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RESEARCH VALLEY BIOCORRIDOR

CONCEPT MASTER PLAN

JANUARY 2011

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The *OneHealth Plus* concept recognizes the unbreakable linkage between human and animal health (One-Health), and further emphasizes that all health, and life itself, ultimately depends on sustainable agriculture and clean water (OneHealth Plus).

The *Research Valley Biocorridor* will be the world's first implementation of the OneHealth Plus concept. It will be an ecosystem to enhance collaboration among scientists, clinicians, students, government, commercial partners, and area residents. It will promote innovation and education, and accelerate regional economic growth.

The Research Valley Biocorridor will be a global destination: *a place to create the future.*

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i RESEARCH VALLEY BIOCORRIDOR EXECUTIVE SUMMARY

The Research Valley Biocorridor Concept Master Plan project is the first step in establishing a leading-edge international biotechnology zone in The Research Valley. A team of experts led by Broaddus Planning was retained by The Research Valley Partnership, Inc. (RVP), the regional economic development corporation. Together, the team outlined a framework for the physical, organizational, and financial structure of the Biocorridor. Deliverables for the project included a Concept Land Use Plan, a Concept Implementation Plan defining management and funding strategies, the Identification of Priority Infrastructure Projects including Rough Order of Magnitude Cost Estimates, and Definition of Next Steps.

Located at the western edge of Bryan-College Station, Texas, the 3,500-acre Biocorridor will be an international destination for education, research, development, commercialization and production of innovative technologies to improve global health. It will promote the collaboration of professionals from diverse scientific and engineering disciplines, and foster the seamless transition of basic research into world-changing products and services. The development will build upon the multitude of existing resources that already call the Research Valley Biocorridor home, including the Institute for Innovative Therapeutics™, Texas A&M Health Science Center, Texas A&M University (including the College of Veterinary Medicine and Biomedical Sciences and Texas A&M Engineering), Texas A&M AgriLife, and Project GreenVax. In addition to creating thousands of jobs for Texans, it will provide an ideal atmosphere for new product development, biosecurity and biomanufacturing, that will improve global health.

Over several months, the Broaddus Planning team worked collaboratively with the Biocorridor Task Force and regional stakeholders to develop a Concept Master Plan that both captures the vision of an innovative and collaborative environment and responds to local development requirements. A structured, interactive planning process fostered a high level of community engagement through formal presentations, steering committee work sessions, public meetings, community workshops and media outreach. This collaborative and iteractive process was critical in aligning expectations, garnering a broad base of support, and crafting a visionary plan.

The project was conceived in three phases – Initiation, Analysis, and Vision – in order to channel the work effort from a period of data collection to one of focused analysis and vision generation. The team considered physical site constraints, market trends, land ownership, demand for utilities infrastructure, jurisdictional nuances, funding resources, stakeholder aspirations, and existing regional assets as it developed a one-of-a-kind Concept Master Plan suited specifically to the Research Valley Biocorridor and its goals. The resulting Concept Land Use Plan creates a vibrant environment for research and collaboration unequalled in other 21st century mixed-use developments. It features a hierarchical network of primary, secondary, and tertiary streets connecting several distinct mixed-use districts, including a town center, the Texas A&M Health Science Center, the Texas A&M University College of Veterinary Medicine and Biomedical Sciences and Texas A&M AgriLife. The street pattern generates a flexible and pedestrian-friendly block-structure that suits a variety of development types while maintaining a community-oriented, interconnected, and attractive urban environment. The density of the plan ensures sustainable and efficient land use that helps minimize infrastructure costs, while preservation of critical creek bottoms and green belts, new trail networks and formal and informal open spaces respond ecologically to the Research Valley's existing natural environment.

The Concept Implementation Plan seeks to establish a uniform playing field that is development-ready for prospective users on an incremental basis. It recommends the use of an Interlocal Agreement between the City of Bryan, City of College Station, Brazos County and the Texas A&M University System to address land-use regulations, infrastructure (funding), uniform utility rates, and standardized economic development incentives that are required to ensure an equitable process and the establishment of a sense of place.

Key Priority Master Infrastructure Projects were identified that will enable incremental and phased Research Valley Biocorridor development. These projects include the extension of the Biocorridor Boulevard from the existing Health Science Center campus to Turkey Creek Boulevard and on to FM 2818, the expansion of F&B Road, and improvements to Turkey Creek Boulevard, as well as related supporting utilities upgrades. The Master Infrastructure Projects identified in the plan create the spine of the Biocorridor. Furthermore, the Concept Implementation Plan recommends a "fund as you go" strategy with a focus on Phase 1a Master Infrastructure.

Significant consideration has been given to implementation of the Concept Master Plan. Organizational structure, infrastructure, governance and funding must be addressed. On the following page is an implementation plans table highlighting proposed current plans and future possibilities.

IMPLEMENTATION PLANS

ITEM	CURRENT PLAN	FUTURE POSSIBILITY
Organizational Structure	Interlocal agreements to establish uniform land use regulations, incentives, utility rates	Special district with shared governance, shared costs and benefits, dedicated funding
Infrastructure	Establish priority infrastructure projects and implement incrementally (Phase 1a near-term priority)	Create comprehensive master infrastructure for the entire corridor
Governance	Implementation Committee with representation from stakeholders	Unified special district leadership team with statutory authorities
Funding	Fund "as you go" with each entity funding only infrastructure within own jurisdiction	Single district with committed, shared funding and benefit

NEXT STEPS: ORGANIZATION, BUSINESS DEVELOPMENT, ACADEMIC

Organization

1. Signing of Guiding Principles Declaration by "Biocorridor Partners"
2. Establish Implementation Committee and select point person to lead implementation
3. Develop implementation timeline with critical milestones and decision points
4. Communicate concept plan and engage stakeholders: - faculty, students, state and federal leadership
5. Endorsement of concept plan by strategic partners via Guiding Principles Declaration (cities, county, academic institutions, others)
6. Develop initial draft interlocal agreement and set timeline for approval by cities, county, Texas A&M University System

Business Development

1. Priority 1: Finalize projects in pipeline
2. Pursue and secure registration of OneHealth Plus Biocorridor™ and logo
3. Develop launch plan, branding, and timeline (May 2011)
4. Establish a business development strategy, responsibility, authority, and funding
5. Identify private investors, developers, and other sources of capital
6. Pursue federal agency approval or legislation to enable eligibility of the entire Biocorridor for USDA Business & Industry Guarantee Loans

Academic

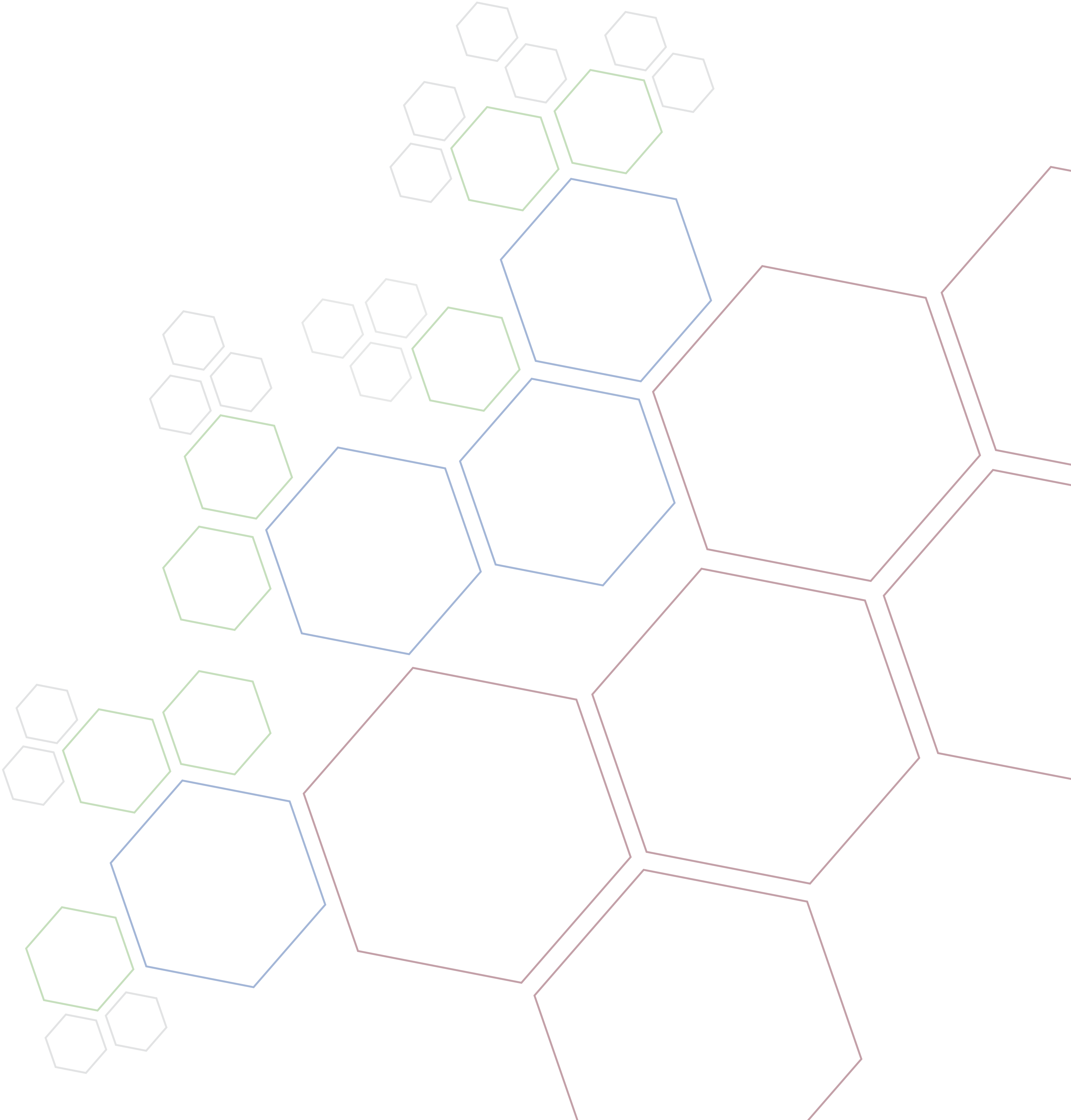
1. Initiate plan for a STEM-oriented school within the Biocorridor focused on Biotechnology, Space and Life Sciences
2. Harmonize and prepare research strategy for OneHealth Plus™ academic research and educational programs:
    a. OneHealth Diagnostics anchored by Texas Veterinary Medical Diagnostics Laboratory program: Both reference lab and development of new diagnostics
    b. OneHealth Computational Biology: Genomics, comparative medicine, epidemiology, comparative effectiveness
    c. OneHealth Simulation Center
    d. OneHealth Program in Nutrition and Functional Foods for Humans and Animal
    e. Architecture, policy, ethics, sociology.

Concept Master Plan: view of mixed-use "bio-park" district and town center

The Concept Master Plan for the Research Valley Biocorridor is both visionary and responsive. The idea behind the project – the creation of a biotechnology epicenter focused on the novel OneHealth Plus™ initiative in a planned urban environment is unique, and sets the stage for innovative growth over the next several decades. The Concept Master Plan builds upon the momentum already established within the Biocorridor, and proposes critical organizational and physical infrastructure recommendations. The vision articulated within the Concept Master Plan provides a roadmap for further development and refinement as the project continues to advance.

Special thanks to The Research Valley Partnership Board of Directors, Dr. Brett Giroir, the Research Valley Biocorridor Task Force and Workgroup, and the multitude of individual stakeholders that helped provide the vision.

The Research Valley's OneHealth Plus™ Biocorridor vision will bring recognition to Texas A&M and the Research Valley as pioneers.



1 INTRODUCTION

RESEARCH VALLEY BIOCORRIDOR

The OneHealth initiative recognizes the unity of human and animal health, and the absolute necessity for physicians, veterinarians, and health-related scientists to collaborate fully to solve global challenges. The initiative has been endorsed by leading experts and organizations throughout the world, including the American Medical Association, the American Veterinary Medical Association, and the Centers for Disease Control and Prevention (CDC).

Given the tremendous resources located in the Research Valley, including the faculty and students at Texas A&M, our physical infrastructure, multiple state and federal agencies, commercial partners, and an expanding, diverse community, the Research Valley has a unique opportunity to be the world's first comprehensive implementation of the OneHealth concept. However, we extend this concept even further (OneHealth "PLUS"), since we recognize that animal and human health are inextricably linked to sustainable agriculture and water resources, upon which we all depend. OneHealth Plus has now become a unifying theme for many of our current programs, and a driving force spurring future innovation, education, and commercial opportunities.

The Research Valley Biocorridor is the embodiment and implementation of the OneHealth Plus concept. It is geographically located at the intersection of cutting-edge centers for Plant, Animal, and Human research, development, education, and commercialization. It is the emerging epicenter of Texas' growing biomedical industry. Together, we will develop the Biocorridor into a dynamic environment in which entrepreneurs, industry leaders, researchers, faculty, students, and sponsors collaborate to solve critical challenges in global health, and spur economic growth and high tech professional opportunities for the region.

WHY THE RESEARCH VALLEY?

There are few other places in the world that match the Research Valley's resources, infrastructure, and expertise spanning agricultural and engineering research, development, and extension, and veterinary and human health.

PLANT

Texas A&M AgriLife is a leader in agricultural research, teaching, extension, and service to the world. AgriLife is a leader in developing new crop varieties for food and energy, while striving to preserve and effectively allocate scarce water resources. Its commitment to global health through agriculture is epitomized by the work of the late Dr. Norman Borlaug, whose legacy is celebrated every day through continuing service of the Norman-Borlaug Institute for International Agriculture.

ANIMAL

Among the nation's leading institutions, the College of Veterinary Medicine and Biomedical Sciences at Texas A&M University is dedicated to curing and preventing animal disease while creating new knowledge, new therapies, and new learning opportunities. One of every ten veterinarians now practicing has trained at Texas A&M, a remarkable fact given that there are only 31 colleges of Veterinary Medicine in the United States and Canada. The College has established innovative programs at The College has established innovative programs at the crossroads of human and animal health, most notably the Texas A&M Institute for Preclinical Studies, which is paving the way for new veterinary and human therapies in cancer, heart disease, advanced imaging, and trauma.

HUMAN

With a new location and campus in the Research Valley Biocorridor, Texas A&M Health Science Center (TAM-HSC) boasts world-class researchers and clinicians, a portfolio of original biomedical technologies, and access to a large and diverse patient population throughout the state. The TAM-HSC collaborates with many affiliates and draws from experts within its six academic units, providing a unique partnership opportunity for many bio-based companies. The TAM-HSC is also home to the Center of Excellence in Public Health and Water Research, which brings a systems approach to international problems in water availability and quality. Furthermore, interdisciplinary life sciences research is flourishing at Texas A&M University, which leads Texas in research expenditures among academic institutions and is among the top 20 institutions in the US. Texas A&M University is making large investments in life sciences infrastructure and faculty in what it is targeting as its next big growth area. Faculty are innovating in broad areas that span from new vaccines and antimicrobials, to cardiovascular devices, diagnostic equipment, and medical materials.

Another groundbreaking venture located within the Biocorridor, Project GreenVax, utilizes a relative of tobacco plants to produce vaccines on a global scale. This 145,000 sq ft facility holds promise to be the most capable vaccine research and manufacturing program in the world, with a capacity to produce as many as 100 million doses of vaccines per month. The novel plant-based technology will also be more responsive to emerging diseases such as pandemic flu, because of the short time interval required to produce a new vaccine against a new virus strain.

The responsive workforce development programs at Blinn College and the Texas Engineering Extension Services (TEEX), the supportive regional transportation infrastructure, and the hometown environment of Bryan and College Station add to the determination that the Research Valley Biocorridor is Texas' premier destination for biomedical research and development today and for years to come.

The Research Valley Biocorridor is gaining momentum as the epicenter of the State's emerging biotechnology industry cluster and the "third coast" of pharmaceutical manufacturing.

Why? A focus on critical "preclinical" infrastructure and nimble, flexible capacity, coupled with the many world-class research centers, institutes, and agencies residing within the Texas A&M University System offer unprecedented partnership opportunities for industry, and growth within this biocorridor will generate thousands of jobs for Texans.

Entrepreneurial industry leaders have begun to settle in the Research Valley Biocorridor, bringing with them new ideas that will change pharmaceutical production in the future. The National Center for Therapeutics Manufacturing (NCTM), a first-in-class flexible, multi-technology GMP (Good Manufacturing Practices) research and development facility, is just one place where academia and commercial partners are able to develop and refine their biomedical drugs and devices in a scalable format. With strategic partners such as The University of Texas M. D. Anderson Cancer Center, NCTM incorporates a "flexible by design" philosophy with modular clean rooms technology - developed and manufactured locally – that allows for rapid production of precisely targeted quantities of vaccines and other medications.

1 INTRODUCTION

THE CONCEPT PLANNING PROCESS

MAKING IT HAPPEN

In early 2010, the RVP established the Biocorridor Task Force comprised of representatives from Brazos County, the Cities of Bryan and College Station, the Texas A&M University System, Texas A&M University, the Texas A&M Health Science Center, and Texas A&M AgriLife to provide oversight in the development of the concept plan for the Research Valley Biocorridor. The collaborative created by these stakeholders represents a unique initiative and true partnership effort. The consultant brought together over 300 people from both the public and the private sectors to establish a leading-edge biomedical zone in the Texas Research Valley that promotes scientific education and research, technology innovation and commercialization, and biotech business development. The Task Force then acted quickly to contract with a team of consultants led by Broaddus Planning to:

- Develop a Concept Master Plan
- Identify Priority Infrastructure Projects
- Recommend a Strategy for Implementation

The consultant brought together over 300 people from both the public and the private sectors via several stakeholder workshops, community listening sessions, technical discussions, research and presentations to engage the community's interest and commitment in the development of the Research Valley Biocorridor concept.

