**: Preference	
		Area: Total	**$71,000,000**
		E Houston St (From I-37 to N Hackberry)	**$24,000,000**
		Nolan St. (From I-37 to N Hackberry)	**$25,000,000**
		E Commerce St. (From I-37 to N Hackberry)	**$22,000,000**
I-37 Underpass Improvements	As an extension of both the Multimodal projects and Complete Streets projects, the I-37 underpasses are barriers that need improvements including bike paths, sidewalks, lighting, landscaping, and public art to promote safety and connectivity between the Eastside and Downtown.	Order: South to North	
		Area: Total	**N/A**
		Nolan St./McCullough Ave.	**N/A**
		Burnet St./Brooklyn Ave.	**N/A**
		Lamar St./9th St.	**N/A**
		Burleson/10th St.	**N/A**
		E Jones Ave.	**N/A**
Broadband Infrastructure	Connection is critical to innovation. Broadband would connect people virtually who have been historically disconnected.	**Area**: Near Eastside	**N/A**

Houston Street

The transformation of Houston Street into a Complete Street is one of the priority improvements and is the desired first major street improvement needed for the district. The proposed plan for Houston Street is to reduce the number of travel lanes on Houston from I-37 to Hackberry Street from four to two with essential lane reduction efforts focused between Chestnut and Cherry Streets. This reduction will allow for construction of wider sidewalks, creation of on-street parallel parking, parklets, and landscaping bulb outs, as well as provide shading and lighting through street trees, lights, and shade structures. The goal is to create a more inviting environment for pedestrians and to turn this segment into a community gathering area supported through sidewalk cafes, seating, and protections from automobile traffic. The project is estimated to cost approximately $24 million and is the primary project being proposed for the City of San Antonio's 2022 Bond effort.

Street Plan View (Houston St from Chestnut to railroad)

Proposed Cross-section

Houston Street – Proposed

- Reduce to 2 - 11' Lanes
- Wider Sidewalks
  → 8-16'
- Add Lighting
- On-Street Parking & Ride Share
- Street Trees/Shade
- Café Seating

Street Perspective (Before and After)

Nolan Street

Nolan Street from I-37 to Hackberry Street is proposed to be a "green street" that uses reductions in car travel lanes from four to two to allow for wider sidewalks, bike lanes, street lighting, street trees and plantings, and other improvements. The purpose is to turn the street into the primary mobility corridor accessing the district and connecting Downtown to the Eastside. The street will serve as a parklike connection between Dignowity Park and the Healy-Murphy Park and campus. The project is estimated to cost $25 million and is the second priority street improvement.

Street Plan View (Nolan St from I-37 to railroad)

Proposed Cross-section

Nolan Street – Proposed

- 2 – 12' Travel Lanes
- Sidewalks – 7-8'
- Bike Lanes
  - → Separated from vehicles
  - → Raised/Level with sidewalk
- Pedestrian Scale Lighting
- Planting strips or trees
- Connects with McCullough Avenue of Light

Street Perspective (Before and After)

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5. Innovation District Program Strategy

Action Plan Framework

There are eight essential program elements that need to be implemented in the innovation district. Four of the elements are specific to the **Core District** and four apply to the entire **Influence Area** and beyond (All Areas). Strategies are provided for each element including a description of the strategy, the lead implementing entity, strategy partners, and the timing of the strategy. There are three timing categories; priority, ongoing, and next step. The priority strategies should receive the most focus over the next year and are essential strategies for implementation.

Table 13. Core District Essential Elements

Elements/Strategies	Description	Lead	Partners	Timing
Anchor Institutions				
Military R&D in the District	Create a facility to locate Department of Defense Casualty Care Research & Development in the district	TRTF	DOD, JBSA, CoSA, Bexar County	Priority
University R&D and Education in the District	Attract university research and development activities to the district through multiple channels including locating R&D in the district, internship/mentorship programs for students, creation of university research commercialization support centers, educational programs, and events. Develop partnerships with UTSA, Texas A&M, Alamo Colleges, and other universities in the region.	TRTF	UTSA, Texas A&M-SA, Alamo Colleges (St. Philip's)	Next Step
Research Institution Presence	Form partnerships with the major research institutions in San Antonio including SwRI and Texas Biomed and identify ways to locate research efforts within the district.	TRTF	SwRI. Texas Biomed	Next Step
Place Management				
Management Entity	Form a place management entity (PME) that will manage the growth of the innovation district	TRTF, CoSA	Bexar County, SAGE	Priority
Formularize a Core District Boundary	Work with area property owners and businesses within the Core District to formally define a District Boundary.	TRTF, Property Owners	CoSA, SAGE	Priority
Create a Funding District	Create a funding district for the Core District area that creates a formal funding partnership with the property owners to manage and invest in capital improvements and pay for district management.	TRTF, Property Owners	CoSA, SAGE, Bexar County	Priority
TIRZ Strategy	Develop a strategy for the long-term use of tax increment reinvestment zones in the innovation district and the Eastside. The inner city TIRZ expires in 2025.	TRTF, SAGE, CoSA, Bexar County	Council District	Priority
Innovation Management				
Strategic Growth Plan	Develop a strategic growth plan for TRTF and the innovation programs and services provided in the innovation district. Identify how to grow the current programs offered by TRTF and VelocityTX. Identify future space demand needs for programs. Implement new programs as needed to support growth of the district.	TRTF, PME		Next Step
Capital Improvements				
2022 Bond	Continue to advocate for inclusion of the priority projects in the 2022 bond program for the City of San Antonio.	TRTF, Bexar County	SAGE, Council District Office, Bexar County	Priority
Priority Improvement Refinement	Further refine the priority project list for the district including development of conceptual designs, additional cost estimating, and identification of partners	TRTF. PME	CoSA	Next Step