KEY ENGAGEMENT

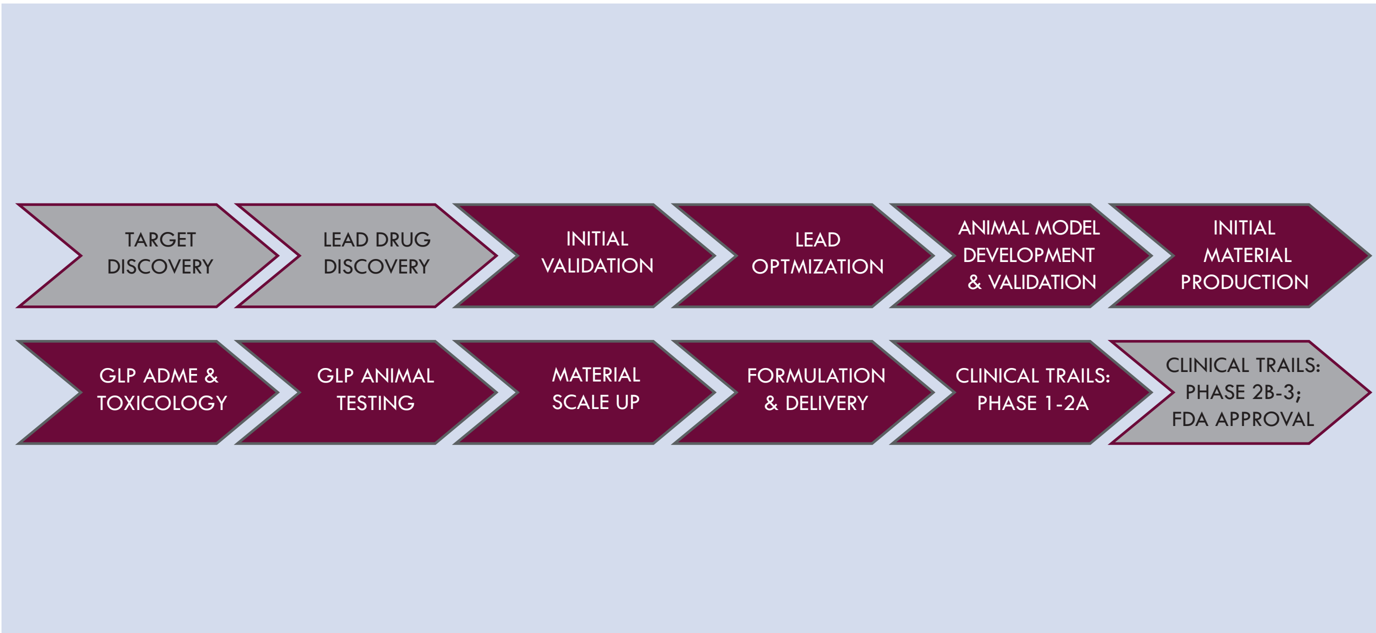
- Task Force
- Work Group (partner staff)
- Brazos County Leadership
- City of Bryan Leadership
- City of College Station Leadership
- City of Bryan Planning & Zoning Commission
- City of College Station Planning & Zoning Commission
- City of Bryan Staff: Planning, Public Works, Transportation
- City of College Station Staff: Planning, Public Works, Transportation
- Community Members
- Neighbors
- Business Community
- Blinn College
- TAMUS
- TAMU
- TAM-HSC
- TAM-AgriLife
- TAMU Vet-Med
- TEEX

TASK FORCE MEETINGS

THE GREATER GOOD

Traditionally, the method of getting new vaccines and medication to patients has been dependent upon lengthy, billion-dollar processes that leave thousands of good ideas on the cutting room floor. The lack of accessible and affordable infrastructure for intermediate and advanced development has lead to a bottleneck in the industry that threatens the health of people around the world. Vaccines are unable to be developed and manufactured rapidly and in large volumes. Personalized medications are too expensive for widespread use. The extensive investment required to bring life-saving products into the marketplace in a traditional sense prohibits our ability to respond swiftly, and leaves us unnecessarily exposed. Moreover, human and animal health have been relegated to separate silos, with little integration and synergy – and with little acknowledgement of underlying challenges related to food and water supplies.

The Research Valley Biocorridor concept is an attempt to do better. It is our mission to approach global health holistically, integrating human and animal science for the betterment of all species. Moreover, through technical innovation and discoveries, combined with longitudinal integration and coordination, we can or have created capabilities that accelerate the transition of new health-related products from the discovery phase into clinical use. The combination of novel technologies and academic support located in the Biocorridor will revolutionize the drug development process, relieving the bottleneck, minimizing costs, and enabling more – and better – products to come into the marketplace. It's for the greater good.



Translational Research Diagram

ECONOMIC DEVELOPMENT ENGINE

The formation of the Research Valley Biocorridor will generate substantial economic growth in the region, facilitating increased research funding, workforce development, and high wage job creation at all levels for area residents and Texas A&M graduates.

The Biocorridor will become the target location for companies undertaking the translational research component of the drug and device development process. It already has all the right resources and partners to revolutionize the industry.

The Research Valley Biocorridor will be ideal for small pharmaceutical businesses, which, until now, have not been able to thrive in the industry. Researchers who author the discovery will be able to move their product through the maze of animal and clinical trials with the support of a major University System. Entrepreneurial business owners will be able to grow their ideas in a scalable GMP environment, streamlining development and lowering costs.

BEYOND BIO

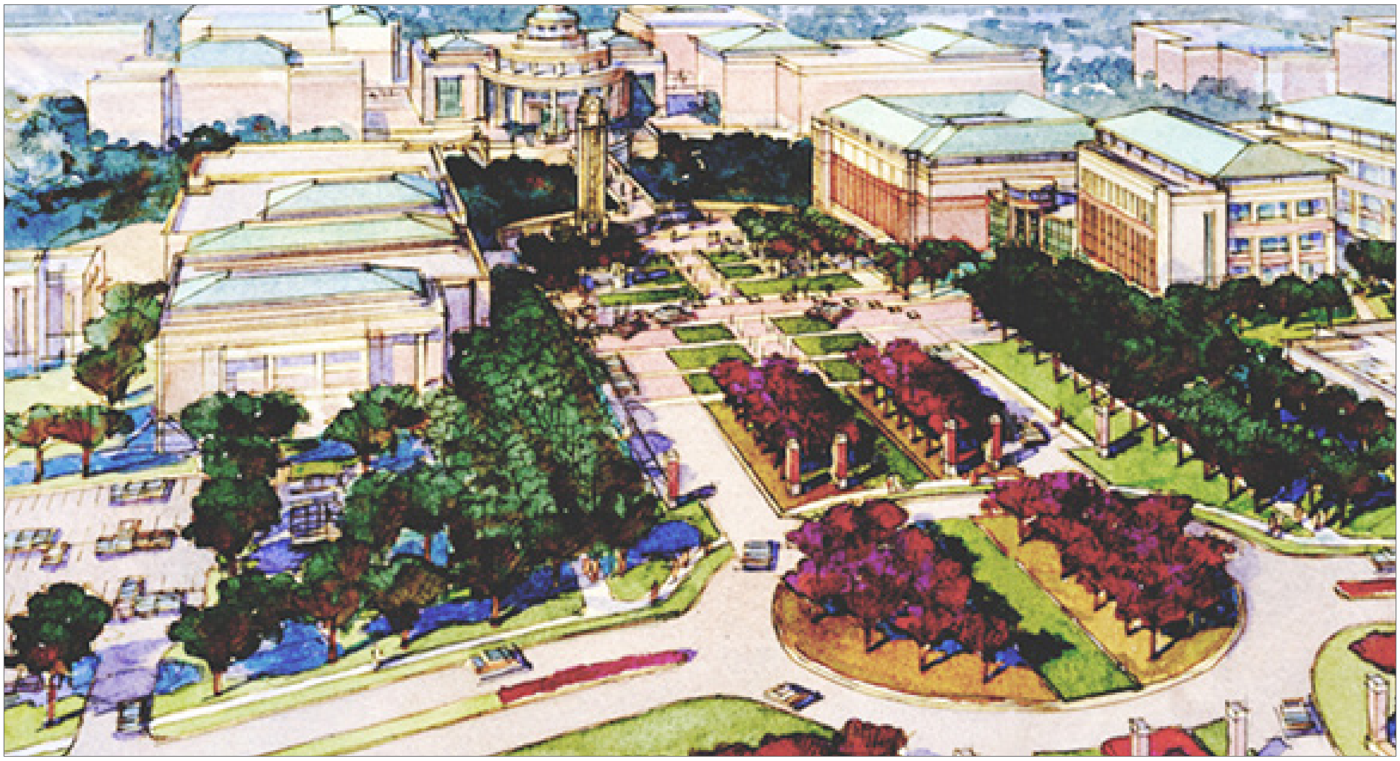
The economic impact of the Biocorridor will reach beyond the biotechnology and biomedical fields: businesses ranging from professional services and finance to manufacturing and construction will benefit from its development. Workers, business owners, and researchers in the Biocorridor will need professional services, conveniences, housing, entertainment, and schools, generating a sustainable cycle of community growth in the Bryan and College Station region that will last decades into the future.

A SHARED VISION

The Research Valley Concept Master Plan's challenge is to provide a framework for the vision, energizing key stakeholders, organizing zones of land use, locating transportation and utilities infrastructure, recommending management networks and identifying potential funding sources. The Concept Plan captures the spirit of the development and provides the means, methods and vision as to how key research and development functions and the support services they require could be organized and integrated into a vibrant, growing community at the intersection of higher education and the emerging Texas biotechnology industry.

2 ANALYSIS

LOCAL ASSETS



Rendering of Texas A&M University from Master Plan

The Research Valley Biocorridor is ripe with existing assets that make it ideal for the biomedical and biotech industries. The local communities have invested significantly in research, education, and manufacturing, making the transition to becoming Texas' premier bio-business and bio-research zone the next logical step to take.

RESPONSIVE WORKFORCE DEVELOPMENT

The Research Valley is home to Blinn College, Texas A&M University, and Texas A&M Health Science Cetner, three institutions poised to produce home-grown graduates that rival international competitors in skills development and knowledge base.

WORLD-CLASS PLANT + ANIMAL + HUMAN RESEARCH CENTERS

As described earlier, the Biocorridor is home to several research centers and institutes that are paving the way for revolutionary techniques and supporting small business development. Together with the Texas A&M Institute for Innovative Therapeutics and National Biosecurity Foundation, these core research and educational centers are constantly interacting, collaborating, and partnering to develop the next generation of life-saving products.

Key components of this innovation environment include:

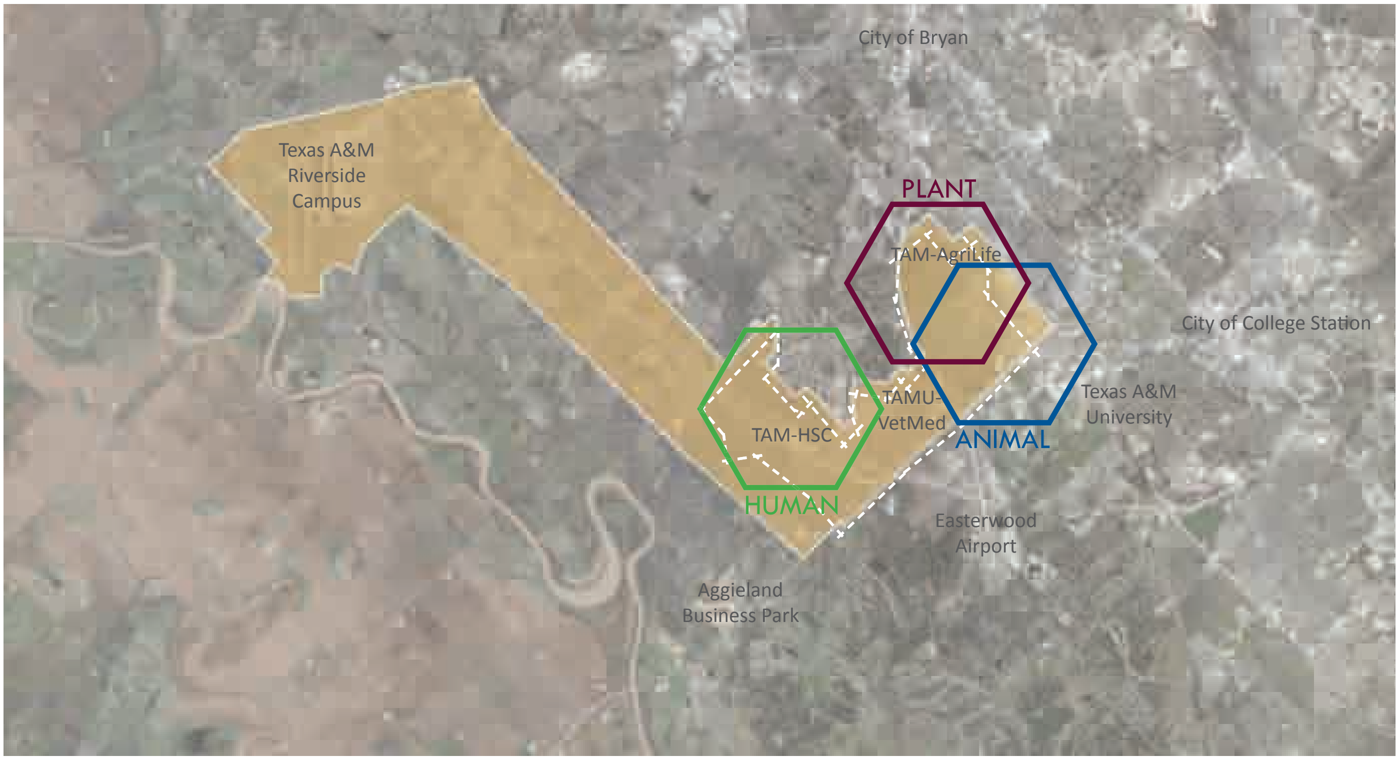
- Texas A&M AgriLife
- Texas A&M Engineering
- Texas A&M University College of Veterinary Medicine
- Texas A&M Health Science Center
- Texas A&M Institute for Genomic Medicine
- Texas A&M Institute for Preclinical Studies
- National Center for Therapeutics Manufacturing

COMMITTED COMMUNITY

Essential to any successful development is a committed network of community leaders, which is apparent within the Bryan-College Station area. Key stakeholders from Brazos County, the Cities of College Station and Bryan, and each of the respective Texas A&M University System components have been involved since the initiation of the Biocorridor planning project, and many more have participated along the way. The community is committed to the success of the Research Valley Biocorridor, and their dedication goes beyond economic development.

HOMETOWN ENVIRONMENT

The Research Valley is anchored by the cities of Bryan and College Station and is located in the center of the Texas Triangle.



Research Valley Biocorridor

Despite being one of the largest academic and research communities in United States, these two cities have maintained their hometown identity and charm. Traffic is light, neighbors are friendly, traditions run deep, and the pace of life contributes to a high standard of living that cannot be found in large cities.

ACCESS

The Research Valley is incredibly well-connected with its regional air, rail and highway infrastructure. Adjacent to the Research Valley Biocorridor is Easterwood Airport, which operates several commercial, private, and cargo flights each day, with capacity for expansion. The existing rail corridors are utilized for cargo transport, and long-term plans for the Texas T-Bone Corridor propose rapid-rail connections to Houston, Dallas, San Antonio, and Austin. Highways span in all directions connecting the Research Valley in particular as part of the greater Houston region.

BUSINESS, INDUSTRIAL, & MANUFACTURING SUPPORT

Numerous business, industrial, and manufacturing parks are located within Bryan and College Station, in close proximity to the Research Valley Biocorridor. These centers support small and large companies alike as they seek to develop new products, refine their practices and grow their businesses.

GEOGRAPHICALLY POSITIONED

The Research Valley Biocorridor is geographically located at the western edge of Bryan and College Station, spanning several thousand acres of land that includes the new Texas A&M Health Science Center campus, Aggieland Business Park, Texas A&M University's College of Veterinary Medicine campus, and Texas A&M AgriLife property in addition to several large sections of land in between. The main Texas A&M University campus is located just south and east of the Biocorridor site, and Easterwood Airport and the Research Park are located due south. To the west, the Biocorridor is bound largely by farmland and to the east, it is bounded by residential developments and the city grid. The first phase of the Biocorridor development will generally occur within the southeastern corner of the site, closest to the University and City edges.

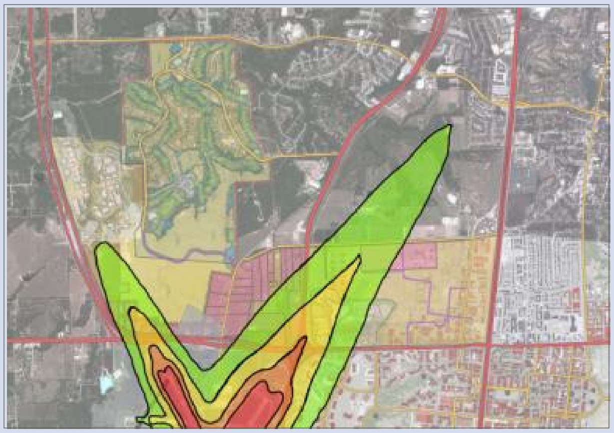
EASTERWOOD AIRPORT

One of the Research Valley Biocorridor's primary assets is the neighboring Easterwood Airport. Located to the south of Raymond Stotzer Boulevard and adjacent to the Texas A&M University Research Park, Easterwood Airport serves as a regional hub for commercial, general aviation, and military aircraft. The proximity of the airport to the Biocorridor provides clients and visitors direct access to the site via Turkey Creek Boulevard, and plans for service expansion are underway.

In its existing configuration, the approach surfaces for the runways fall across the Biocorridor site; however, despite vertical development restrictions and noise concerns in a few areas, the majority of the Biocorridor is not anticipated to be negatively impacted by airport proximity. Further study will be required, although preliminary findings indicate the following:

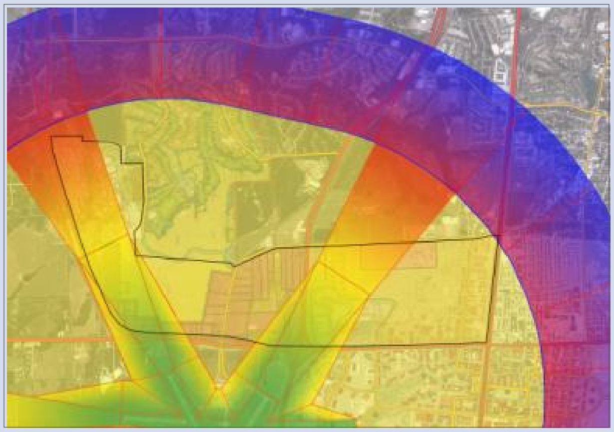
1. Based on meetings with and airspace data provided by the Texas Department of Transportation (TxDOT), development in the proposed Mixed-Use Manufacturing District described in the concept plan may be impacted in the future (refer to page 19). In other areas, vertical development will be restricted to two to three story height buildings, and potential future development may be impacted by other long-range plans at Easterwood Airport. Analysis was prepared by mapping the preliminarily-identified delta between the TxDOT-provided airspace contours and base elevation contours. It is anticipated that development in the rest of the Biocorridor will not be as restricted. It is recommended that development ordinances generally cap building heights at three to four stories and clearly specify parcels that require additional vertical restrictions. Prior to writing the development code, however, further analysis of both precision and non-precision aircraft airspace contours will be required.

2. An updated Easterwood Airport Master Plan is needed to determine noise contours across the Biocorridor site. The best noise contour information currently available for Easterwood Airport is based on 2002 data and is, therefore, outdated. No accurate assessment is able to be made with this old information. The Concept Master Plan recommends that development regulations for the Biocorridor take into account a new Easterwood Airport Master Plan, and representatives from each entity should work together to ensure that long-range development goals are met.