Source: Economic & Planning Systems

Table 14. All Areas Essential Elements

Elements/ Strategies	Description	Lead	Partners	Timing
Land Use Management				
SAGE Partnership	Engage with SAGE in development of their strategic plan. Identify how integrate SAGE efforts with the innovation district priority efforts. Identify how TRTF and the future place management entity can support SAGE's programs and actions.	TRTF	SAGE	Ongoing
Centro Partnership	Engage with Centro San Antonio in development of their Urban Development Strategy. Advocate for prioritization of innovation district related efforts.	TRTF	Centro San Antonio	Ongoing
Inner City TIRZ	Engage the Inner City TIRZ Board to inform them of the Master Plan and to regularly inform them on proposed new developments and businesses locating in the district.	TRTF, PME	CoSA, Inner City TIRZ Board	Ongoing
CoSA Partnership	Engage with the City of San Antonio in development of their efforts related to the Eastside. Provide feedback on the draft Eastside Community Area Plan. Engage with Housing and Neighborhood Services to identify program offerings that may be leveraged by the district including the strategic housing implementation plan (SHIP) and the anti-displacement agenda. Form a relationship with the Office of Historic Preservation to leverage the vacant building program and historic designation/ landmark programs to support the district.	TRTF, PME	CoSA	Ongoing
Economic Development				
Attract Biomedicine Companies	Continue to attract biomedicine companies to the district through providing lab and workspaces, offering incentives, and providing worker support services.	TRTF	Place-Management Entity (PME), CoSA, Bexar County, Greater SATX, Biomed SA	Ongoing
Incentive Program	Develop an incentive program for attraction of development and businesses in the district. Define the suite of tools/incentives that can be offered and develop perimeters for use of the incentives.	PME, CoSA, Bexar County	TRTF	Ongoing
Small Business Program	Develop a program to support, fund, and incentivize the creation and location of small businesses within the district. Explore ways to increase ownership of buildings for businesses and participation of Eastside residents in entrepreneurship.	PME, SAGE	TRTF, CoSA	Ongoing
Inclusive Growth				
Community Engagement	Maintain a regular schedule of community meetings and events focused on Eastside businesses, residents, and partners to collectively implement the Master Plan. Focus meetings on each of the district program elements. Consider formation of a district steering committee that oversees facilitating the meetings and action steps.	TRTF, PME	CoSA, SAGE, Stakeholders	Ongoing
District Internal Strategy	Develop a strategy for ensuring inclusive growth within the district by providing educational, skill development, and employment opportunities to Eastside residents and other disadvantaged groups in San Antonio.	TRTF, PME	SAGE, CoSA	Next Step
District External Strategy	Develop a strategy for ensuring inclusive growth beyond the core district area. Support and fund anti-displacement efforts, attract/ advocate/support affordable housing development, support and fund community ownership and local business ownership programs. Provide resources for education programs.	TRTF, PME. SAGE. CoSA	Bexar County, Area Social Service Providers, area Faith-Based Organizations	Next Step
Educations				
In District Education	Provide programs and events that bring learners of all ages into the innovation district for educational opportunities.	TRTF, PME	All Educational Institutions	Next Step
Partnerships	Create formal partnerships with SA ISD, Healy-Murphy, St. Philip's College, UTSA, and Texas A&M San Antonio to create education programs that support Eastside residents and the improvement of the innovation district workforce.	TRTF. PME	SA ISD, Healy-Murphy, St. Philip's College, UTSA, Texas A&M SA	Next Step

Source: Economic & Planning Systems

Roles and Responsibilities

The ongoing roles and responsibilities for implementing the Master Plan are identified based on the Program Elements shared above.

Table 15. Innovation District Roles and Responsibilities

Description	Place Mngmt Entity	TRTF	CoSA	Inner City TIRZ	SAGE	Private Partners	Anchor Public Partners
Economic Activity							
Research and Development		X				X	X
Commercialization		X				X	X
New Business Formation		X	X		X	X	X
Place Management							
Clean and Safe	X						
Programming Events	X	X			X	X	X
Build Improvements/Amenities	X		X	X		X	X
Maintenance Improvements/Amenities	X		X				
Funding Source							
Operation of District	X			X			
Capital Projects	X		X	X		X	X
Land Use Controls							
Zoning/Development Regs/Design Guidelines	X		X				
Buy/Sell Real Estate	X	X	X	X		X	X
Lease/Hold	X	X				X	X
Economic Development							
Recruitment	X	X	X		X	X	X
Incentives	X		X	X	X		
Network	X	X			X	X	X
Access to Capital		X	X		X	X	X
Education							
Applied Education		X				X	X
Skills Training		X	X			X	X
Exposure	X	X			X	X	X
Inclusive Growth							
Affordable Housing			X	X	X	X	
Anti-Displacement			X		X		
Community Ownership	X		X		X		X
Workforce Development		X	X		X	X	X

Source: Economic & Planning Systems

Place Management Entity Options

There are five priority initiatives that are identified in the Action Plan. One of those priorities is the formation of a Place Management Entity along with the definition of a formal district boundary and establishing funding sources.

A master developer, public financing, and place management tools are essential to creation of a successful innovation district. Some combination of tools is needed to provide business incentives, fund and build capital improvements, provide place management services, and assist in the acquisition and disposal of real estate.

The potential public corporation, special district, and tax increment financing approaches available and commonly used in Texas were identified. Three potential approaches for the use of these tools—including the positive attributes and potential barriers to each—for consideration by the City of San Antonio and TRTF are provide below.

Approach 1: Municipal Management District (MMD) and Tax Increment Reinvestment Zones (TIRZ) District

This approach uses a MMD in coordination with a TIRZ District. The MMD will serve as the leading entity in charge of management of the implementation of the innovation district strategy. The MMD will provide place management services that will be funded through either an additional property tax or special assessment on property owners and potential businesses within the district. The MMD will also take an active role in the acquisition and disposition of real estate to further the district goals. The MMD also has powers to fund, build, and manage capital improvements.

The TIRZ District will support funding of capital improvements. Ideally, a new TIRZ District will be formed in 2025 with the boundaries approximately matching the influence area for the district. The new TIRZ District can have the same or slightly broader governing board as the management district.

- **Benefits** – Approach 1 provides the management entity with the most powers and flexibility. The Municipal Management District has the widest range of powers and revenue streams at its disposal. The TIRZ supporting the MMD can help capture the value generated in the district without having to assess additional taxes on the district and influence area owners.
- **Barriers** – Approach 1 is the most difficult to implement, which is its major barrier to use. The formation of the district will require approval of most property owners in the district boundaries. The MMD tool is most often used in more greenfield, undeveloped land contexts. Within an urban, infill context, the use of a MMD is more challenging as it will require buy-in from the property owners and businesses. As a result, the district area may have to be smaller than desired and likely much smaller than the associated TIRZ boundaries. The MMD also does not have the ability to provide business incentives (tax abatement or grants/loans), which require direct partnership with the City of San Antonio and/or the TIRZ District to provides these incentives.

Approach 2: Economic Development Corporation (EDC) or Local Government Corporation (LGC) with TIRZ District

This approach uses either an EDC or LGC as the managing entity for the district. The EDC or LGC should be supported by a TIRZ District. The EDC or LGC will provide place management services that will need to be funded through the city, TIRZ, and/or any programmatic revenue that is generated. The EDC or LGC can play an active role in the acquisition and disposition of real estate to further the district goals but may have some limitations. Either entity can also provide business incentives and other powers that the city possesses.

The TIRZ District will be a more important partner in providing funding of capital improvements and programmatic funding. Ideally, a new TIRZ District will be formed in 2025 with the boundaries approximately matching the influence area for the district.

- **Benefits** – Approach 2 is easier to implement as the creation of an EDC or LGC is city-initiated and does not require buy-in or approval from property owners. There is no defined boundary that is needed. The EDC or LGC can also use many of the powers that cities are enabled.
- **Barriers** – Approach 2 is challenged by the lack of powers and revenue tools that EDCs or LGCs have. Neither entity has powers to assess taxes or fees to fund ongoing costs and programs. There are also some limitations on the services that can be provided by either district related to clean and safe programs, real estate controls, and building capital improvements.

Approach 3: EDC or LGC, Public Improvement District (PID), and TIRZ District

This approach uses either an EDC or LGC as the managing entity for the district with a PID to help fund ongoing costs. The combination EDC or LGC and PID should be supported by a TIRZ District. The EDC or LGC will provide place management services that will be funded through the PID. The EDC or LGC can play an active role in the acquisition and disposition of real estate to further the district goals but may have some limitations. Either the EDC or LGC can also provide business incentives and other powers that the city possesses. Lastly, the PID can be used to fund, construct, and manage capital improvements.

The TIRZ District will support funding of capital improvements. Ideally, a new TIRZ District will be formed in 2025 with the boundaries approximately matching the influence area for the district. The new TIRZ District can have the same or slightly broader governing board and boundaries as the PID.

- **Benefits** – Approach 3 has the broadest set of powers available to the district, although through three entities. The EDC or LGC can also use many of the powers that cities are enabled and can be easily formed. The PID can take a lead role in capital improvements and leverage TIRZ dollars more effectively. A PID may also be easier to generate support for than the MMD from impacted property owners as the powers are less broad and the funding is more directly tied to services and infrastructure.
- **Barriers** – Approach 3 has similar barriers to Approach 1 in terms of the formation. The PID will require approval by a majority of property owners. This approach is the most complicated because of the use of three entities with potentially three different governing boards.

Table 16. Innovation District Place Management and Funding District Options

Description	Economic Development Corporation	Local Government Corporation	Municipal Management District	Public Improvement District/Business Improvement District	Tax Increment Reinvestment Zone
Examples of Use	SAMMI, arms-length economic development entity for a city	Convention Center Owner/ Operator	New Master Planned Community Developer and Manager	Centro, Merchants Association	City Initiated OR Developer Initiated
Formation	City Initiated/ Approval	City Initiated/ Approval	Property Owner Initiated and Support/City Approval	Property Owner Initiated and Support/City Approval	City Initiated OR Property Owner(s)
Business Incentives					
Tax Abatement	Yes - Via City powers	Yes - Via City Powers	No	No	No
Grants/Loans	Yes - Using Sales/Use Tax or City Funds	Yes - Using City Funds or Program Revenue	No	No	Yes
Funding/Revenue Generation	Sales/Use Tax (restrictions)	Business Operation Revenues	Property Tax, Assessments, Impact Fees, Charges for Services	Property Tax, Assessments	Property Tax Increment
Real Estate Controls	Yes, with Restrictions	Yes	Yes	No	Yes, with Restrictions
Place Management					
Clean and Safe Services	No	Yes - Needs funding	Yes	Yes	No
Programming/ Events	Yes	Yes - Needs funding	Yes	Yes	No
Infrastructure Improvements					
Fund	Yes - Sales/Use Tax	Yes - Needs Revenue Source	Yes	Yes	Yes
Build	No	Yes, with Restrictions	Yes	Yes	Yes
Manage	No	Yes	Yes	Yes	No

Source: Economic & Planning Systems

6. Economic and Fiscal Impacts

Approach and Overview

The estimated fiscal and economic impacts of the build out of the innovation district development program were analyzed. Two major impacts were estimated including tax revenues and economic impacts.

- **Fiscal Impacts** – The fiscal impacts are illustrated by the estimated annual tax revenue generated by the development program, including annual sales tax revenue and property tax increment from Tax Increment Reinvestment Zone (TIRZ).
- **Economic Impacts** – The economic impacts of the innovation district development program were estimated using the IMPLAN input-output economic model. IMPLAN is a software and database platform that allows users to estimate the impacts of land uses and development on specified areas of geography, in this case Bexar County. The economic impacts are estimated based on project construction costs and estimated jobs within the project. The outputs include one-time impacts of construction (economic impacts shown in total dollars and construction jobs generated shown in job years). The outputs also include annual ongoing economic impacts including total economic dollars and ongoing operational jobs including jobs directly on the project site (direct), indirect jobs, and induced jobs.

Development Program

The projected development program for the innovation district over the 2020 to 2040 time period is shown in **Table 17**. The innovation district is estimated to attract 1.1 million square feet of office space and 271,000 square feet of retail space. It will also include approximately 1,269 residential units, including 1,206 apartment and 63 for-sale attached units. The projected development program totals 2.7 million square feet comprised of 1.4 million square feet of commercial development and approximately 1.3 million square feet of residential development.

Table 17. Innovation District Development Program, 2020-2040

Land Use		2020-2040
Commercial		
Office/R&D	sq. ft.	1,132,761
Retail	sq. ft.	270,970
Subtotal		**1,403,731**
Residential		
Rental Housing	units	1,206
For-Sale Housing	units	63
Total Units	units	**1,269**
Subtotal	sq. ft.	**1,315,554**
Total	sq. ft.	**2,719,285**

Source: Economic & Planning Systems

Resident and Worker Generation Analysis

Future residents and employees that live and work within the innovation district are the drivers of the estimated sales tax revenue generated by the project and on-going annual economic impacts. The estimated annual household income from each residential unit type is shown in **Table 18**. The innovation district is projected to include 1,269 residential units with a mixture of 1,206 market rate apartments and 63 for-sale attached units. The innovation district is estimated to generate 3,470 residents with an average household income of $69,873. The average household income for each housing product type were estimated based on the average rental rate or home price for each product type.

Table 18. Resident Generation Summary

Description	Units	Res. Per Household	Est. Residents	Est. HH Income
Rental Housing	1,206	2.7	3,268	$68,760
For-Sale Housing	63	3.2	202	$87,859
Total/Average	**1,269**		**3,470**	**$69,873**

Source: Economic & Planning Systems

The estimated jobs and annual wages from nonresidential uses in the innovation district are shown in **Table 19**. The district will have approximately 1.3 million square feet of office/Research & Development (R&D) space, which will generate 4,165 jobs on site with an average annual wage of $75,580. These jobs and wages are estimated based on the industry sector breakdown shown below in Table 11. Office/R&D space will generate jobs in Professional, Scientific and Technical Services, Pharmaceutical Manufacturing, Military, Management, and Administrative and Support industries. Additionally, the district will have approximately 271,000 square feet of retail space, which will generate 542 jobs on site with an average annual wage of $24,333. These are jobs in Retail Trade and Food Services and Drinking Places.