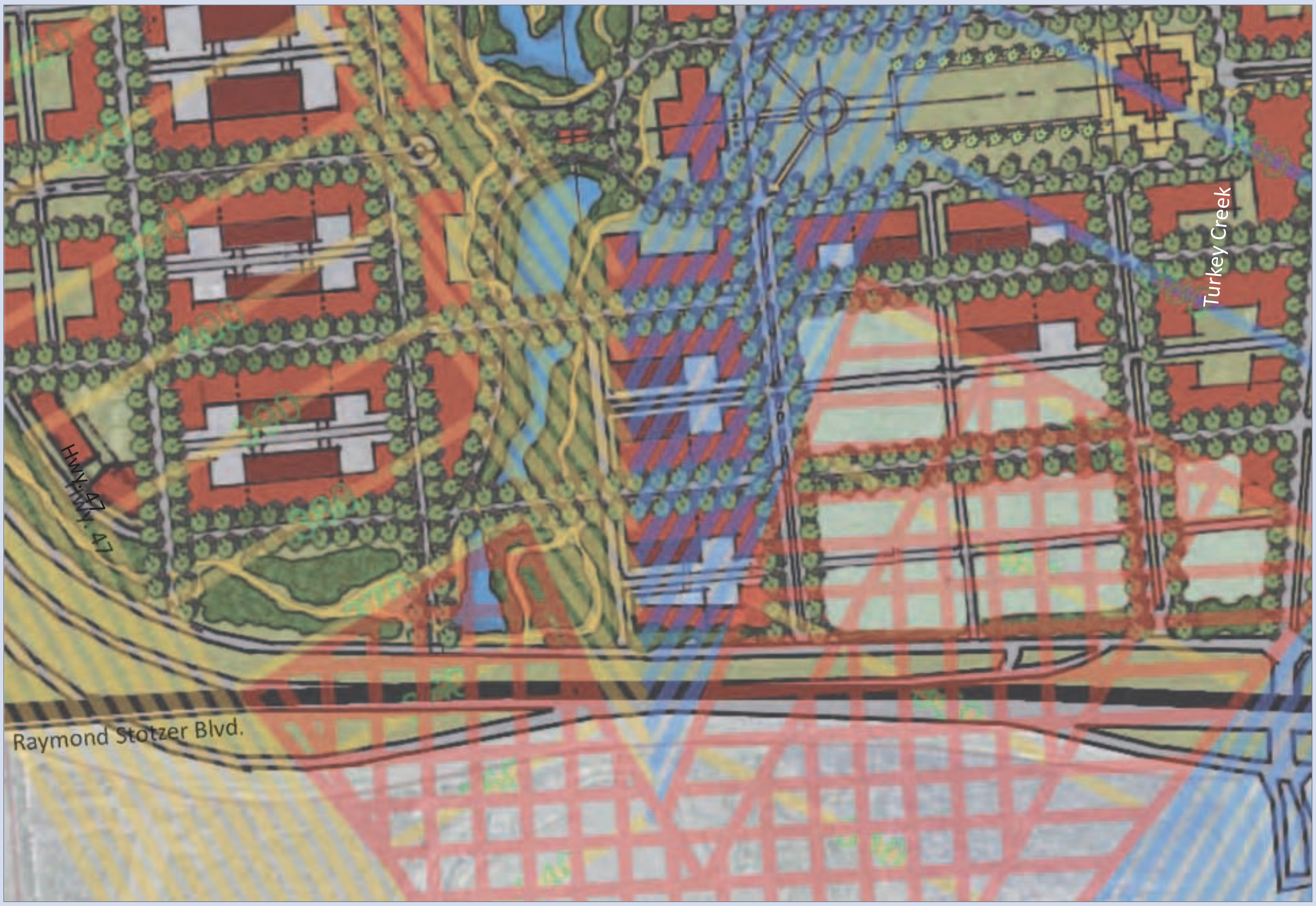


Noise & Vibration - Existing Airport Configuration

Noise & Vibration - Possible Impact with Airport Expansion



Approach Surfaces for Precision Aircraft - Existing Airport



Easterwood Airport Flight Path Analysis / Contour Mapping

3. Development Land Use Regulations or a Unified Development Code should be created to clarify the extent of development restrictions. As Biocorridor planning moves into the next phases, a joint development code should be adopted by both Bryan and College Station that reflects a unified development code (UDC) within the Biocorridor proper. If this UDC is a form-based code, it could specifically identify heights and appropriate uses, as well as specific zones for limited development. This code should be developed subsequent to and incorporate the outcomes from an updated airport master plan with current noise contours, as well as the preferred airspace contours for limitation on vertical development.

4. Sites within the Biocorridor that appear to be impacted by or near to airport flight paths will need to undergo a development compatibility evaluation as a part of regular due-diligence. At this time the exact location of a future precision runway is not specified, and an update to the airport master plan may impact exact location. Ultimately, whether or not preliminary analyses or development codes indicate suitability, individual sites will need to be evaluated on a case-by-case basis for development compatibility. This step is part of the regular due-diligence process, and should not be viewed as inhibitive to development within the Biocorridor.

2 ANALYSIS

A CHANGING LANDSCAPE

1. Suburban Development

THE EVOLUTION OF THE RESEARCH PARK

Fifty years ago, leaders in North Carolina founded Research Triangle Park (RTP) to stop the "brain-drain" and boost regional economic growth. Now the largest research park in the world, RTP has served as the model for the development of research and science parks around the globe.

The Research Valley Biocorridor seeks similar economic impact, jobs creation, and graduate retention goals as did RTP, but today's successful research parks look and feel very different from the granddaddy model: many are directly affiliated with a university, many are more urban in nature, and many are integrating hotels, conference centers, restaurants, and residential uses.

2. Campus Development

3. Mixed-Use Development

1. SUBURBAN DEVELOPMENT:

Research Triangle Park

Initiated: 1959
Land Area: 7,000 Acres
Developed Space: 20 Million GSF
Development Density: 2,850 GSF / ACRE

2. CAMPUS DEVELOPMENT:

North Carolina State University's Centennial Campus

Initiated: 1984
Land Area: 1,337 Acres
Developed Space (projected): 9 Million GSF
Development Density: 6,750 GSF / Acre

3. MIXED-USE DEVELOPMENT:

Johns Hopkins Science & Technology Park

Initiated: 1988
Land Area: 80 Acres
Developed Space (projected): 3.1 Million GSF
Development Density: 38,750 GSF / Acre

"*As universities consider* the pros and cons of partnering with industry within the context of a research park, they must establish *a new paradigm. They will* be able to *transcend the old* state capital budget requests *and treat the new* partnerships as investments that bring quantifiable returns- creating profit centers instead of long-term debt to the state's taxpayers."

— DOUGLAS MCQUEEN
FORMER EXECUTIVE DIRECTOR
ASSOCIATION OF UNIVERSITY RESEARCH PARKS

PARADIGM SHIFT #1
UNIVERSITY & INDUSTRY PARTNERSHIPS

University Systems are searching for strategic industry partnerships, and the benefit of these affiliations is a two-way street. Not only will researchers be able to move their discoveries into commercialization, leveraging revenue to fund additional research, but industry will be able to build upon incubator programs within the academic environment, lowering development costs and streamlining production.

PARADIGM SHIFT #2
ATTRACT A CREATIVE CLASS WORKFORCE

For the last decade, sociologists and economists have been tracking an interesting demographic trend: the rise of a Creative Class workforce. The Creative Class are today's knowledge-workers, and they have challenged traditional economic development schemes. Well-educated and mobile, the Creative Class typically chooses a place to live and then finds a job - not the other way around, as was the case in the past.

PARADIGM SHIFT #3
PHARMACEUTICAL INDUSTRY CHANGES

Because the therapeutics development and manufacturing processes are prohibitively expensive and lengthy, the bio-pharmaceutical industry is looking for ways to downsize and outsource its research, development and clinical studies. The Research Valley Biocorridor offers a unique environment in which this can occur by providing opportunities to draw upon local talent from University classrooms and laboratories, apply recent innovative technological advances (e.g. the production of vaccines with plants) and take advantage of manufacturing infrastructure advances (mobile clean rooms) have revolutionized the industry.

The physical form of this response includes facilities that support research, development and the production of clinical study materials that are repeatable, expandable and possibly, transportable. Modular pods can serve as individual laboratories or production facilities, or can be scaled-up to produce larger product batches or research efforts. Because they are smaller and more flexible than typical manufacturing plants or pharmaceutical research facilities, these pods, if provided the appropriate infrastructure, could be located anywhere within an urban environment. They could plug into supportive networks and be surrounded by mixed-use functions, such as offices, coffee shops, and even residential uses. It's a revolutionary concept that the Research Valley Biocorridor will be the first to provide.

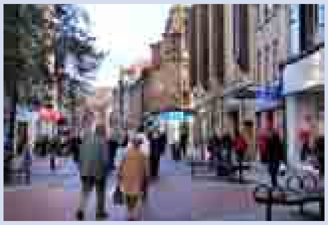
3 GUIDING PRINCIPLES

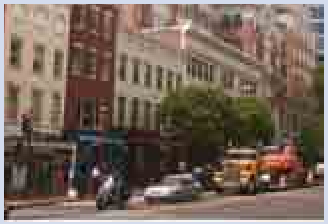
PROVIDING DIRECTION

PLACEMAKING FOR ECONOMIC DEVELOPMENT

The following list of characteristics for placemaking is intended to inspire basic planning and design attributes for the Research Valley Biocorridor:

1. **Create Distinctive Destination Districts**
2. **Create a Symbolic Heart**
3. **Create a Mixed-Use District**
4. **Design Complete Streets**
5. **Design Engaging Street Walls**
6. **Design Parking to Support Urban Design Goals**
7. **Build Upon Authenticity**
8. **Design for Visual Richness**
9. **Design for Sustainability**





GUIDING PRINCIPLES

Seven Guiding Principles articulate the philosophy of the Research Valley Biocorridor. The Guiding Principles were developed in conjunction with the project Task Force, and articulate a shared vision. Concept Plan recommendations all tie back to these charges.

1. DO IT FOR THE GREATER GOOD
   - Share the Vision, the Responsibility, & the Benefits

2. THINK LONGEVITY, THINK SUSTAINABLY, THINK HEALTH (AND ACT NOW)
   - 40/50 year vision, 100+ year vision
   - Long-term impact on economy and quality of life
   - Value the land; Develop densely and “greenly”
   - Quality design and long-lasting construction
   - OneHealth Plus™ theme related to environment

3. ENSURE A STRAIGHTFORWARD, CONSISTENT, & EQUITABLE DEVELOPMENT PROCESS
   - One-stop Shop (contacting, marketing, management, etc.)
   - Consistent Authority (codes, zoning, standards, etc.)
   - Minimize Risk (same set of rules)
   - Standardized Process

4. ENABLE SCALABLE, GRADUATED, & FLEXIBLE SOLUTIONS
   - Plug & Play/Turn-key Options
   - Supports Small Business & Small R&D Operations

5. ACCENTUATE COMPETITIVE ADVANTAGE

- Funding
- Affiliation w/the University System, University, and HSC
- Existing Assets: TIGM, TIPS, NCTM
- Responsive Workforce Development
- Access
- Utilities, Permits, etc.
- Caring Community, Child-friendly, Pet-friendly
- Dynamic Environment

6. BUILD UPON EXISTING REGIONAL ASSETS & CHARACTER

- Image & Identity
- Hometown Quality & Pride – Build the Brand
- Contextually Sensitive, Quality Architecture
- Retaining the very best and brightest ...that are already here!

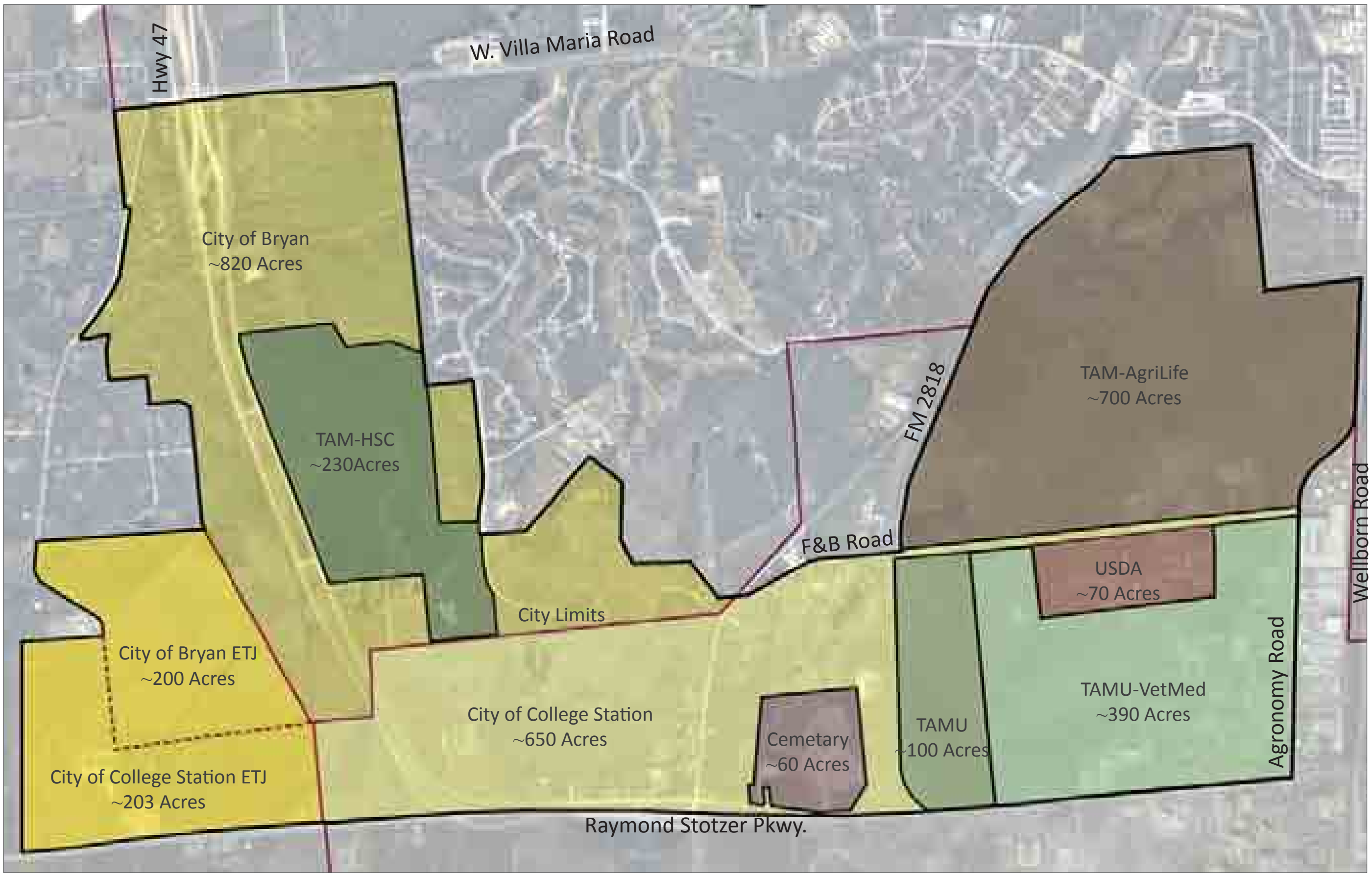
7. FOSTER AN ENVIRONMENT OF COLLABORATION & INTERDISCIPLINARY EXCHANGE

- Inter-institutional
- Partner with Industry (a two-way street)
- Place-making is Key to attracting Knowledge Workers
- Mixed-Use Development (Retail, Convenience, Housing, Amenities)
- Value Art, Entertainment, Recreation
- Consider Co-location & Synergies
- Recruit/Attract Appropriate Businesses

CONCEPT PLAN

4

THE FOUNDATION



Existing Land

BOUNDARIES

The approximately 3,500-acre, priority planning area straddles the city limits line that divides cities of Bryan and College Station. The area is roughly defined by Raymond Stotzer Parkway on the south; Agronomy and Welborne Roads on the east; TAM-AgriLife's property line, the Traditions residential development, and Villa Maria Road on the north; and the Bryan and College Station city limits lines on the west. Approximately 820 acres of the priority area is located within the City of Bryan's jurisdiction, and the rest is located within College Station's city limits.

ACCESS

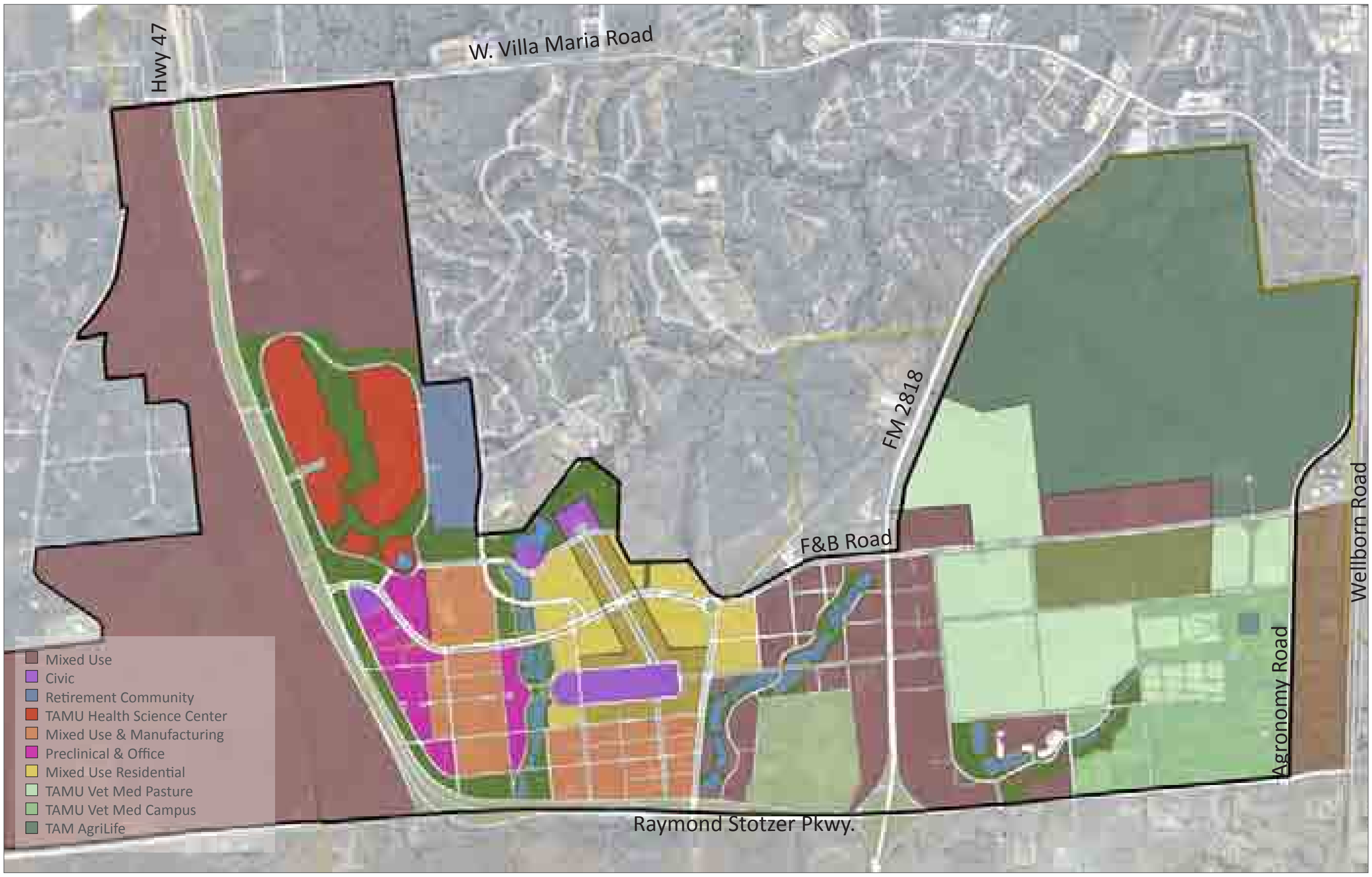
Primary vehicular access to the priority planning area is provided by State Highway 47, Raymond Stotzer Parkway, F&B Road, Harvey Mitchell Parkway (FM 2818), and Turkey Creek Boulevard. The current construction of the Biocorridor Boulevard along the southern edge of the TAMHSC will provide an east-west connection through the Biocorridor that will be essential to improving accessibility.