Table 19. Worker Generation Summary

Description	Sq. Ft.	Jobs per SF	Est. Jobs	Est. Annual Wage[1]
Office/R&D[2]	1,132,761	272	4,165	$75,580
Retail[3]	270,970	500	542	$24,333
Total/Average	**1,403,731**		**4,707**	**$69,679**

Source: Economic & Planning Systems

[1] Annual wages estimated based on average annual wage in Bexar County for corresponding industry

[2] Office/R&D employment split between seven NAICS industries: 9281, 3254, 5415, 5416, 5417, 55, & 561

[3] Retail employment split between two NAICS industries: 722 at 75% and 44-45 at 25%

Retail Spending

A retail spending model was developed to estimate the retail sales that would be generated from residents and workers living and working within the district. The retail spending analysis estimates the annual retail spending potential for residents and workers by retail store category. Sales tax revenues are then estimated based on the portion of sales captured within the Core District and Influence Area.

The first step in the spending analysis is to estimate the total personal income (TPI) generated by the residents living in the innovation district. The residents are estimated to have a TPI of $242.5 million, as shown in **Table 20**. The TPI is calculated by multiplying the number of new households (3,470) by the average household income ($69,873). The TPI of the residents is applied to the average percent of retail sales made by Texas residents by retail store category. On average, a Texas resident spends 41.4 percent of their income on retail goods based on data from the 2017 US Census of Retail Trade for Texas. The project residents are estimated to generate $100.4 million in annual retail sales, as shown.

Table 20. Innovation District Residents' Expenditure Potential, 2040

Store Type	Retail Sales % TPI (2017)	2040 ($000s)
Households		3,470
Avg. Household Income		$69,873
Total Personal Income (TPI)	**100%**	**$242,493**
Convenience Goods		
Supermarkets and Other Grocery Stores	6.8%	$16,550
Convenience Stores (incl. Gas Stations)	4.8%	$11,626
Beer, Wine, & Liquor Stores	0.9%	$2,148
Health and Personal Care	3.1%	$7,510
Total Convenience Goods	**15.6%**	**$37,834**
Shoppers' Goods		
General Merchandise		
Department Stores	0.7%	$1,787
Warehouse Clubs & Supercenters	6.8%	$16,421
Subtotal	**7.5%**	**$18,209**
Other Shoppers' Goods		
Clothing & Accessories	2.8%	$6,767
Furniture & Home Furnishings	1.3%	$3,144
Electronics & Appliances	1.0%	$2,447
Sporting Goods, Hobby, Book, & Music Stores	1.0%	$2,390
Miscellaneous Retail	1.0%	$2,473
Subtotal	**7.1%**	**$17,220**
Total Shoppers' Goods	**14.6%**	**$35,429**
Eating and Drinking	**7.6%**	**$18,520**
Building Material & Garden	**3.5%**	**$8,594**
Total Retail Goods	**41.4%**	**$100,377**

Source: 2017 Census of Retail Trade; Economic & Planning Systems

The retail expenditure potential from workers employed on the project site was also estimated in addition to the resident expenditure potential. Based on surveys completed by the International Council of Shopping Centers (ICSC) the average office worker spends $5,272 annually on retail goods and services while at work. The total employment estimated for the innovation district was used to estimate worker spending. The total employment was discounted by 20.0 percent to account for workers who are also district residents to avoid double counting. The annual expenditure potential by store type is estimated in **Table 21**. The 3,765 non-resident workers in the district have a total annual expenditure potential of $19.9 million.

Table 21. Innovation District Employees' Expenditure Potential, 2040

	Weekly Spending	Annual Spending [1]	Total Annual Expenditure Potential
Employment			4,707
Nonresident Employees			80.0%
Nonresident Employment			3,765
Restaurants	$26.29	$1,262	$4,751,384
Goods and Services			
Department Stores	$6.52	$313	$1,178,358
Discount Stores	$8.19	$393	$1,480,176
Drug Stores	$6.13	$294	$1,107,873
Grocery	$15.98	$767	$2,888,061
Clothing	$3.25	$156	$587,372
Shoe	$2.43	$117	$439,173
Sporting Goods	$2.16	$104	$390,376
Electronics/Phone/Computers	$4.86	$233	$878,346
Jewelry	$3.92	$188	$708,460
Office Supplies	$7.37	$354	$1,331,978
Warehouse Clubs	$7.80	$374	$1,409,692
Other Goods	$3.95	$190	$713,882
Personal Care	$7.83	$376	$1,415,114
Personal Services	$3.16	$152	$571,106
Goods and Services Total	**$83.55**	**$4,010**	**$15,099,966**
Total	**$109.84**	**$5,272**	**$19,851,350**

1 - Annual is estimated as 48 weeks to reflect time off

Source: ICSC; Economic & Planning Systems

Capture rates were applied to the total expenditure potential of residents and workers based on retail categories anticipated to develop within the innovation district. The total expenditure potential for residents and workers in the district is $120.2 million. Based on the estimated capture rates, the residents and workers are estimated to generate $43.3 million in annual retail sales in the innovation district, as shown in **Table 22**.

Table 22. Innovation District Estimated Annual Retail Sales, 2040

Store Type	Innovation District			Capture Rate	Estimated Sales
	Resident Exp. Potential	Employee Exp. Potential	Total Exp. Potential		
Convenience Goods					
Supermarkets	$16,549,696	$2,888,061	$19,437,756	50%	$9,718,878
Convenience Stores (incl. Gas Stations)	$11,626,485	$0	$11,626,485	50%	$5,813,242
Specialty Food and Beer, Wine, & Liquor Stores	$2,148,102	$0	$2,148,102	50%	$1,074,051
Health and Personal Care	$7,510,181	$3,094,092	$10,604,273	50%	$5,302,137
Total Convenience Goods	**$37,834,463**	**$5,982,153**	**$43,816,616**		**$21,908,308**
Shoppers' Goods					
General Merchandise					
Department Stores	$1,787,202	$2,658,534	$4,445,736	0%	$0
Warehouse Clubs & Supercenters, other GM	$16,421,327	$1,409,692	$17,831,018	0%	$0
Subtotal	**$18,208,529**	**$4,068,225**	**$22,276,754**		**$0**
Other Shoppers' Goods					
Clothing & Accessories	$6,767,011	$1,026,545	$7,793,556	25%	$1,948,389
Furniture & Home Furnishings	$3,144,286	$0	$3,144,286	0%	$0
Electronics & Appliances	$2,446,652	$878,346	$3,324,998	0%	$0
Sporting Goods, Hobby, Book, & Music Stores	$2,389,513	$1,098,837	$3,488,349	25%	$872,087
Miscellaneous Retail	$2,472,769	$2,045,860	$4,518,629	25%	$1,129,657
Subtotal	**$17,220,231**	**$5,049,588**	**$22,269,819**		**$3,950,134**
Total Shopper's Goods	**$35,428,760**	**$9,117,813**	**$44,546,573**		**$3,950,134**
Eating and Drinking	**$18,520,102**	**$4,751,384**	**$23,271,486**	75%	**$17,453,614**
Building Material & Garden	**$8,593,655**	**$0**	**$8,593,655**	0%	**$0**
Total Retail Goods	**$100,376,980**	**$19,851,350**	**$120,228,330**		**$43,312,056**

Source: 2017 Census of Retail Trade; Economic & Planning Systems

Fiscal Revenue Analysis

This section provides estimates of fiscal revenues generated by the innovation district. The sales and property taxes from the Core District and Influence Area are estimated.