LAND OWNERSHIP

The existing property ownership has dictated the locations of key Biocorridor land uses. Approximately 700 acres is currently reserved for TAM-AgriLife, 390 acres to TAMU-VetMed, 230 acres to the TAM-HSC, 100 acres to TAMU, 70 acres to the United States Department of Agriculture, and 60 acres to the Aggie Field of Honor Cemetary. The remaining parcels are divided among private property holders for a mixture of residential and commercial uses. The City of Bryan is also a key land owner.

SITE INFLUENCES

In addition to the TAM-HSC, TAM-AgriLife, and TAMU-VetMed campuses, another major influence that impacted the development of the framework plan is Easterwood Airport. Although its existing and planned flight paths will limit some vertical development in the Biocorridor, its proximity is viewed as a benefit from a connectivity standpoint.



Proposed Land Use

THE CONCEPT LAND USE PLAN

The Biocorridor Concept Land Use Plan merges lessons from placemaking, industry requirements, and local character to create an exciting, shared vision for long-range development.

MIXED-USE NEIGHBORHOODS

Although almost entirely mixed-use, the Concept Land Use Plan for the Biocorridor identifies distinct neighborhoods or zones within the planning area. These are generally described as the following:

- Town Center
- Mixed-Use Manufacturing
- Manufacturing District
- Office & Research
- Green Space

The individual campuses of TAM-AgriLife, TAMU-VetMed, TAM-HSC also integrate into the plan yet retain unique characteristics, helping to form a texture of neighborhoods that contribute to a sense of place that is attractive to highly creative professionals.

STREET NETWORK

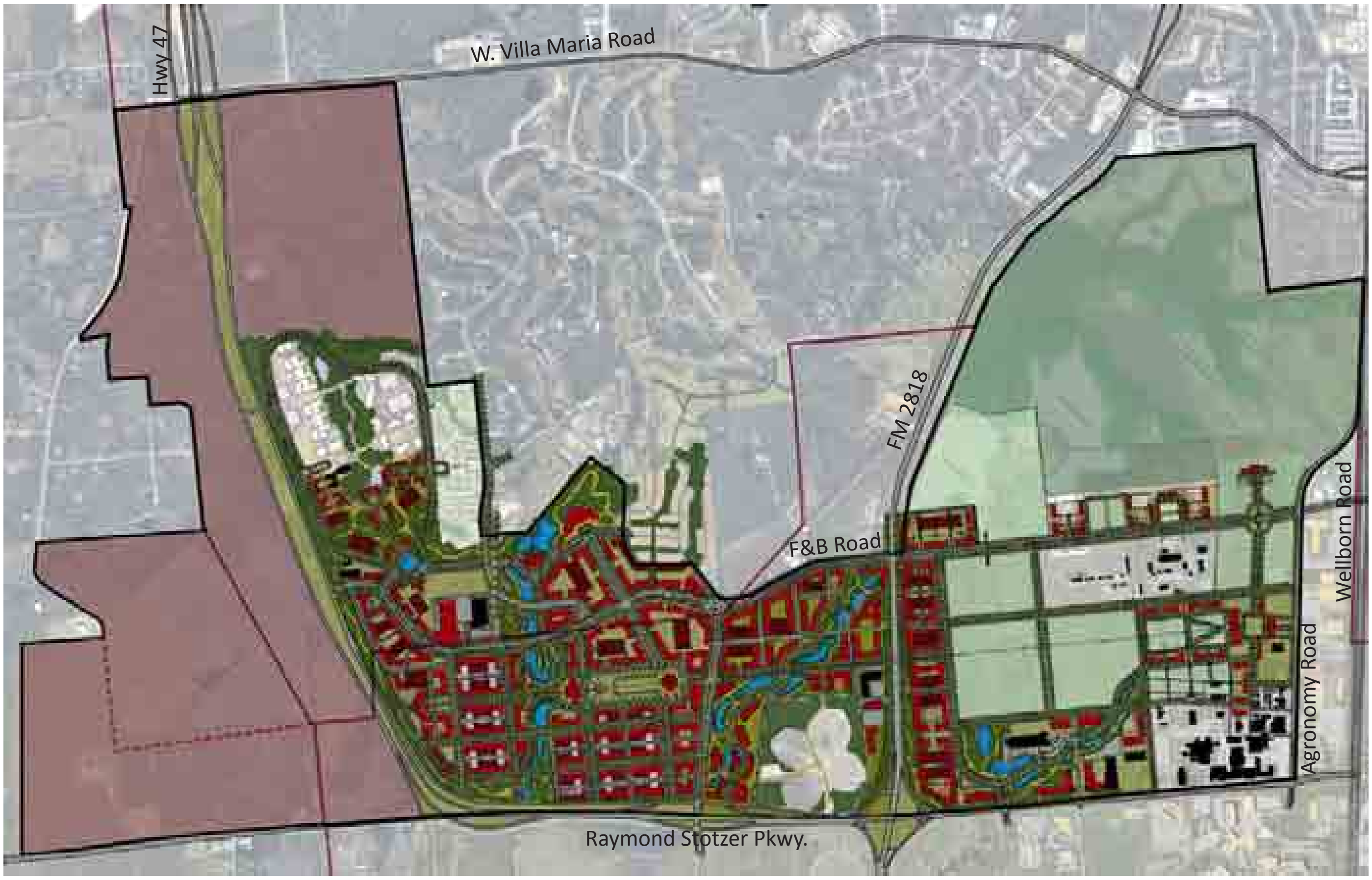
The roadway network in the Biocorridor Concept Land Use Plan is organized around an east-west axis that leads to a central civic square for public gathering to the TAMU-VetMed campus. This axis provides a focal point and pedestrian spine for the Biocorridor development. Higher-volume vehicular routes (the Biocorridor Boulevard and Raymond Stotzer Parkway) are located at the perimeter of the plan.

Block patterns are fundamentally structured to support mixed-use manufacturing and mixed-use research developments. A standard size for a city block, 200’ by 400’, will support mixed-use manufacturing developments and research or pre-clinical space. A slightly larger block size will receive larger manufacturing buildings.

4

CONCEPT PLAN

Research Valley Biocorridor



CONCEPT SITE PLAN

Potential development sites are identified in the land use plan and are organized by a hierarchal roadway network, as depicted on the previous pages. During the planning process, significant discussion occurred which focused on the variety of programmatic uses suitable to the Biocorridor. Discussions ranged from the specific components of biomedical, biopharmaceutical and biosecurity research and manufacturing to more general discourse regarding a need for a mix of uses, including retail, hospitality, housing, general education, etc.

While the Concept Land Use Plan identifies development zones that could represent up to 50 million square feet of new development, the Concept Site Plan depicted above demonstrates how individual building footprints could be applied within the framework plan. Various building footprints are included – e.g., research buildings, manufacturing facilities, hotel, retail, housing, etc. – in order to demonstrate the development potential within the block structure, and communicate the vision of a true mixed-use research and manufacturing zone.

CONCEPT PLAN AERIALS

Concept Master Plan: view of mixed-use manfacturing district and town center

Concept Master Plan: View of College of Veterinary Medicine, mixed use and Texas A&M AgriLife

Creating a center...

TOWN CENTER

Situated at the heart of the Biocorridor, the Town Center provides a primary focal point for development. A mix of uses ranging from residential to retail, commercial, office, and entertainment will fill this district with 24/7 activity, providing a critical "hot spot" for interaction and exchange.

The Town Center's main street runs between a central square and a hotel/conference center. Main Street will feature the most densely developed set of shops with a combination office, wet/dry labs and residential units located on upper levels. The Town Square is the central gathering point in the Biocorridor, featuring extensive green space and linking with area hike and bike networks.

As the dense, Biocorridor development transitions from an urban character into the single-family homes at Traditions, building sizes will scale down gradually, respecting the surrounding context.

MIXED-USE MANUFACTURING

Framing the Town Center on the south is the Mixed-Use Manufacturing District, home to plug-and-play lots that support translational development by providing scaleable solutions for facilities. The district is a mixed-use zone, with pedestrian-oriented uses integrating into office or laboratory buildings and the ground floor levels.

The district features a typical urban block size and pattern, which keeps the character walkable. These blocks will be approximately 200' by 400'. Manufacturing facilities will reside on the inside of the blocks while office and retail space will be oriented toward the street.

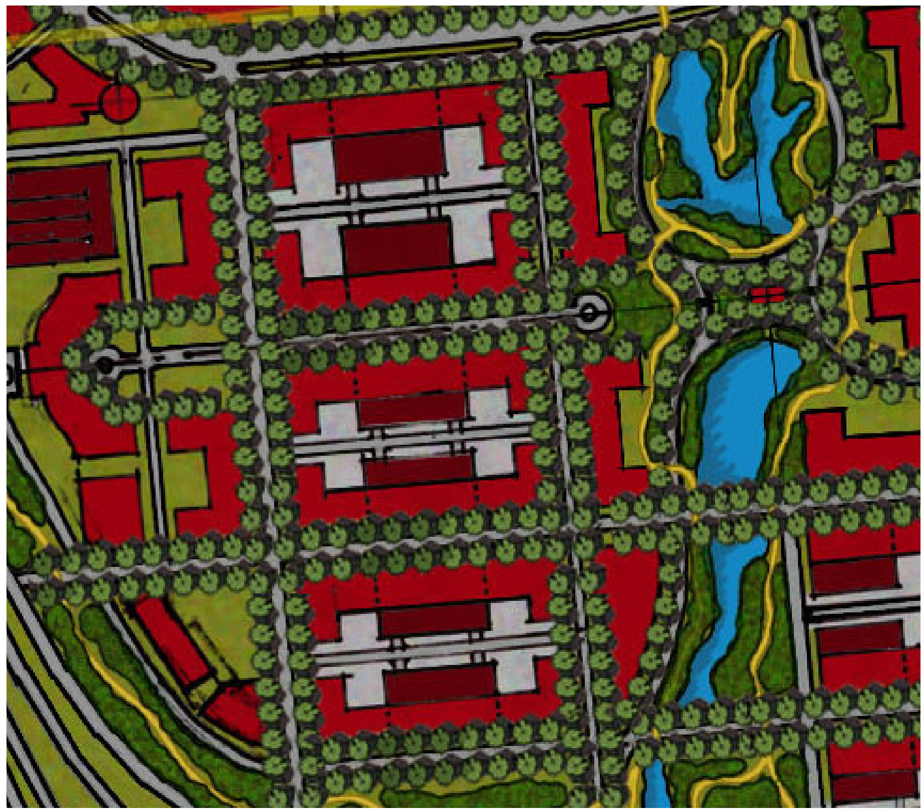
As noted on page 8, the diagram to the right indicated the impact of development on the Mixed-Use Manufacturing District in the event that a future precision runway is added as identified in the most recent Easterwood Airport Master Plan.

Discovery in medicine...

OFFICE & RESEARCH

Located at the edges of the Town Center are zones for Office and Research facilities that are approximately 2-3 story buildings. These zones, which will be used by both academic and industry experts, will also incorporate occasional corner coffeeshops, restaurants and convenience uses. Parking garages are buried within the block behind the research buildings, in order to create a more welcoming streetscape.

The Office and Research areas are linked to the Town Center by the street network and hike and bike trails. These facilities are sheltered from neighboring roadways by greenbelts, which ensures that the development remains more quiet and contained.

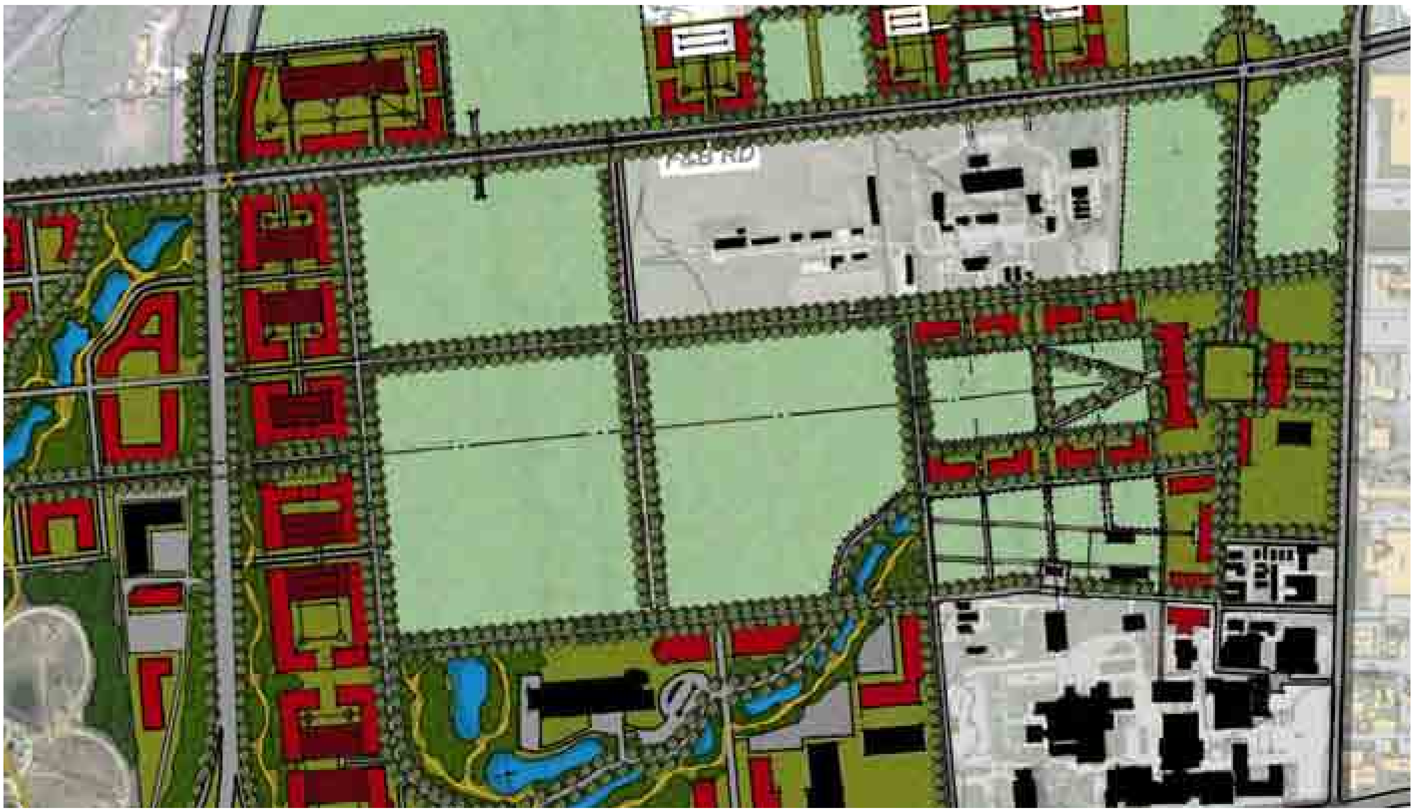


MANUFACTURING DISTRICT

A manufacturing area (BioPark) is also located within the priority planning zone, and is specifically designed for a strategic national biomanufacturing center considered currently by the U.S. government. This district will be structured on a slightly larger block layout, which will accommodate the larger manufacturing uses. However, these centers can still be integrated with a mix of office and occasional retail, convenience, or restaurant uses, which will help to maintain the Biocorridor's sense of walkability.

The Manufacturing District is nestled against a greenbelt, which provides both a secure and connective backdrop for production uses. The Greenbelt provides opportunities for stormwater management, recreation, and ecological preservation that speak to the tenants of the Biocorridor's OneHealth Plus theme. A 100' deep green belt is shown along the east side of SH-47 in order to provide a visual buffer between vehicles and the manufacturing district.

Distributing wellness...



EAST CAMPUS

East of Harvey Mitchell Parkway is the East Campus, home to the TAMU-VetMed and TAM-AgriLife campuses. Although Drug Development facilities will abut Harvey Mitchell Parkway and straddle F&B Road, the East Campus will primarily retain its academic functions.

Because the TAMU's VetMed program is the only college of veterinary medicine in the state of Texas – and because it is ranked among the top programs in the United States – its growth is anticipated to continue into the future. The campus requires that several hundred acres of pastureland be located immediately adjacent to its facilities in order to support the large animal clinic and research functions.

Texas A&M – AgriLife's campus will remain dedicated to agricultural research and bio-product development. However, a portion of the campus will feature academic office and research facilities that will fit into the character of Biocorridor development. These facilities will be located along F&B Road.

The Biocorridor Concept Plan recommends that a new entrance be created from F&B Road into the VetMed and AgriLife campuses, and an animal underpass at the western end of F&B Road has been included in the priority infrastructure project list.

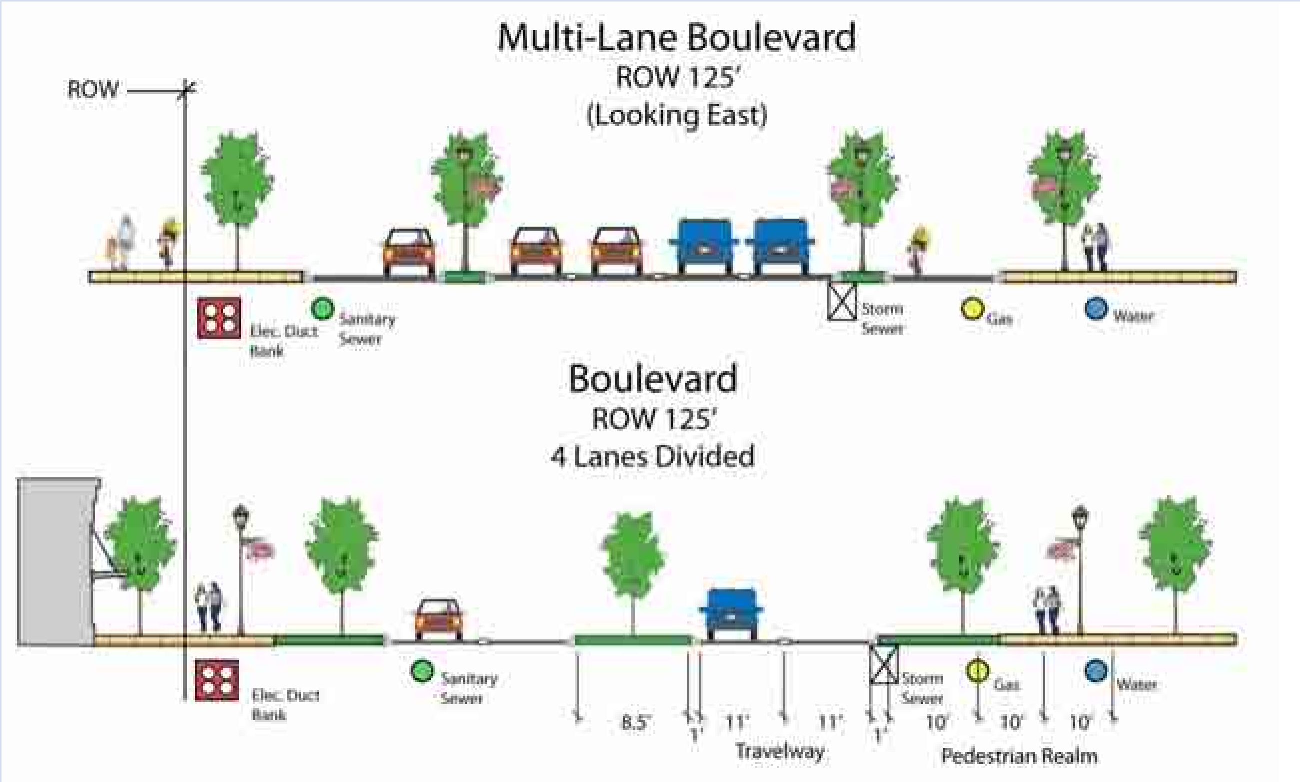
VETMED PASTURE

The pastureland affiliated with the College of Veterinary Medicine forms the largest portion of the East campus. The Concept Plan has oriented campus growth along a main Biocorridor axis, framing two central quadrangles and aligning with the Town Square in the Town Center.

Much like Thomas Jefferson's concept for the original lawn at the University of Virginia, which arranged a tight-knit academic village around a sweeping, central lawn, the double quad planned for the VetMed campus expansion provides ample space for reflection and activity in a traditional campus-planning sense. However, the unique needs of the College present an opportunity for invention. Formal pastures that temporarily hold animals could be incorporated into the quadrangles, satisfying two needs with one creative solution.

Instead of Jefferson's domed library, VetMed's main academic and administrative building (Building A) could be located at the head of the quadrangle, overlooking the entire campus, the pastures, and the Biocorridor beyond. Just west of Building A, Buildings 1-4 could be additional teaching and research facilities. Buildings 5-8 could be barns, stables, or other animal holding and storage facilities.

TRANSPORTATION PLANNING



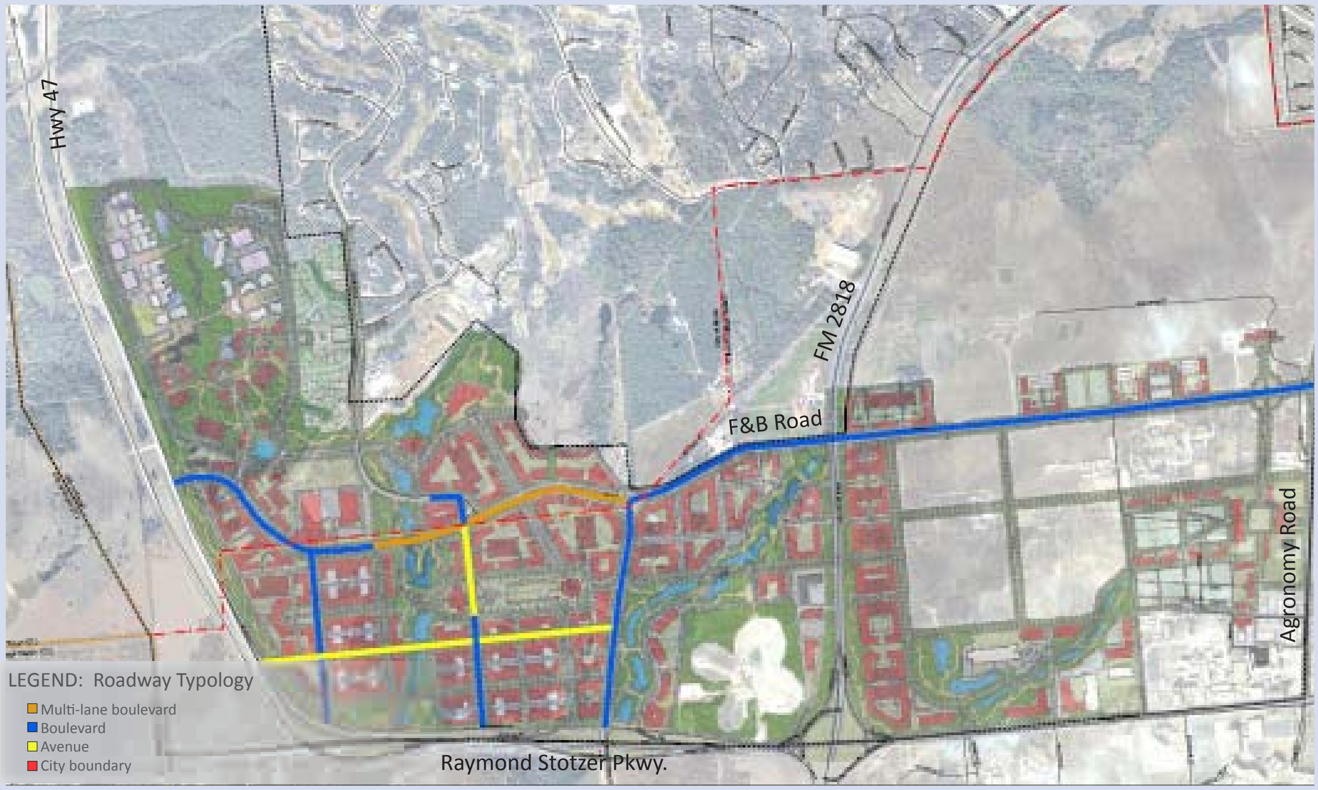
Within the proposed Biocorridor four major cross sections have been proposed. Each cross section balances multi-modal needs with adjacent land use context. These cross sections are designed to balance mobility, safety, and a mix of transportation modes. The different cross sections were selected for their design principles, traffic capacities, and relationship to adjacent land use context. Four specific types were used, and the following paragraphs outline the unique characteristic of each. See Appendix A, Utilities Infrastructure Analysis, Exhibit A-4, "Transportation Framework Master Plan".

MULTI-LANE BOULEVARD

The Multi-lane Boulevard is an alternative to conventional higher-volume, higher-speed arterial streets. This thoroughfare type may be used where the objective is to accommodate urban mixed use or residential development and a walkable environment on corridors with high traffic demands. A Multi-lane boulevard combines a central thoroughfare with higher speed bordered by landscaped medians that separate the central thoroughfare from one-way access lanes on each side of the boulevard. The access lanes provide for slower local traffic, parking, bicycle travel and a pedestrian oriented streetside and are designed to discourage through traffic. Multi-lane boulevards may be considered where a community desires to make a very wide arterial street more pedestrian-friendly, yet recognizes the need to retain traffic capacity.

BOULEVARD

A Boulevard is a high speed roadway that is capable of large traffic volumes. Speeds on boulevards do not exceed 45 miles per hour and can achieve volumes up to 50,000 vehicles per day. These road types are characterized by having a center median to allow for some elements of access management to be implemented.



Transportation Framework Plan

AVENUE

The Avenue can be the most flexible of the three road classes by integrating moderate traffic volume and speeds with multi-modal transportation such as transit, bicycling and walking. Avenues can be anywhere from 2 lanes to 4 lanes wide and have speeds not exceeding 35 miles per hour. Automobile capacity on avenues can vary from 1,000 vehicles per day in some suburban areas to 30,000 vehicles per day in busier areas of the city. Avenues are generally more walkable and allow for greater regional connectivity for bicycles because of the slower speeds.

STREET

Streets are low-speed, low-volume roadways that have a great deal of access to surrounding land uses. Speeds on streets do not exceed 30 miles per hour, and do not exceed 10,000 vehicles per day. Streets are ideal for retail activities in urban areas, and also can serve residential neighborhoods with little disturbance. The street classification is ideal for multi-modal activity since vehicle speeds are low.

PARKING

A progressive approach has been taken as it relates to parking. In the beginning, parking can be handled in such a way that surface parking lots can handle the parking demands. Location of these lots should be taken into consideration and should be planned to be future locations of either another building or a future parking garage. Therefore, the dimensions that they are designed for today should easily be transferable to either a 120’ building module or in increments of 60’ for parking garages. This will typically range from 120’ for small garages on tight sites to 240’ for more generous and higher-density locations.

OPEN SPACE & UTILITIES

GREENBELTS

Although dry creek beds run throughout the Biocorridor site, few areas are designated as floodplains. However, because occasional flooding does occur and the beds are home to rare vegetation, the dry creeks were integrated into the plan as greenbelts, and provide open space amenities rich with walking, hiking, and biking trails. A series of green networks provide non-roadway connectivity between major development. Storm water management systems will be integrated into the greenbelts (outside of the critical areas slated for ecological preservation) in order to provide detention and quality management for storm water runoff.

UTILITIES INFRASTRUCTURE

Since the neighborhoods or districts within the Biocorridor, while unique, will all enable plant, manufacturing, or laboratory development alongside office or residential uses, a high-demand for accessible and reliable utilities infrastructure is anticipated.

A Bio-Pharma process area can use significant water quantities to support the process and air handling systems. Electrical power and communication links are also very important. Waste water and storm water must be collected and removed from the site. Each block will be planned for distribution of these utilities. Recommendations include removable sidewalk panels that allow piping to be installed or repaired without shutting down the street. Utility Tie-in points on pre-planned intervals, will also support block organization and reduce construction time. These utilities networks - power, water, chilled water, data, and gas - will be distributed through the Biocorridor in below-grade ducts that are plug-and-play ready for development.

Please refer to the more detailed Appendix A, Utilities Infrastructure Analysis for demand projections analysis.

CONCEPT IMPLEMENTATION PLAN

Several key steps need to be taken in order to establish the Research Valley Biocorridor as a leading edge international biotechnology zone that results in substantial economic impact in the region. These steps are based on the following three assumptions, which reflect the Concept Master Plan's Guiding Principles:

1. The development "playing field" should be level throughout the Biocorridor, despite the involvement of multiple jurisdictions and landholders.
2. Prospective projects will need to be consistently offered both "site ready" land and economic development incentives.
3. Prospective projects will need to be fast-tracked in order to ensure competitive advantage.

First and foremost, it is recommended that a "Biocorridor Partners" Implementation Committee be formed to include the City of Bryan, the City of College Station, Brazos County, Texas A&M University System, Blinn College, and private ownership interests. The Implementation Committee will include representatives from each major stakeholder, and will serve as a guiding body throughout near-term implementation of the Biocorridor. Beyond the formation of the Implementation Committee implementation will best be served by recommendations in the following four areas:

1. Adoption of Land-Use Regulations and Standards

It is recommended that both cities adopt uniform and objective Zoning Ordinances and Design Standards within their respective corporate limits, and enter into uniform Development Agreements with the landholders in their respective extraterritorial jurisdictions that implement the Biocorridor Master Plan. It is also recommended that the Texas A&M University System establish like standards for property it owns within the Biocorridor. To provide long-term development predictability, it is recommended that the City of Bryan, City of College Station, Brazos County, and Texas A&M University enter into Interlocal Agreements that address these recommendations.

2. Adoption of Uniform Economic Development Programs

It is recommended that both cities and the county adopt uniform Economic Development Programs specifically for the Biocorridor. For long-term predictability, it is recommended that both cities and the county enter into Interlocal Agreements that address this recommendation.

3. Creation of a Special District

An important consideration relative to implementation and organization of the Biocorridor was the establishment of a Special District. In order to construct the infrastructure and utilities improvements necessary for "site-ready" land, such as those defined in the next section of this report, the consulting team's legal advisors recommended that a District be created through legislation approved by the Biocorridor Partners and State of Texas. This District would be governed by a board of directors selected by the Biocorridor Partners. The primary purpose of the District would be to create a tool for financing the improvements, and, once established, several financing strategies would be available.

Note: At the time of publication, the establishment of a Special District should only be viewed as a "future possibility" if determined necessary.

4. Establishment of Uniform Utility Rates

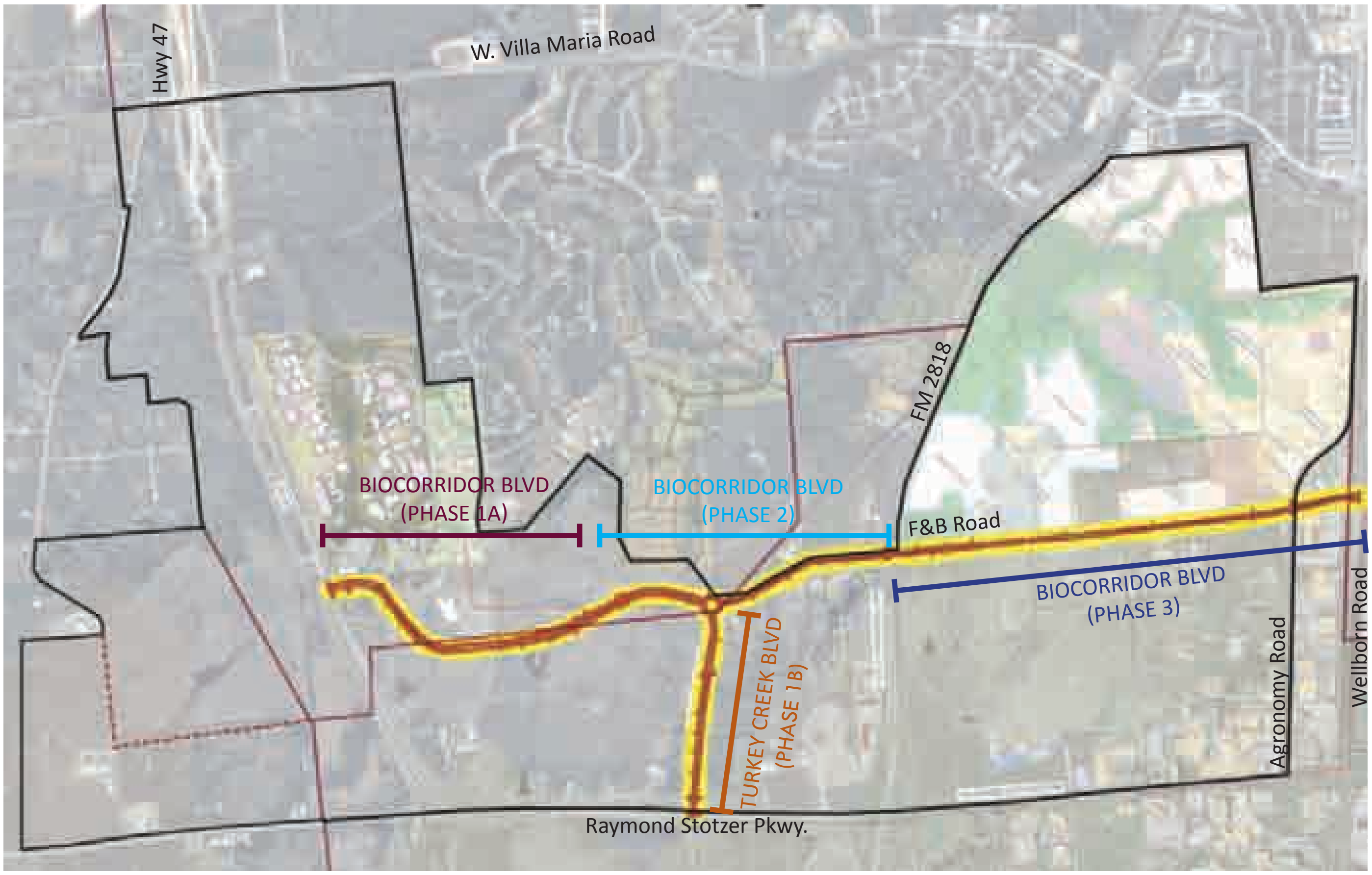
It is recommended that the cities and Texas A&M University System enter into an Interlocal Agreement to establish – to the maximum extent possible – uniform utility rates within the Biocorridor.

For the legal memorandum on implementation, refer to Appendix C, Legal Implementation Alternatives.

5. Priority Infrastructure Improvements

Master infrastructure projects were identified that will enable and facilitate Biocorridor development serving as catalyst projects. These infrastructure projects will create critical vehicular and utilities gateways and spine, enabling plug-and-play development and setting a high standard for urban character.

Please refer to the following page for the initial priorities with regard to infrastructure development identified to support the near-term implementation strategies.



BIOCORRIDOR BOULEVARD

Critical to the success of the Biocorridor is the construction of a new four-lane boulevard that will connect SH-47 and F&B Road. This connection will allow for not only vehicular access to the site, but will also provide essential utilities spines that will be required to feed future manufacturing, office space and the town center. The construction of the Biocorridor Boulevard should be divided into three parts: improvements East of SH-47 to Traditions Boulevard (HSC Parkway); improvements from Traditions Boulevard to FM 2818; and improvements east of FM 2818 to Wellborn Road (F&B Road). Phase 1a, identified as the priority focus for initial funding and construction, is the improvements of HSC Parkway from Traditions Boulevard to the proposed TXDOT grade separation at SH-47. The remaining Biocorridor Boulevard improvements are identified as subsequent Phases 2 and 3.

TURKEY CREEK IMPROVEMENTS

Expansion of Turkey Creek Boulevard is also a priority implementation project. It will provide both access and services, and create access from Easterwood Airport. Turkey Creek Boulevard will become one of the significant gateways for the Biocorridor, as it leads directly into the critical Town Center. Turkey Creek Boulevard is identified as Priority project Phase 1b. This roadway will facilitate connections from Biocorridor Boulevard South to Raymond Stotzer Parkway, providing key access to Easterwood Airport and other Texas A&M University facilities.

UTILITIES INFRASTRUCTURE UPGRADES

Additionally, utilities infrastructure upgrades will need to be provided in order to support Phase 1a development. These projects include:

- Sanitary Sewer Piping Extension & Lift Station
- Additional Electrical Substation

Please refer to Utilities Infrastructure Analysis Appendix A, page 33, for more detailed information about the planning assumptions and demand models used to generate Concept Plan recommendations for the recommended priority master infrastructure projects.