Sales Tax

The innovation district is estimated to generate $43.3 million in retail sales. The estimated sales tax revenue from taxable retail sales is provided below in **Table 23**. The total sales tax rate in San Antonio is 8.25 percent. The $43.3 million in taxable sales generated by the district will generate an estimated $3.6 million in sales tax annually. This includes approximately $866,200 in sales tax revenue directly to the city based on the San Antonio cumulative sales tax rate of 2.0 percent and $2.7 million in revenue to the State of Texas based on the state sales tax rate of 6.25 percent.

Table 23. Estimated Annual Sales Revenue

Description	Rate	Est. Sales Tax
Estimated Sales		**$43,312,056**
Sales Tax		
City of San Antonio	1.000%	$433,121
SA Ready to Work Program	0.125%	$54,140
SA Pre-K 4 SA Initiative	0.125%	$54,140
SA Advanced Transportation District	0.250%	$108,280
SA Metropolitan Transit Authority (MTA)	0.500%	$216,560
State of Texas	6.250%	$2,707,003
Total	**8.250%**	**$3,573,245**

Source: City of San Antonio; Economic & Planning Systems

Property Tax

Property market values were used as a basis for estimating Tax Increment Reinvestment Zone (TIRZ) revenue for a 25-year period, from 2020 to 2044, in the Core District and Influence Area. The property tax increment is based on the assessed value of new development from the projected development program. To estimate the TIRZ revenue, EPS assumes the district will buildout over a 20-year period with 5.0 percent of the development program delivering each year until reaching buildout in 2041.

The Core District is estimated to have over 1.0 million square feet of commercial development at buildout. This includes 906,209 square feet or 80 percent of the total office/R&D development and 135,485 square feet or 50 percent of the retail development for the innovation district. Additionally, it is estimated to capture 50 percent of the total residential development or 603 apartment units and 32 attached units. The Core District is estimated to have a total valuation of $434.5 million at buildout, as shown in **Table 24**.

The Influence Area is estimated to capture 362,000 square feet of commercial development at buildout in addition to the development in the Core District. This includes 226,552 square feet or 20 percent of the total office/R&D development and 135,485 square feet or 50 percent of the retail development for the innovation district. The Influence Area is estimated to capture 50 percent of the residential development or 603 apartment units and 32 attached units. This results in an estimated valuation of $264.6 million.

Table 24. Estimated New Property Value by Use Type

Description	Factor	Size	Value per SF/Unit	Est. Value
Core District				
Office	sq. ft.	906,209	$250	$226,552,200
Retail	sq. ft.	135,485	$215	$29,129,275
Rental Housing	units	603	$277,728	$167,469,973
For-Sale Housing	units	32	$361,046	$11,372,961
Total				**$434,524,409**
Influence Area				
Office	sq. ft.	226,552	$250	$56,638,050
Retail	sq. ft.	135,485	$215	$29,129,275
Rental Housing	units	603	$277,728	$167,469,973
For-Sale Housing	units	32	$361,046	$11,372,961
Total				**$264,610,259**
Total				
Office	sq. ft.	1,132,761	$250	$283,190,250
Retail	sq. ft.	270,970	$215	$58,258,550
Rental Housing	units	1,206	$277,728	$334,939,946
For-Sale Housing	units	63	$361,046	$22,745,922
Total				**$699,134,668**

Source: Economic & Planning Systems

The appraised value of the development program is estimated at 90 percent of the market value. In Texas, the appraised value is 100 percent of the assessed value for commercial and residential properties. Additionally, the assessed property valuation has a one-year lag to account for the time between when the property is appraised by the County Assessor and when property taxes are collected. In Texas, properties are re-assessed every three years.

In 2044, the Core District is estimated to have a total assessed value of $550.6 million or an annual average of $22.9 million over the 25-year period, shown in **Table 25**. From 2020 to 2044, the Core District is estimated to generate a total of $45.2 million in property tax increment or an average of $1.9 million annually. This includes $17.7 million from the City of San Antonio Maintenance and Operations, $10.8 million from the City of San Antonio Debt Service, and $14.1 million from Bexar County. Additionally, a special district tax is estimated for the innovation district of $0.05 per $100 of assessed value. This special district tax would generate a total of $2.6 million or an average of $106,600 per year.

The Influence Area is estimated to have a total assessed value of $335.2 million in 2044 or an annual average of $14.0 million over the 25-year period. From 2020 to 2044, the Influence Area is estimated to generate a total of $27.5 million in property tax increment or an average of $1.1 million annually. This includes $10.8 million from the City of San Antonio Maintenance and Operations, $6.6 million from the City of San Antonio Debt Service, and $8.6 million from Bexar County. Based on a special district tax of $0.05 per $100 of assessed value, the Influence Area would generate $1.6 million in revenue or an average of $64,900 per year.

Table 25. Estimated Assessed Value and TIRZ Revenue, 2020-2044

Description	Rate	2020-2044 Avg. Ann. #	2020-2044 Total
Core District			
Appraised Value		$23,285,826	$558,859,822
Assessed Value (1-yr lag)		$22,941,700	$550,600,810
TIRZ Revenue			
City of San Antonio M&O	0.346770 per $100 AV	$738,982	$17,735,576
City of San Antonio Debt Service	0.211500 per $100 AV	$450,716	$10,817,182
Bexar County	0.276331 per $100 AV	$588,874	$14,132,968
Special District Tax	0.050000 per $100 AV	$106,552	$2,557,253
Total		**$1,885,124**	**45,242,979**
Influence Area			
Appraised Value		$14,177,348	$340,256,342
Assessed Value (1-yr lag)		$13,967,830	$335,227,924
TIRZ Revenue			
City of San Antonio M&O	0.346770 per $100 AV	$449,922	$10,798,132
City of San Antonio Debt Service	0.211500 per $100 AV	$274,414	$6,585,936
Bexar County	0.276331 per $100 AV	$358,530	$8,604,720
Special District Tax	0.050000 per $100 AV	$64,873	$1,556,959
Total		**$1,147,739**	**27,545,746**
Total			
Appraised Value		$37,463,174	$899,116,165
Assessed Value (1-yr lag)		$36,909,531	$885,828,734
TIRZ Revenue			
City of San Antonio M&O	0.346770 per $100 AV	$1,188,904	$28,533,708
City of San Antonio Debt Service	0.211500 per $100 AV	$725,130	$17,403,118
Bexar County	0.276331 per $100 AV	$947,404	$22,737,688
Special District Tax	0.050000 per $100 AV	$171,426	$4,114,212
Total		**$3,032,864**	**72,788,725**

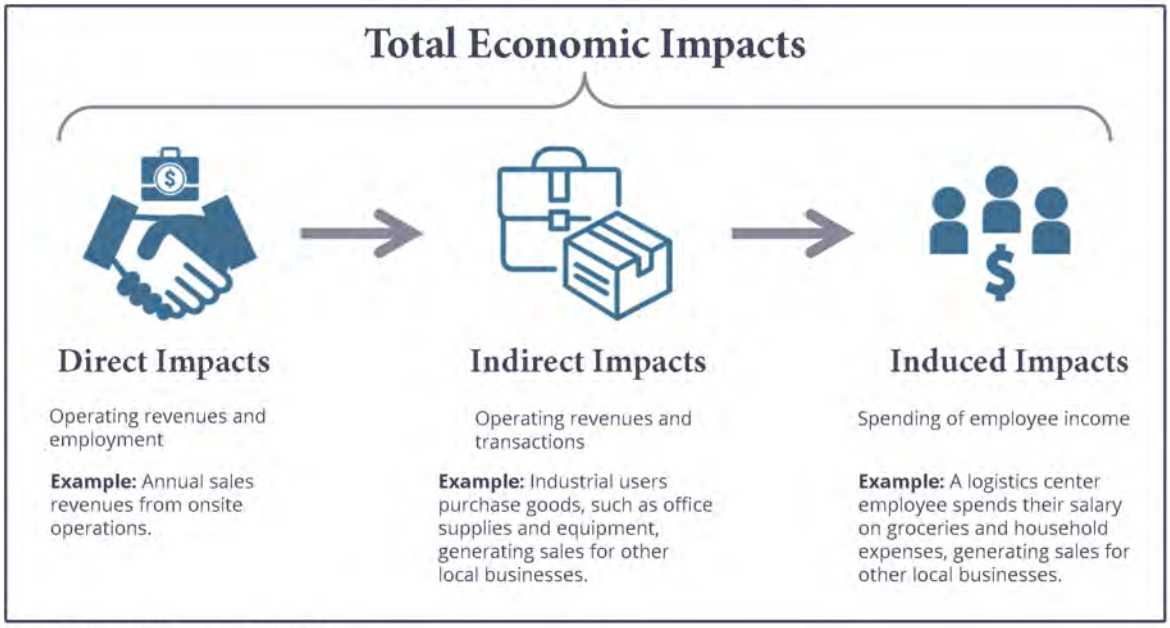
Source: Economic & Planning Systems

Economic Impact Analysis

EPS prepared an Economic Impact Analysis of the proposed mixed-use project. The purpose is to estimate the quantifiable one-time construction and ongoing operational impacts of the proposed project on the local economy with respect to jobs, income, and total economic output. The economic stimulus generated by the project will have a multiplying effect throughout the economy as local businesses, consumers, and employees associated with the project make local expenditures. This Economic Impact Analysis quantifies these impacts using an input-output (I/O) economic modeling system that measures the change in regional economic activity resulting from a specific economic stimulus.

In this Economic Impact Analysis, the local economy is defined as Bexar County, and the economic impacts measured include the direct contributions of the project, as well as indirect and induced impacts resulting from project construction and operations as illustrated in **Figure 15**.

Figure 15. Economic Impact Analysis



Source: Economic & Planning Systems, Inc.

The inputs into the IMPLAN economic model are shown in **Table 26**. The primary inputs to the model are the construction costs of the development program and the estimated number of jobs (by industry) that will be located within the district at buildout. The NAICS industry breakdown included for office/R&D and retail job generation is shown below in **Table 27**.

Table 26. Innovation District IMPLAN Inputs

Description	SF/Units	Cost per SF/unit	Dev. Cost	Jobs
Commercial				
Office/R&D	1,132,761	$250	$283,190,250	4,165
Retail	270,970	$215	$58,258,550	542
Total	**1,403,731**		**$341,448,800**	**4,707**
Residential				
Rental Housing	1,206	$277,728	$334,939,946	---
For-Sale Housing	63	$361,046	$22,745,922	---
Total	**1,269**		**$357,685,868**	

Source: Economic & Planning Systems

Table 27. NAICS Categories

Description	NAICS	Pct.	Jobs
Office/R&D			
National Security and International Affairs	9281	15.0%	625
Pharmaceutical and Medicine Manufacturing	3254	20.0%	833
Computer Systems Design and Related Services	5415	15.0%	625
Management, Scientific, and Technical Consulting Services	5416	10.0%	416
Scientific Research and Development Services	5417	25.0%	1,041
Management of Companies and Enterprises	55	5.0%	208
Administrative and Support Services	561	10.0%	416
Total		**100.0%**	**4,165**
Retail			
Retail Trade	44-45	25.0%	135
Food Services and Drinking Places	722	75.0%	406
Total		**100.0%**	**542**

Source: Economic & Planning Systems

The innovation district has an estimated construction cost of $699 million for commercial and residential development, as shown in **Table 28**. The construction of the project is estimated to generate a total one-time economic output to the Bexar County economy of $1.3 billion. The construction of the project will also generate the need for 7,979 total job years.

Table 28. Innovation District One-Time Construction Impacts

Activity/Impact Categories	Impact Type			Total One Time Impacts
	Direct	Indirect	Induced [1]	
Key Input				
Project Construction Costs	$699,134,668			
One-Time Construction Impacts				
Bexar County Output [2]				
Industry Output (excl. Income)	$712,900,000	$156,230,000		**$869,130,000**
Income [3]	$444,160,000	$52,300,000		**$496,460,000**
Total Output	**$1,157,060,000**	**$208,530,000**	**$0**	**$1,365,590,000**
Bexar County Employment (Job years) [4]	**7,107**	**872**		**7,979**

Source: IMPLAN, 2019 Dataset, Bexar County, Economic & Planning Systems

[1] Note that total construction impacts include direct and indirect impacts only; induced impacts were not estimated because construction activities are temporary and thus are not anticipated to generate net new household expenditures in the local economy..
[2] Analysis based on Bexar County data. Output is the amount of business expenditures on goods and services retained within the local economy.
[3] Includes employee compensation, proprietors income, and other income (industry profits, rents, and royalties).
[4] Employment includes both full-time and part-time workers. Job years refer to the number of jobs in each year summed over the entire estimated period of construction of the Project. For example, a single worker employed for two years would equate to two job years.