MASTER INFRASTRUCTURE PROJECTS:

Phase 1a - Biocorridor Boulevard (HSC Parkway)
West of Tradtions Boulevard to SH-47
Blvd and Blvd Roadway Sections
Utilities Infrastructure
*Gateway from SH-47 into Biocorridor

Phase 1b - Turkey Creek Boulevard
Boulevard Roadway Section
Utilities Infrastructure
*Gateway from Raymond Stotzer into town center and “Bio Park” districts of Biocorridor

Phase 2 - Biocorridor Boulevard
West of FM 2818 to Traditions Boulevard
Multi-lane Blvd Roadway Sections
Utilities Infrastructure

Phase 3 - Biocorridor Boulevard – East of FM 2818
Blvd Roadway Section
Utilities Infrastructure
Tunnel Underpass (between VetMed & AgriLife)

Other Capital Investment
Sanitary Sewer Piping Extension & Lift Station
Additional Electrical Substation

OPINION OF PROBABLE COST ESTIMATES

As a part of the Concept Plan, rough order of magnitude cost estimates were developed for the master infrastructure projects outlined in the recommendations and can be found in Appendix A. Preliminary cost projections for Phase 1a can be found in Appendix B.

FOCUS ON PHASE 1a

Recognizing significant funding constraints, the concept plan recommends a focus on Master Infrastructure Project Phase 1a. This infrastructure is critical to the development of the “BioPark” manufacturing district of the Concept Land Use Plan connecting what is currently Traditions Boulevard to SH-47 and the recently announced SH-47 bridge project funded in large part by TxDOT at the western end of HSC Parkway.

This project is considered to be a critical investment that will serve as a catalyst for significant private sector investment and economic impact in the BioPark district and the adjacent town center area.

PHASE 1a - COST ESTIMATE

At finalization of the draft Concept Plan, Kimley-Horn and Associates, Inc., the Consulting Team’s transportation and infrastructure engineers, was asked to prepare a preliminary order-of-magnitude estimate of probable cost for the proposed Phase 1a alignment, including related utility infrastructure and site work improvements. Kimley-Horn was also asked to include water and sewer improvements, as well as enhanced streetscape and lighting in their estimate.

The cost estimate provided including a 20% contingency is $4,337,953 using existing improvements and asphalt pavement or $4,845,126 including the removal of existing asphalt pavement and curb and gutter and using reinforced concrete (see APPENDIX B).

PHASE 1a - FUNDING AND TIMELINE

Lacking a dedicated funding mechanism for the Biocorridor’s recommended master infrastructure projects, a fund “as you go” incremental strategy should be applied with Phase 1a being the priority. Furthermore, it is recommended that at a minimum each entity fund only infrastructure within its respective jurisdiction. It is also recommended that Phase 1a be completed by no later than January 2012.

IMPLEMENTATION

PRIORITY MASTER INFRASTRUCTURE PROJECTS: PHASES 1-3

Based upon the recommendations detailed in this section, coupled with stakeholder engagement, the below Implementation Plans table and outline of next steps represent a solid near-term direction.

IMPLEMENTATION PLANS

ITEM	CURRENT PLAN	FUTURE POSSIBILITY
Organizational Structure	Interlocal agreements to establish uniform land use regulations, incentives, utility rates	Special district with shared governance, shared costs and benefits, dedicated funding
Infrastructure	Establish priority infrastructure projects and implement incrementally (Phase 1a near-term priority)	Create comprehensive master infrastructure for the entire corridor
Governance	Implementation Committee with representation from stakeholders	Unified special district leadership team with statutory authorities
Funding	Fund "as you go" with each entity funding only infrastructure within own jurisdiction	Single district with committed, shared funding and benefit

NEXT STEPS: ORGANIZATION, BUSINESS DEVELOPMENT, ACADEMIC

Organization

1. Signing of Guiding Principles Declaration by "Biocorridor Partners"
2. Establish implementation committee and select point person to lead implementation
3. Develop implementation timeline with critical milestones and decision points
4. Communicate concept plan and engage stakeholders: - faculty, students, state and federal leadership
5. Endorsement of concept plan by strategic partners via Guiding Principles Declaration (cities, county, academic institutions, others)
6. Develop initial draft interlocal agreement and set timeline for approval by cities, county, Texas A&M University System

Business Development

1. Priority 1: Finalize projects in pipeline
2. Pursue and secure registration of OneHealth Plus Biocorridor™ and logo
3. Develop launch plan, branding, and timeline (May 2011)
4. Establish a business development strategy, responsibility, authority, and funding
5. Identify private investors, developers, and other sources of capital
6. Pursue federal agency approval or legislation to enable eligibility of the entire Biocorridor for USDA Business & Industry Guarantee Loans

Academic

1. Initiate plan for a STEM-oriented school within the Biocorridor focused on Biotechnology, Space and Life Sciences
2. Harmonize and prepare research strategy for OneHealth Plus™ academic research and educational programs:
   a. OneHealth Diagnostics anchored by Texas Veterinary Medical Diagnostics Laboratory program: Both reference lab and development of new diagnostics
   b. OneHealth Computational Biology: Genomics, comparative medicine, epidemiology, comparative effectiveness
   c. OneHealth Simulation Center
   d. OneHealth Program in Nutrition and Functional Foods for Humans and Animal
   e. Architecture, policy, ethics, sociology.

CONCLUSIONS

6

NOW'S THE TIME

Concept Master Plan: View of College of Veterinary Medicine, mixed use and Texas A&M AgriLife

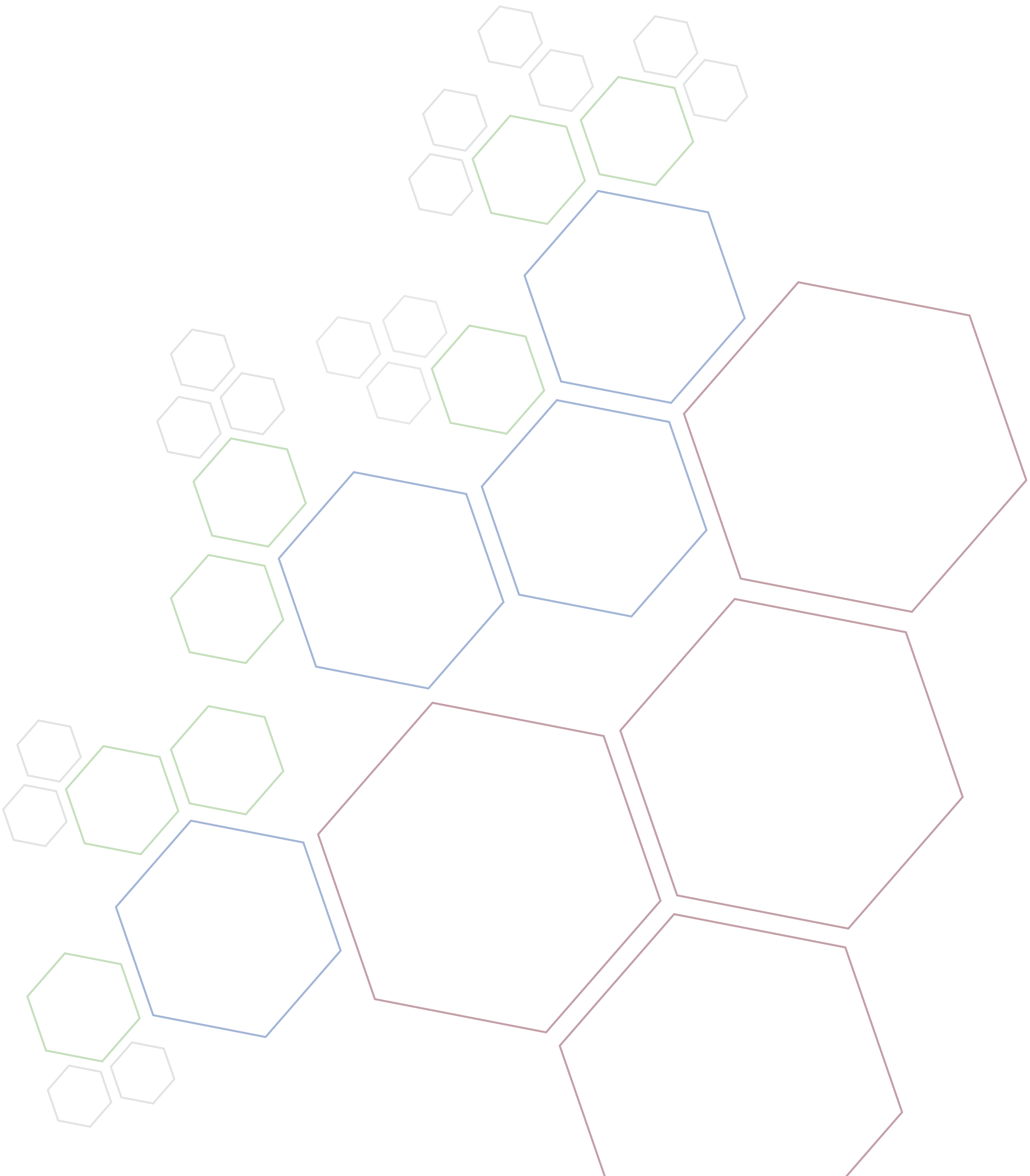
CONCLUSION

The Research Valley Biocorridor Concept Master Plan project is the first step in establishing a leading-edge international biotechnology zone in The Research Valley.

The Concept Master Plan for the Research Valley Biocorridor is both visionary and responsive. The idea behind the project – the creation of a biotechnology epicenter focused on the novel OneHealth Plus™ initiative in a planned urban environment is unique, and sets the stage for innovative growth over the next several decades. The Concept Master Plan builds upon the momentum already established within the Biocorridor, and proposes critical organizational and physical infrastructure recommendations. The vision articulated within the Concept Master Plan provides a roadmap for further development and refinement as the project continues to advance.

The Biocorridor Concept Plan physically organizes a diverse palate of commercial and academic land uses around a town center development, providing the interactive and interdisciplinary framework ideal for idea exchange and collaboration. Civic elements and gathering spaces such as town squares and monuments dot the Biocorridor, creating a memorable sense of place that will attract Creative Class knowledge workers from across the globe. Walkable and eco-friendly, the Biocorridor block patterns are based on a scale-able design approach: modular laboratories, mixed-use manufacturing, and production pods can be assembled into plug and play infrastructure, wrapped with pedestrian-friendly uses and set into an urban environment with ease.

The Biocorridor window of opportunity is currently open. The Concept Master Plan represents a shared vision to capture that opportunity. Strategic steps over the next several months will solidify the vision. Now's the time.



ACKNOWLEDGEMENTS

RESEARCH VALLEY BIOCORRIDOR TASK FORCE

Dr. Craig Nessler, AgriLife
Dr. Daniel Holt, Blinn College
Judge Randy Sims, Brazos County
Commissioner Duane Peters, Brazos County
Commissioner Kenny Mallard, Brazos County
Mayor Jason Bienski, City of Bryan
Dennis Goehring, City of Bryan
Mayor Nancy Berry, City of College Station
Glenn Brown, City of College Station
David Gwin, City of College Station
Dr. Nancy Dickey, Texas A&M Health Science Center
Dr. Jeffrey Seemann, Texas A&M University
Dr. Brett Giroir, Texas A&M University System
Guy Diedrich, Texas A&M University System
Vergel Gay, Texas A&M University System
Larry Hodges, The Research Valley Partnership
Dr. Stephen Holditch, The Research Valley Partnership
Chris Peterson, The Research Valley Partnership

THE RESEARCH VALLEY PARTNERSHIP, INC.

Todd E. McDaniel, President & CEO
Bob Malaise, VP of Economic Development Services
Susan Vestal, VP of Corporate Relations
Chuck Martinez, VP of Innovations Services
Misty Boone, Director of Corporate Relations

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Heather Walton, Graphic Designer
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SHUPE VENTURA LINDELOW & OLSON, PLLC:
LEGAL & ECONOMIC DEVELOPMENT ADVISING

JACOBS: BIOPHARMA CAMPUS PLANNING CONSULTANT

KIMLEY-HORN AND ASSOCIATES, INC.:
TRANSPORTATION & INFRASTRUCTURE PLANNING

TBG PARTNERS, INC.
ILLUSTRATOR

APPENDIX A

A

UTILITIES INFRASTRUCTURE ANALYSIS

UTILITIES INFRASTRUCTURE RECOMMENDATIONS

High-level demand models have been generated by consultants from the civil engineering and transportation planning firm of Kimley-Horn in order to identify priority infrastructure projects. The resulting preliminary supply recommendations take into account projected demands for Phase One development only, which is an area defined by FM 2818, SH 47, Raymond Stotzer, and roughly the TAMHSC property line. As more detailed information becomes available about project demands, these Concept Plan recommendations will be refined in later phases of work.

Please refer to the series of exhibits and attachments at the end of Appendix A for recommendations. The assumptions and methodology used for planning purposes are described in the following paragraphs.

WATER SUPPLY & DISTRIBUTION

The University, College Station and Bryan all have excess supply as well as distribution mains within or near the Biocorridor.

WATER DEMANDS

Water demands were calculated using the Bryan/College Station Unified Design Guidelines Method 2 – Land Use Determination. The Concept Master Plan was used to prepare Exhibit A-1, "Projected Utility Demands" located at the end of Appendix A. The manufacturing demands were calculated by using a weighted average by area that included: facilities similar to G-Con that are expected to use 6,700GPD per acre (30%); facilities similar to TIPS that are expected to use 2,000GPD per acre (40%); and facilities similar to NCTM, that are expected to use 750GPD per acre (30%).

The mixed-use demands included first floor commercial/retail, two floors of multifamily residential, and were calculated by using 18 units per acre, 2.67 persons per unit, at 100GPD per person, or 4,806GPD per acre. Refer to Attachment A.1, Water/ Wate Water Demand Projections.

WATER DISTRIBUTION SYSTEM

A model of the proposed water distribution system was created to simulate the peak hour demands, and peak hour demand with a fire flow demand at the system extremity. The peak hour demands were calculated using four times (4X) daily demands in accordance with the Bryan/College Station Unified Design Guidelines. The model assumed a static water pressure of 50psi for both systems, a metered interconnect near the G-Con facility, a 2,500GPM fire flow, and included elevation and friction-loss considerations. See Attachment A.2, Water Distribution Model. The proposed water distribution system performed well within the range of allowable velocity and pressure criteria. It should be noted that the pressure assumption used in the model is conservative. The proposed system should be capable of operating in the range of 65-75psi or more, which will be capable of serving demands in excess of those projected. Furthermore, in the event the actual demands exceed the projected demands, the proposed 12 inch main south of Health Science Center Parkway that will not be required in the near term, can be upsized to provide additional capacity. See Appendix A, Exhibit A-2, "Proposed Water & Sanitary Sewer".

WASTEWATER COLLECTION & TREATMENT

The University has an existing collection system within the corridor, as well as excess capacity in their wastewater treatment facility. The City of Bryan will be constructing a 2 MGD treatment facility just west of the corridor. The City of College Station currently has a very limited collection system within the corridor that discharges into the University system via a small lift-station adjacent to FM 2818. We were directed to focus our efforts on the College Station and Bryan collection systems to serve Phase One. Phase One was defined as the area west of FM 2818, east of SH 47, and included Turkey Creek Road.

WASTEWATER DEMANDS

Wastewater flows were calculated using the Bryan/College Station Unified Design Guidelines Method 2 – Land Use Determination. The Concept Master Plan was used to prepare Exhibit A-1, "Projected Utility Demands". The wastewater flows were calculated using a peaking factor of four times (4X) the daily calculated water demands. See Attachment A.1, Water/Waste Water Demand Projects.

WASTEWATER COLLECTION

The proposed Phase I collection system begins on the north end of Turkey Creek Road and flows south, to take advantage of the existing fall of the topography to minimize construction costs. The proposed collection system turns west, just north of the back-lot property lines of the small parcels fronting along Hwy. 60, to a proposed lift-station adjacent to SH 47. The flow is then pumped to a proposed City of Bryan gravity line that discharges into the existing City of Bryan collection system. The proposed wastewater collection system was sized to convey the calculated flows using minimum grades in accordance with the Bryan/College Station Unified Design Guidelines. See Exhibit A-3 "Proposed Water & Sanitary Sewer".

WASTEWATER TREATMENT

As shown on the "Proposed Water & Sanitary Sewer" Exhibit, the City of Bryan will be constructing the Thompson's Creek Wastewater Treatment Plant. The facility is designed to treat 2MGD, and is designed to be expanded to treat 4MGD. The project is scheduled to be bid this year and be operational in 2011.

ELECTRICAL SUPPLY & GAS

The University, College Station and Bryan all have excess electrical supply, as well as distribution systems within the corridor. An electrical duct bank is proposed to be installed within the proposed boulevard section from Wellborn Road to SH 47. Atmos, the local gas supplier, has an existing 4" main in Traditions Boulevard that serves the Health Science Center (HSC) area, and a 6" main on the south side of Hwy. 60 that serves the Airport.

The existing 4" gas main serving the HSC currently has 28Mcfh of excess capacity. 22Mcfh is currently allocated for the future expansion of the HSC, leaving 6Mcfh available. Atmos has identified a constraint in the system serving the area. The 6" main in Villa Maria, from Finfeather to Forestwood, has a 900'-4" segment that needs to be replaced with a 6" line. This replacement will increase the available capacity to the area 7Mcfh to 35Mcfh, or 13Mcfh more than the HSC allocation. By adding 6,100LF of 6" main along SH47 from Villa Maria to the existing 4" main crossing HSC, the available excess capacity can be increased 65Mcfh, or 78Mcfh more than the HSC allocation. See Exhibit A-3, "Existing and Proposed Phase I Electric and Gas". Attachment A.3, College Station Utilities, includes a letter from College Station Utilities describing their existing capacity within the area and their plans for future improvements. Attachment A.4, Atmos Energy Schematic, includes correspondence from Atmos regarding system capacity as of July, 2010.

DRAINAGE & FLOODPLAINS

The Concept Master Plan reserves several areas around the existing floodplains as green space and detention areas. A detailed master drainage study will be required to define the detention requirements for the proposed development of the area, as well as the size of the internal storm sewer system required to convey the developed flows.

Bryan:

Id	Use	Acres	Water Demands: ADD per Acre (GPD/Ac)	Water Demands: Equiv. Units/Ac	Water Demands: Avg. Flow (GPM)	SS Demands: Avg. Demand w/ 4x P.F. (GPD/Ac)	SS Demands: Avg. Flow (GPM)
B1	Mixed Use	39.3	4806	18	131	19,224	525
B2	RVP Manufacturing	21.0	3020	11.3	44	12,080	176
Total					175		701

College Station:

Id	Use	Acres	Water Demands: ADD per Acre (GPD/Ac)	Water Demands: Equiv. Units/Ac	Water Demands: Avg. Flow (GPM)	SS Demands: Avg. Demand w/ 4x P.F. (GPD/Ac)	SS Demands: Avg. Flow (GPM)
C1	Mixed Use	7.2	4806	18	24	19,224	96
C2	RVP Manufacturing	87.9	3020	11.3	184	12,080	737
C3	Mixed Use	136.0	4806	18	454	19,224	1,816
C4	Mixed Use	40.0	4806	18	134	19,224	534
C5	Mixed Use	15.3	4806	18	51	19,224	204
C6	Mixed Use	11.0	4806	18	37	19,224	147
Total					884		3,534

Assumptions:

The **Bryan/College Station 2009 Unified Design Guidelines Method 2 - Land Use Determination** was followed to establish ADD.