The district is estimated to result in space to accommodate 4,705 jobs within multiple industry sectors within the office/R&D and retail uses. This total employment number will be reached at year 20, which is the estimated buildout of the district. The total annual ongoing operating impacts at buildout (year 20) on the Bexar County economy from the jobs located within the district is estimated to be $3.1 billion. The 4,705 direct jobs will result in an additional 3,042 indirect jobs and 2,491 induced jobs, as shown in **Table 29**.

Table 29. Innovation District Annual Ongoing Operations Impacts

Activity/Impact Categories	Impact Type			Total Annual Ongoing Impacts
	Direct	Indirect	Induced	
Key Input				
Ongoing Project Employment	4,705			
Annual Ongoing Operating Impacts				
Bexar County Output [1]				
Industry Output (excl. Income)	$1,565,270,000	$586,540,000	$364,160,000	**$2,515,970,000**
Income [2]	$343,740,000	$173,000,000	$119,340,000	**$636,080,000**
Total Bexar County Output	**$1,909,010,000**	**$759,540,000**	**$483,500,000**	**$3,152,050,000**
Bexar County Employment (Annual Average) [3]	**4,705**	**3,042**	**2,491**	**10,238**

Source: IMPLAN, 2019 Dataset, Bexar County, Economic & Planning Systems
[1] Analysis based on Summit County data. Output is the amount of business expenditures on goods and services retained within the local economy.
[2] Includes employee compensation, proprietors income, and other income (profits, rents, and royalties).
[3] Reflects stabilized operational employment Project. Employment includes both full-time and part-time workers.

The innovation district will generate a diversity of jobs both on site and also indirect and induced jobs. **Table 30** shows the indirect and induced employment generated by the district in key industries including 730 jobs in Administrative and Waste Management Services. Additional industries with indirect and induced employment being generated by the project include Professional, Scientific, and Technical Services, Health Care, Accommodation and Food Services, Transportation and Warehousing, and Management of Companies.

Table 30. Summary of Key Industry Employment – Indirect and Induced Impacts

Industry	Key Indirect & Induced Emp. [1]
Key Industry Category	
Administration/Waste Services	730
Professional/Technical Services	676
Health Care	513
Accommodations/Food Services	481
Transportation/Warehousing	452
Management	420
Retail Trade	417
Real Estate	366
Wholesale Trade	350
Finance	323
Other	323
Information	137
Arts/Recreation	126
Other Industries	219
Total	**5,533**

Source: IMPLAN; Economic & Planning Systems

[1] Reflects key industry indirect and induced employment supported by the direct economic activity generated by the project.

Phase 1 Economic and Fiscal Impact

To catalyze the growth of the innovation district, TRTF has proactively identified potential anchor users for the district. The primary focus is attracting a military research facility to the district. To facilitate the military locating in the district, TRTF has purchased the "G.J. Sutton" property a half block south of the Merchants Ice campus from the State of Texas. This site is envisioned as the catalyst project to further spur and accelerate the growth of the innovation district and is considered "Phase 1" of the buildout of the plan.

The G.J. Sutton development is envisioned to be a large office and research laboratory campus, illustrated in **Figure 16**. The project covers over 6 acres and is planned to include 680,000 square feet of development in six buildings. The majority of which, 646,000 square feet, will be office and laboratory space, as shown in **Table 31**. The rest will be supporting retail/commercial space (34,000 square feet). This effort is the first major step needed to implement the development program for the district.

The G.J. Sutton development accounts for nearly half of the forecasted demand for office space within the district and account for a quarter of all development in the district estimated program. Significant portions of this project are assumed to completed by 2025. The economic and fiscal benefits that this catalytic development will generate were estimated to help illustrate the value of this Phase 1 effort and illustrate the return on investment for project partners including the City of San Antonio and Bexar County.

Figure 16. G.J. Sutton Complex Conceptual Plan

Table 31. Phase 1 Development Program, 2020-2025

Land Use		Phase 1 2020-2025	Phase 1 % Total District	Total 2020-2040
Commercial				
Office/R&D	sq. ft.	646,000	46.0%	1,132,761
Retail	sq. ft.	34,000	2.4%	270,970
Subtotal		**680,000**	**48.4%**	**1,403,731**
Residential				
Rental Housing	units	---	---	1,206
For-Sale Housing	units	---	---	63
Total Units	units	---	---	**1,269**
Subtotal	sq. ft.	---	---	**1,315,554**
Total	sq. ft.	**680,000**	**25.0%**	**2,719,285**

Source: Economic & Planning Systems

EPS used the same methodology to estimate the economic and fiscal impacts for Phase 1 as it did for the entire innovation district. The amount and value of development in the G.J. Sutton project, along with the number of employees estimated to be located in the project, were used to estimate the economic and fiscal benefits.

The 646,000 square feet of office and laboratory space in the project is estimated to support 2,375 jobs, which is half the forecast employment of the project at buildout. The supporting 34,000 square feet retail space will accommodate another 68 jobs and will attract spending from workers inside the campus and visitors from outside.

Sales Tax

The retail development program and sales in the district to workers employed in the G.J. Sutton project are estimated to generate $14.1 million in annual retail sales, which accounts for just less than a third (32.7%) of the estimated sales by the district at buildout. The annual sales will generate $1.2 million in total sales tax revenue annually, of which $141,436 will be generated for the City starting 2025 (**Table 32**).

Table 32. Phase 1 Estimated Annual Sales Revenue

Description	Rate	Phase 1 Est. Sales Tax	% Total Innov. District
Retail Sales			
Taxable Sales in Retail Space		$10,200,000	
Campus Employee Sales		$3,943,588	
Total Estimated Sales		**$14,143,588**	**32.7%**
Sales Tax			
City of San Antonio	1.000%	$141,436	4.0%
SA Ready to Work Program	0.125%	$17,679	0.5%
SA Pre-K 4 SA Initiative	0.125%	$17,679	0.5%
SA Advanced Transportation District	0.250%	$35,359	1.0%
SA Metropolitan Transit Authority (MTA)	0.500%	$70,718	2.0%
State of Texas	6.250%	$883,974	24.7%
Total	**8.250%**	**$1,166,846**	**32.7%**

Source: City of San Antonio; Economic & Planning Systems

Property Tax

The G.J Sutton project is estimated to have an appraised value of $202 million dollars once built (construction is assumed to be completed in 2025). The estimate appraised value will generate $561,000 in annual property tax for the City's General Fund and $342,000 for the City's Debt Service Fund. In total, the project will generate $17.1 million property tax revenue from 2025 to 2044 for the City of San Antonio, as shown in **Table 33**. The project will also generate $8.5 million for Bexar County ($447,000 annually).