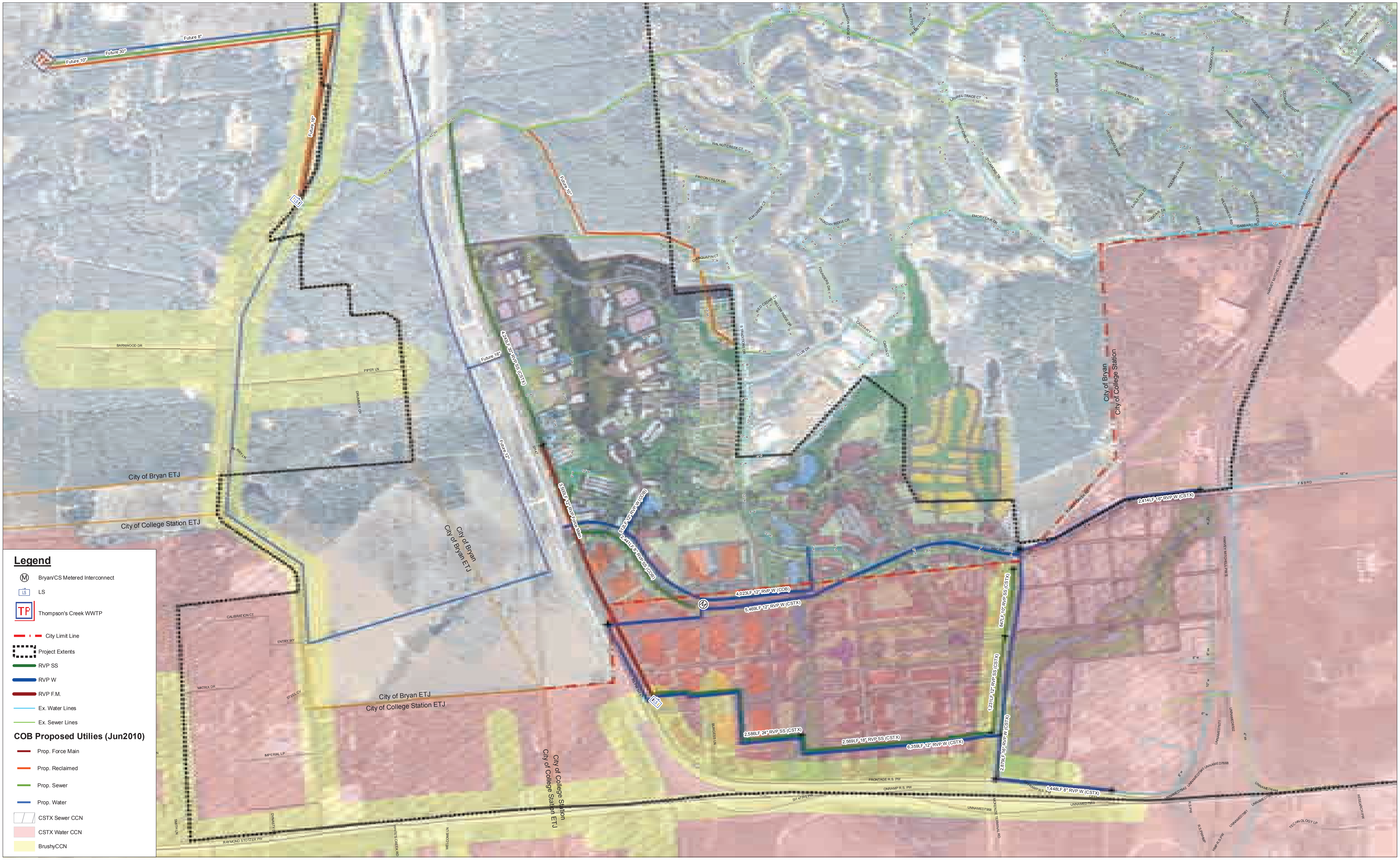
1. Mixed Use is comprised of first floor commercial/retail and two floors of multifamily residential.
   - Use 18 units per acre, 2.67 persons per unit, at 100 GPCD.
2. RVP Manufacturing:
   - Use 60.4 persons per acre at 50 GPCD.
   - Table below outlines density percentages used.
   - G. Conn: 9 acre site, 200 GPM, 5hrs/day (per MEP Eng.)

Description	Equiv. Pers./Ac	Percent RVP Manu.	Weighted Avg.
Existing G. Conn Manufacturing	133	30%	39.9
Wet Lab / Office (TIPS)	40	40%	16
NCTM / Industrial	15	30%	4.5
Projected RVP Manufacturing persons per acre:			60.4

3. Fire Flow Model:
   - Assumed 2,500 GPM fire hydrant demand at system extremity
   - Assumed Peak hour demands of 4x ADD at all other nodes
   - Maintained residual system pressures at or above 20 psi
   - Limited maximum pipe velocities less than 12 fps
4. Equiv. Units/Ac defined as equivalent living unit: 2.67 persons at 100 GPCD

Kimley-Horn and Associates, Inc.

Exhibit A-1: Projected Utility Demands



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Fax No.(979) 846-6450
Contact: Mike Moore, P.E.

Exhibit A-2: Proposed Water & Sanitary Sewer

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Fax No.(979) 846-6450
Contact: Mike Moore, P.E.

Exhibit A-3: Existing and Proposed Phase I Electric and Gas

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College Station, Texas 77840
TBPE Registration No. F-928
Tel. No.(979) 846-6401
Fax No.(979) 846-6450
Contact: Mike Moore, P.E.

Exhibit A-4: Transportation Framework Master Plan

Attachment A.1

RVP - Bio Corridor Water/Waste Water Demand Projections
Kimley-Horn & Associates

Bryan:

Id	Use	Acres	Water Demands			SS Demands	
			ADD per Acre (GPD/Ac)	Equiv. Units/Ac	Avg. Flow (GPM)	Avg. Demand w/ 4x P.F. (GPD/Ac)	Avg. Flow (GPM)
B1	Mixed Use	39.3	4806	18	131	19,224	525
B2	RVP Manufacturing	21.0	3020	11.3	44	12,080	176
Total					175		701

College Station:

Id	Use	Acres	Water Demands			SS Demands	
			ADD per Acre (GPD/Ac)	Equiv. Units/Ac	Avg. Flow (GPM)	Avg. Demand w/ 4x P.F. (GPD/Ac)	Avg. Flow (GPM)
C1	Mixed Use	7.2	4806	18	24	19,224	96
C2	RVP Manufacturing	87.9	3020	11.3	184	12,080	737
C3	Mixed Use	136.0	4806	18	454	19,224	1,816
C4	Mixed Use	40.0	4806	18	134	19,224	534
C5	Mixed Use	15.3	4806	18	51	19,224	204
C6	Mixed Use	11.0	4806	18	37	19,224	147
Total					884		3,534

Assumptions:

The **Bryan/College Station 2009 Unified Design Guidelines Method 2 - Land Use Determination** was followed to establish ADD.

1. Mixed Use is comprised of first floor commercial/retail and two floors of multifamily residential.
   - Use 18 units per acre, 2.67 persons per unit, at 100 GPCD.
2. RVP Manufacturing:
   - Use 60.4 persons per acre at 50 GPCD.
   - Table below outlines density percentages used.
   - G. Conn: 9 acre site, 200 GPM, 5hrs/day (per MEP Eng.)

Description	Equiv. Pers./Ac	Percent RVP Manu.	Weighted Avg.
Existing G. Conn Manufacturing	133	30%	39.9
Wet Lab / Office (TIPS)	40	40%	16
NCTM / Industrial	15	30%	4.5
Projected RVP Manufacturing persons per acre:			60.4

3. Fire Flow Model:
   - Assumed 2,500 GPM fire hydrant demand at system extremity
   - Assumed Peak hour demands of 4x ADD at all other nodes
   - Maintained residual system pressures at or above 20 psi
   - Limited maximum pipe velocities less than 12 fps
4. Equiv. Units/Ac defined as equivalent living unit: 2.67 persons at 100 GPCD

Attachment A.2

RVP Water Distribution Model
Kimley-Horn & Associates

Phase I - Static Peak Hour Demands

Network Table - Links

	Length	Diameter	Roughness	Flow	Velocity	Unit Headloss	Friction Factor	Total Headloss
Link ID	ft	in		GPM	fps	ft/Kft		ft
Pipe CSTX1	460	18	139	3184	4.01	2.65	0.016	1.22
Pipe Interconnect	108.75	12	147	0	0	0	0	0.00
Pipe RVP1	2413.7	16	148	3184	5.08	4.19	0.014	10.11
Pipe RVP2a	2478.09	16	147	1740	2.78	1.39	0.015	3.44
Pipe RVP2b	1495.55	12	147	832	2.36	1.44	0.017	2.15
Pipe RVP2c	1495.55	12	147	832	2.36	1.44	0.017	2.15
Pipe RVP3	2879.3	16	148	908	1.45	0.41	0.017	1.18
Pipe RVP-B1	1849.25	12	147	700	1.99	1.04	0.017	1.92
Pipe RVP-B2	1295.81	12	147	524	1.49	0.61	0.018	0.79
Pipe serv-B1	479.67	8	146	524	3.34	4.45	0.017	2.13
Pipe serv-B2	1000	8	146	176	1.12	0.59	0.02	0.59
Pipe serv-C1	500	8	146	96	0.61	0.19	0.022	0.10
Pipe serv-C2	1000	8	146	736	4.7	8.35	0.016	8.35
Pipe serv-C3a	1000	8	146	908	5.8	12.32	0.016	12.32
Pipe serv-C3b	1000	8	146	908	5.8	12.32	0.016	12.32
Pipe serv-C4	1000	8	146	536	3.42	4.64	0.017	4.64

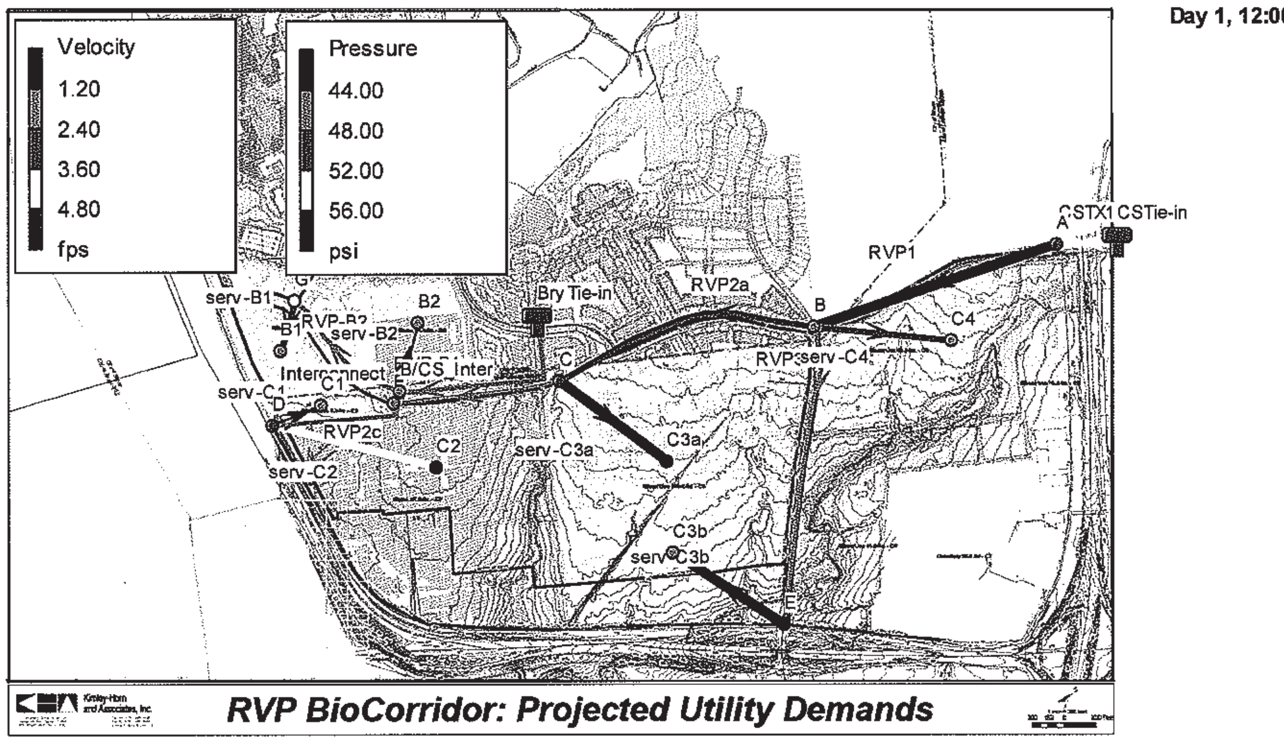
Network Table - Nodes

	Elevation	Base Demand	Demand	Head	Pressure
Node ID	ft	GPM	GPM	ft	psi
Junc A	344	0	0	457.78	49.30
Junc B	338	0	0	447.66	47.52
Junc B/CS_Inter	334	0	0	443.07	47.26
Junc B1	334	131	524	440.15	45.99
Junc B2	338	44	176	442.48	45.27
Junc C	330	0	0	444.22	49.49
Junc C1	332	24	96	439.83	46.72
Junc C2	332	184	736	431.58	43.15
Junc C3a	334	227	908	431.9	42.42
Junc C3b	326	227	908	434.15	46.86
Junc C4	338	134	536	443.02	45.50
Junc D	326	0	0	439.93	49.36
Junc E	314	0	0	446.48	57.40
Junc F	332	0	0	442.07	47.70
Junc G	320	0	0	442.28	52.98
Tank BryTie-in	330	#N/A	-700	445	49.83
Tank CSTie-in	344	#N/A	-3184	459	49.83

Assumptions:

- 50 psi static pressure connection with CSTX 18" DI at NE corner of project area and 2818
- 50 psi static pressure connection with existing COB system at NW corner of project site
- B/CS Interconnect closed
- Peak Hour Demands at all demand nodes

Static Peak Hour Demand Model



RVP Water Distribution Model
Kimley-Horn & Associates

Phase I - Static Peak Hour Demands w/Fire demand at system extremity

Network Table - Links

	Length	Diameter	Roughness	Flow	Velocity	Unit Headloss	Friction Factor	Total Headloss
Link ID	ft	in		GPM	fps	ft/Kft		ft
Pipe CSTX1	460	18	139	4035.52	5.09	4.12	0.015	1.90
Pipe Interconnect	108.75	12	147	1648.48	4.68	5.09	0.015	0.55
Pipe RVP1	2413.7	16	148	4035.52	6.44	6.50	0.013	15.69
Pipe RVP2a	2478.09	16	147	2591.52	4.14	2.90	0.015	7.19
Pipe RVP2b	1495.55	12	147	1683.52	4.78	5.30	0.015	7.93
Pipe RVP2c	1495.55	12	147	3332	9.45	18.75	0.014	28.04
Pipe RVP3	2879.3	16	148	908	1.45	0.41	0.017	1.18
Pipe RVP-B1	1849.25	12	147	2348.48	6.66	9.81	0.014	18.14
Pipe RVP-B2	1295.81	12	147	524	1.49	0.61	0.018	0.79
Pipe serv-B1	479.67	8	146	524	3.34	4.45	0.017	2.13
Pipe serv-B2	1000	8	146	176	1.12	0.59	0.02	0.59
Pipe serv-C1	500	8	146	96	0.61	0.19	0.022	0.10
Pipe serv-C2	1000	8	146	736	4.7	8.35	0.016	8.35
Pipe serv-C3a	1000	8	146	908	5.8	12.32	0.016	12.32
Pipe serv-C3b	1000	8	146	908	5.8	12.32	0.016	12.32
Pipe serv-C4	1000	8	146	536	3.42	4.64	0.017	4.64

Network Table - Nodes

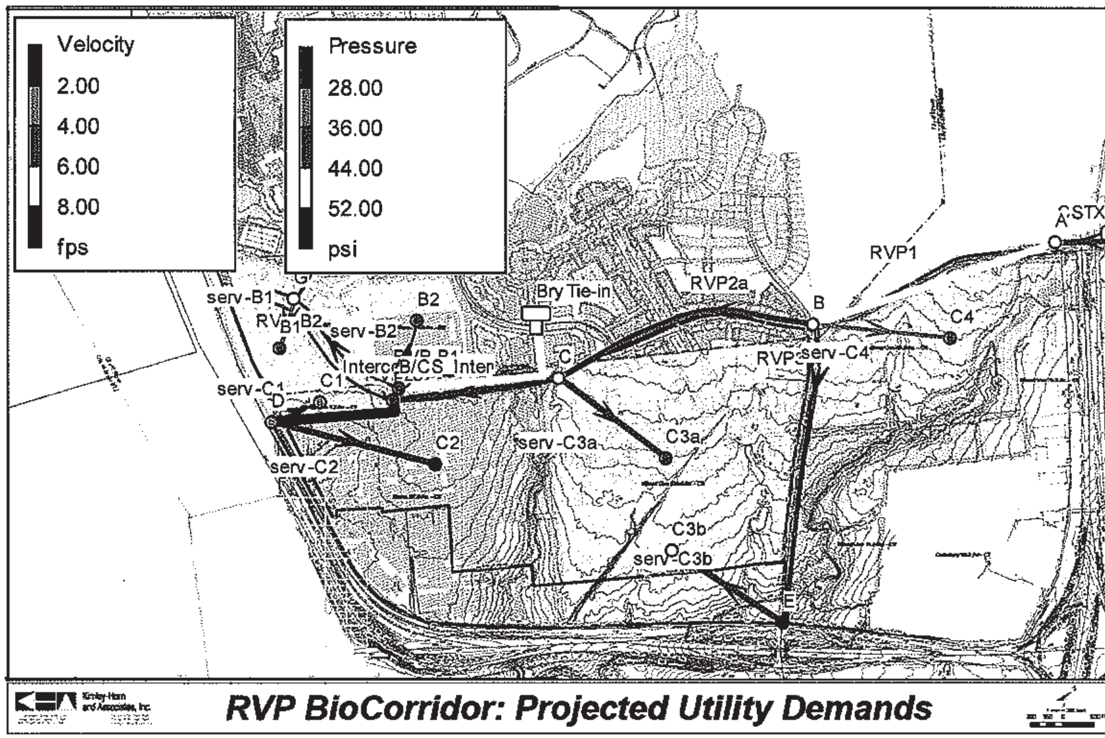
	Elevation	Base Demand	Demand	Head	Pressure
Node ID	ft	GPM	GPM	ft	psi
Junc A	344	0	0	457.11	49.01
Junc B	338	0	0	441.41	44.81
Junc B/CS_Inter	334	0	0	426.86	40.23
Junc B1	334	131	524	423.93	38.97
Junc B2	338	44	176	426.27	38.25
Junc C	330	0	0	434.22	45.16
Junc C1	332	24	96	398.16	28.67
Junc C2	332	184	736	389.90	25.09
Junc C3a	334	227	908	421.90	38.09
Junc C3b	326	227	908	427.91	44.16
Junc C4	338	134	536	436.77	42.80
Junc D	326	2500	2500	398.25	31.31
Junc E	314	0	0	440.23	54.69
Junc F	332	0	0	426.30	40.86
Junc G	320	0	0	426.06	45.96
Tank BryTie-in	330	#N/A	-2348.48	445.00	49.83
Tank CSTie-in	344	#N/A	-4035.52	459.00	49.83

Assumptions:

- 50 psi static pressure connection with CSTX 18" DI at NE corner of project area and 2818
- 50 psi static pressure connection with existing COB system at NW corner of project site
- B/CS Interconnect open
- 2500 gpm fire flow at node D.
- Peak Hour Demands at all demand nodes

Static Peak Hour Demand Model w/ Fire Flow Demand

Day 1, 12:0(



Attachment A.3

College Station Utilities
Reliable, Affordable, Community Owned

P.O.Box 9960 • 1601 Graham Road • College Station, TX 77842
Phone: 979-764-3660 Fax: 979-764-3452

June 18, 2010

The City of College Station (COCS) is singly certified by the Public Utility Commission of Texas (PUCT) to serve the electric requirements of a significant portion of the proposed Research Valley Partnership (RVP) BioCorridor. Because of this certification, we are committed to serve any loads that currently exist or are proposed in the future for this area.