Table 33. Phase 1 Estimated Assessed Value and Property Tax Revenue, 2025-2044

Description	Rate	2025-2044 Ann. #	2025-2044 Total	% Total Innov. District
Phase 1				
Appraised Value			$201,602,300	22.4%
Assessed Value (1-yr lag)			$195,687,641	22.1%
TIRZ Revenue				
City of San Antonio M&O	0.346770 per $100 AV	$560,649	$10,652,336	14.6%
City of San Antonio Debt Service	0.211500 per $100 AV	$341,948	$6,497,013	8.9%
Bexar County	0.276331 per $100 AV	$446,765	$8,488,539	11.7%
Special District Tax	0.050000 per $100 AV	$80,839	$1,535,937	2.1%
Total		**$1,430,201**	**$27,173,824**	**37.3%**

Source: Economic & Planning Systems

Economic Impact

The Phase 1 project will generate space for 2,443 employees at buildout in 2025. The project is estimated to have a total construction cost of $169 million. These totals (construction costs and jobs) were used as inputs in the IMPLAN model to estimate annual economic impacts.

Table 34. Phase 1 IMPLAN Inputs

Description	SF/Units	Cost per SF/unit	Dev. Cost	Jobs
Phase 1				
Office/R&D	646,000	$250	$161,500,000	2,375
Retail	34,000	$215	$7,310,000	68
Total	**680,000**		**$168,810,000**	**2,443**

Source: Economic & Planning Systems

The construction activity needed to build Phase 1 will generate demand for 1,701 job years over the construction process (2 to 3 years) and has a one-time economic impact of $325 million, as shown in **Table 35**.

Table 35. Phase 1 One-Time Construction Impacts

Activity/Impact Categories	Impact Type			Total One Time Impacts	% Total Innov. District
	Direct	Indirect	Induced [1]		
Key Input					
Phase 1 Construction Costs	$168,810,000				24.1%
One-Time Construction Impacts					
Bexar County Output [2]					
Industry Output (excl. Income)	$172,130,000	$47,110,000		**$219,240,000**	26.7%
Income [3]	$90,120,000	$15,580,000		**$105,700,000**	22.4%
Total Output	**$262,250,000**	**$62,690,000**	**$0**	**$324,940,000**	25.2%
Bexar County Employment (Job years) [4]	**1,459**	**242**		**1,701**	22.0%

Source: IMPLAN, 2019 Dataset, Bexar County, Economic & Planning Systems

[1] Note that total construction impacts include direct and indirect impacts only; induced impacts were not estimated because construction activities are temporary and thus are not anticipated to generate net new household expenditures in the local economy.

[2] Analysis based on Bexar County data. Output is the amount of business expenditures on goods and services retained within the local economy.

[3] Includes employee compensation, proprietors income, and other income (industry profits, rents, and royalties).

[4] Employment includes both full-time and part-time workers. Job years refer to the number of jobs in each year summed over the entire estimated period of construction of the Project. For example, a single worker employed for two years would equate to two job years.

Once Phase 1 is built (assumed to be 2025), the project will generate 2,444 direct jobs (jobs located in the project) that will generate $1.8 billion in annual ongoing economic impact to the region. The direct employment will also generate demand for another 3,071 indirect and induced jobs, as shown in **Table 36**. Phase 1 will generate 54 percent of the annual employment impacts and 56 percent of the annual monetary impacts to the region of the entire innovation district despite only accounting for 25 percent of the total development space (i.e. building square feet).

Table 36. Phase 1 Annual On-going Operations Impacts

Activity/Impact Categories	Impact Type			Total Annual Ongoing Impacts	% Total Innov. District
	Direct	Indirect	Induced		
Key Input					
Ongoing Phase 1 Employment	2,444				51.9%
Annual Ongoing Operating Impacts					
Bexar County Output [1]					
Industry Output (excl. Income)	$885,210,000	$331,360,000	$203,920,000	**$1,420,490,000**	56.5%
Income [2]	$191,340,000	$97,860,000	$66,790,000	**$355,990,000**	56.0%
Total Bexar County Output	**$1,076,550,000**	**$429,220,000**	**$270,710,000**	**$1,776,480,000**	56.4%
Bexar County Employment (Annual Average) [3]	**2,444**	**1,694**	**1,377**	**5,515**	53.9%

Source: IMPLAN, 2019 Dataset, Bexar County, Economic & Planning Systems

[1] Analysis based on Summit County data. Output is the amount of business expenditures on goods and services retained within the local economy.

[2] Includes employee compensation, proprietors income, and other income (profits, rents, and royalties).

[3] Reflects stabilized operational employment Project. Employment includes both full-time and part-time workers.

Comparing the annual impact of Phase 1 to the total annual impact of the innovation district at buildout illustrates the tremendous value this catalytic project generates. Phase 1 is estimated to generate a third of the annual sales tax created in the district, and half of the annual property tax, as shown in **Table 37**. Phase 1 accounts for 56 percent of the total economic impact of the district, despite accounting for less than a quarter of the development activity estimated for the district.

Table 37. Phase 1 Fiscal and Economic Impact

Item	Rate	Phase 1 (annual)	Phase 1% of Total	Total District (annual)
Fiscal Impact				
Est. Annual Sales Tax				
City of San Antonio	1.000%	$141,436		$433,121
SA Ready to Work Program	0.125%	$17,679		$54,140
SA Pre-K 4 SA Initiative	0.125%	$17,679		$54,140
SA Advanced Transportation District	0.250%	$35,359		$108,280
SA Metropolitan Transit Authority (MTA)	0.500%	$70,718		$216,560
State of Texas	6.250%	$883,974		$2,707,003
Total	**8.250%**	**$1,166,846**	**33%**	**$3,573,245**
Est. Annual Property Tax Revenue (Potential TIRZ or PID Revenues)				
City of San Antonio M&O	0.346770 per $100 AV	$560,649		$1,188,904
City of San Antonio Debt Service	0.211500 per $100 AV	$341,948		$725,130
Bexar County	0.276331 per $100 AV	$446,765		$947,404
Special District Tax (PID)	0.050000 per $100 AV	$80,839		$171,426
Total		**$1,430,201**	**47%**	**$3,032,864**
Economic Impact				
One-Time Economic Impacts of Construction				
One-Time Construction Impacts [1]		**$324.9 M**	**24%**	**$1.4 B**
One-Time Construction Jobs (Job Years) [2]		1,701	21%	7,979
Annual Ongoing Economic Impacts				
Annual Ongoing Operational Impacts [3]		**$1.8 B**	**56%**	**$3.2 B**
Annual Ongoing Operational Jobs (Annual Average) [4]		5,515	54%	10,238

Source: IMPLAN; Economic & Planning Systems

[1] Includes direct and indirect impacts.
[2] Employment includes both full-time and part-time workers. Job years refer to the number of jobs in each year summed over the entire construction period of the Project.
[3] Includes direct, indirect, and induced impacts of the anticipated land uses within the Project.
[4] Employment includes both full-time and part-time workers.