The current electric loads for this area are intermittent as the area is not yet fully developed. Immediate service potential in this area is about 1 MW, but additional load serving capability can be derived as the potential loads develop.

Plans for the ultimate service of this area include the addition of Northgate Substation in 2013 and the extension of two feeders from the Dowling Road Substation, which is currently under construction. Northgate Substation will ultimately consist of two 40 MVA 138/12.5kV substation transformers to serve load in the Northgate area and in the currently undeveloped area of the BioCorridor. The two feeders from Dowling Road Substation would serve a potential 16 MVA of load and would required TXDOT and A&M University permits, right-of-way and easements. Timing and sizing of these facilities could be adjusted to meet the demands of load development in this area.

As plans for development of the area are provided, COCS Electric Utilities will provide proposed plans of where future electric lines can be places to provide service to the area. COCS Electric Utilities would also like to work with whomever necessary to include the installation of electric conduit systems in construction bid packets for future road construction projects.

Attached is a map of the area showing the Electric Service territory boundaries between COCS Electric Utilities and Bryan Texas Utilities. Everything south of the green line is part of COCS certification area. As noted on the map you will see areas of the COCS Electric Utilities system that have already been upgrade or place underground to provide electric service to the area.

We look forward to working with you as the RVP Bio Corridor develops.

For future question you may contact:

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Assistant Director
Electric Utilities
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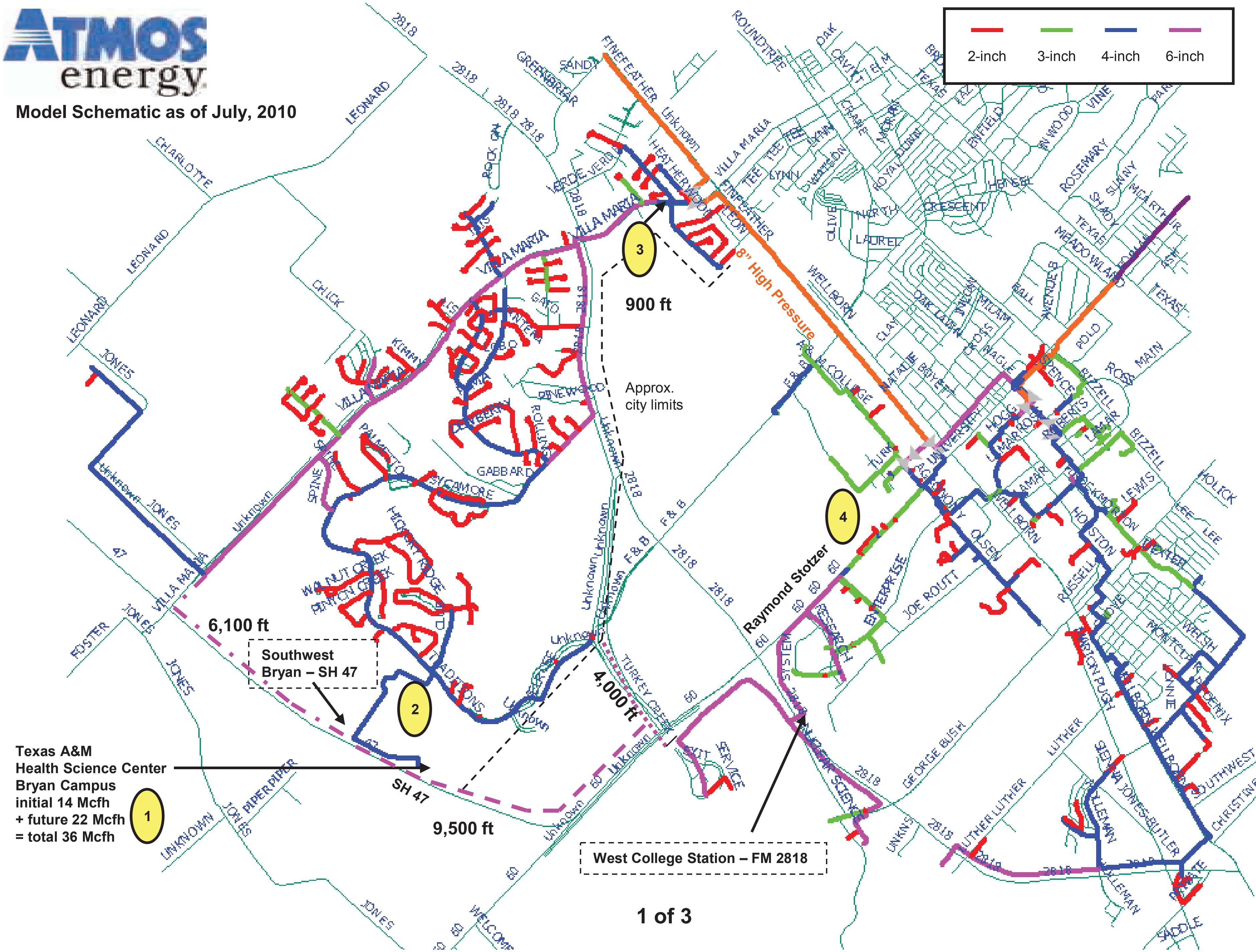
tcrabb@cstx.gov

Tony Michalsy TVM
Electric T&D Superintendent
979-764-3438
tmichalsky@cstx.gov


COLLEGE STATION CITY LIMITS
BRYAN CITY LIMITS
RAYMOND STOTZER PW
STATE HIGHWAY 47
This area of feeder line was upgraded and relocated with the development of Valley Park Center.
This area was converted to underground with the development of the cemetery. Currently have enough conduit for 1 feeder to be installed.

Attachment A.4

Model Schematic as of July, 2010



Incremental capacity calculation as of July, 2010 for Southwest Bryan & West College Station / Texas A&M

- Arbitrarily selected two locations to determine incremental capacity available

  Southwest Bryan – State Hwy 47 on 4-inch main approximately 3,430 feet west of Traditions Dr.

  West College Station / Texas A&M – on 6-inch main at FM 2818 south of Raymond Stotzer Pkwy

- Assumed line pressure will sufficient delivery pressure
- Assumed design peak day/hour demands for existing customers with no new load additions as of July, 2010

Southwest Bryan – State Hwy 47

Existing system's incremental capacity calculation is 6 Mcfh

1 takes into account future load for Phase 2 - Texas A&M Health Science Center Bryan Campus

2 capacity constraint with 4-inch west of Traditions Dr. to State Hwy 47 (anticipate growth along SH 47 to be served from future extensions in SH 47 from Villa Maria and from Raymond Stotzer / FM 60)

3 capacity constraint with 4-inch in Villa Maria from Finfeather to 6-inch between Forestwood & Manorwood (approximately 900 feet)

Replace ~ 900 feet of 4-inch in Villa Maria (#3 above) – incremental capacity calculation is 13 Mcfh, in addition, install ~ 6,100 feet of 6-inch in SH 47 south from Villa Maria – incremental capacity calculation is a total of 78 Mcfh

ATMOS energy

West College Station / Texas A&M

Existing system's incremental capacity calculation is 28 Mcfh

4 capacity constraint with 3-inch in Raymond Stotzer from Agronomy Rd to Discovery Dr. (~ 2,800 ft)

Replace ~ 900 feet of 4-inch in Villa Maria (#3 Southwest Bryan system) and install ~ 4,000 feet of 6-inch in Turkey Creek from Raymond Stotzer to 4-inch in Melrose Pkwy – incremental capacity calculation for Southwest Bryan - SH 47 assuming all incremental capacity on Raymond Stotzer is made available for Southwest Bryan is a total of 25 Mcfh, assumes no new load additions west of Agronomy

Or

Replace ~ 900 feet of 4-inch in Villa Maria (#3 Southwest Bryan system) and install ~ 9,500 feet of 6-inch in Raymond Stotzer and State Hwy 47 from the Easterwood Airport entrance to the 4-inch main on SH 47 west of Traditions Dr. – incremental capacity calculation for Southwest Bryan - SH 47 assuming all incremental capacity on Raymond Stotzer is made available for southwest Bryan is a total of 41 Mcfh, assumes no new load additions west of Agronomy

APPENDIX B

OPINION OF PROBABLE COSTS - PRIORITY INFRASTRUCTURE PROJECTS

B

Health Science Center Pkwy. Extention Cost Estimate - Alignment 1, Asphalt Alternate

Research Valley Partnership

Project Information

Project Name: Health Science Center Pkwy. Extention
Project Location: Health Science Center Pkwy. & S.H. 47

Construction Cost Projection

Item Description	Quantity	Unit	Unit Price	Item Cost
RIGHT OF WAY PREPARATION				
Clearing (125' row @ 2,250 L.F.)	6.5	AC	$ 1,000	$ 6,500
Earthwork (assume 24" excavation to 2' outside BOC)	10420	CY	$ 8	$ 83,360
SUBTOTAL				**$ 89,860**
PAVING				
6" Compacted, Stabilized Subgrade	19829	SY	$ 7	$ 138,800
8" Limestone Base	18385	SY	$ 12	$ 220,616
2" HMAC Pavement	15495	SY	$ 14	$ 216,927
24" x 6" Curb & Gutter	12915	LF	$ 14	$ 180,810
SUBTOTAL				**$ 757,153**
DRAINAGE				
42" RCP	70	LF	$ 70	$ 4,900
36" RCP	525	LF	$ 65	$ 34,125
30" RCP	400	LF	$ 60	$ 24,000
24" RCP	780	LF	$ 55	$ 42,900
18" RCP	316	LF	$ 50	$ 10,900
10' Curb Inlet	12	EA	$ 2,500	$ 30,000
Junction Box	5	EA	$ 3,500	$ 17,500
Headwall	2	EA	$ 5,000	$ 10,000
SUBTOTAL				**$ 174,225**
UTILITIES				
12" Water Trans.	4293	LF	$ 65	$ 279,045
Water Fittings (1 ton / 1,000 L.F.)	4	TON	$ 3,500	$ 15,026
Fire Hydrant Assembly (1 / 500 L.F.)	9	EA	$ 3,000	$ 25,758
8" Sewer Line	2250	LF	$ 55	$ 123,750
4' Manhole	10	EA	$ 3,500	$ 35,000
Electrical Duct Bank	4080	LF	$ 160	$ 652,800
SUBTOTAL				**$ 1,131,379**
CONSTRUCTION SUBTOTAL				***$ 2,152,416***
ALLOWANCES				
Engineering, Testing, & Survey (14% of Construction)	1	LS	$ 301,388	$ 301,388
Pavement Markings and Traffic Signage (3% of Construction)	1	LS	$ 64,578	$ 64,578
SWPPP	1	LS	$ 75,000	$ 75,000
Lighting (75' o.c. both sides)	110	LS	$ 4,000	$ 440,000
Landscape (solid sod w/ trees 100' o.c. median & both sides)	1	LS	$ 255,000	$ 255,000
Sidewalks (2 at 8')	4080	L.F.	$ 80	$ 320,400
ALLOWANCES SUBTOTAL				**$ 1,462,345**

Project Cost Summary

Item Description	Item Cost
Project Construction Subtotal:	$ 3,614,961
20% Contingency	$ 722,992
Total Project Cost:	**$ 4,337,953**

Notes:
No design has been completed.
This OPCC is based on preliminary alignments and sections and the assumptions listed above.
Line sizes were estimated without any detailed flow data for the proposed land uses and represent a rough order of magnitude.

The Engineer has no control over the cost of labor, materials, equipment, or over the Contractor's methods of determining prices or over competitive bidding or market conditions. Opinions of probable costs provided herein are based on the information known to Engineer at this time and represent only the Engineer's judgment as a design

Health Science Center Pkwy. Extention Cost Estimate - Alignment 1, Concrete Alternate

Research Valley Partnership

Project Information

Project Name: Health Science Center Pkwy. Extention

Project Location: Health Science Center Pkwy. & S.H. 47

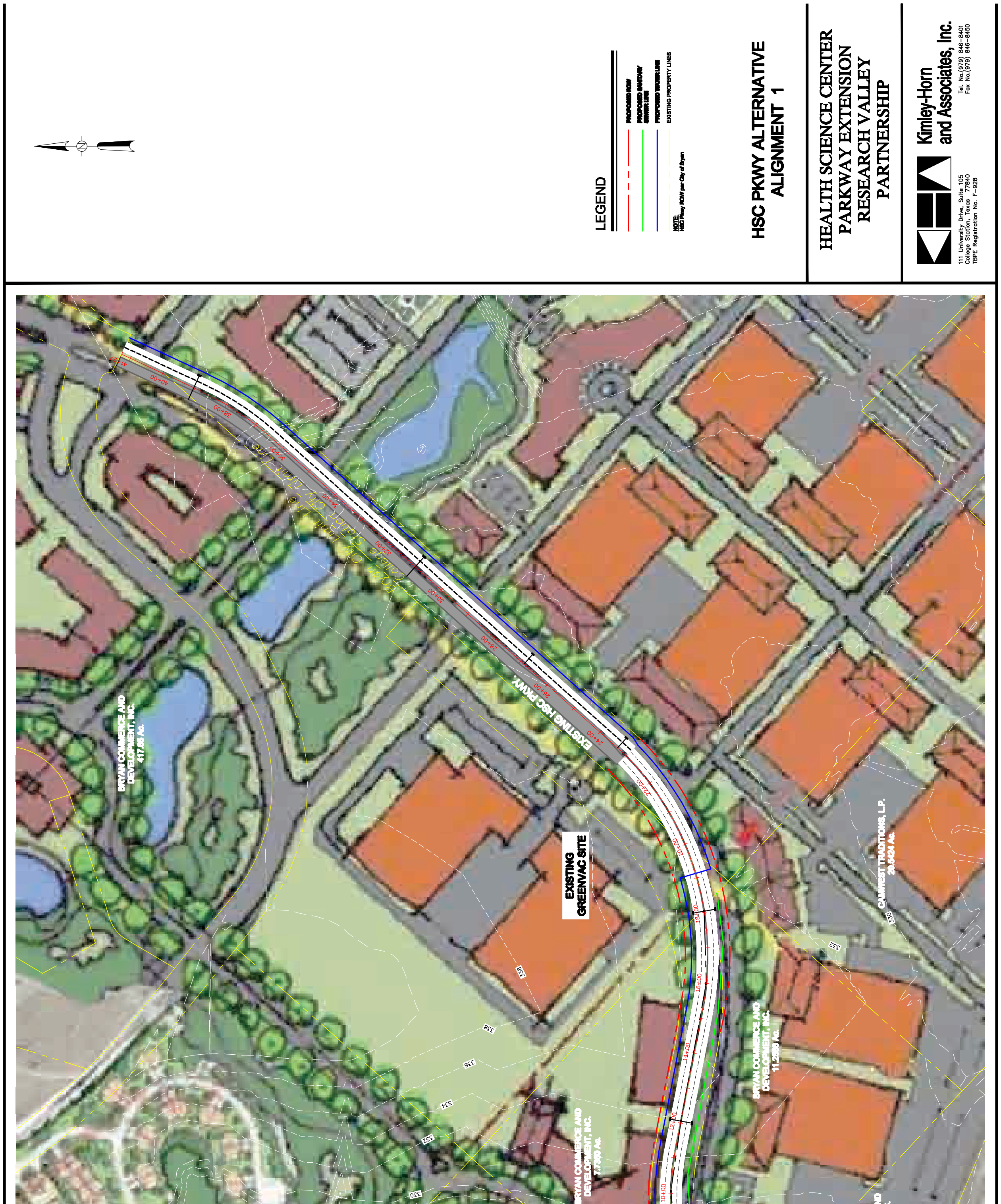
Construction Cost Projection

Item Description	Quantity	Unit	Unit Price	Item Cost
RIGHT OF WAY PREPARATION				
Clearing (125' row @ 2,250 L.F.)	6.5	AC	$ 1,000	$ 6,500
Earthwork (assume 24" excavation to 2' outside BOC)	10420	CY	$ 8	$ 83,360
SUBTOTAL				**$ 89,860**
DEMOILITION				
Remove Existing Asphalt Pavement	5909	SY	$ 14	$ 82,726
Remove Existing Curb & Gutter	3691	LF	$ 6	$ 21,223
SUBTOTAL				**$ 103,949**
PAVING				
6" Compacted, Stabilized Subgrade	19829	SY	$ 7	$ 138,800
8" Reinforced Concrete	24294	SY	$ 34	$ 825,985
6" Curb	16551	LF	$ 3	$ 49,653
SUBTOTAL				**$ 1,014,438**
DRAINAGE				
42" RCP	70	LF	$ 70	$ 4,900
36" RCP	525	LF	$ 65	$ 34,125
30" RCP	400	LF	$ 60	$ 24,000
24" RCP	780	LF	$ 55	$ 42,900
18" RCP	216	LF	$ 50	$ 10,800
10' Curb Inlet	12	EA	$ 2,500	$ 30,000
Junction Box	5	EA	$ 3,500	$ 17,500
Headwall	2	EA	$ 5,000	$ 10,000
SUBTOTAL				**$ 174,225**
UTILITIES				
12" Water Trans	4293	LF	$ 65	$ 279,045
Water Fittings (1 ton / 1,000 L.F.)	4	TON	$ 3,500	$ 15,026
Fire Hydrant Assembly (1 / 500 L.F.)	9	EA	$ 3,000	$ 25,758
8" Sewer Line	2250	LF	$ 55	$ 123,750
4' Manhole	10	EA	$ 3,500	$ 35,000
Electrical Duct Bank	4080	LF	$ 160	$ 652,800
SUBTOTAL				**$ 1,131,379**
CONSTRUCTION SUBTOTAL				**$ 2,513,850**
ALLOWANCES				
Engineering, Testing, & Survey (14% of Construction)	1	LS	$ 351,939	$ 351,939
Pavement Markings and Traffic Signage (3% of Construction)	1	LS	$ 75,416	$ 75,416
SWPPP	1	LS	$ 75,000	$ 75,000
Lighting (75' o.c. both sides)	110	LS	$ 4,000	$ 440,000
Landscape (solid sod w/ trees 100' o.c. both sides)	1	LS	$ 255,000	$ 255,000
Sidewalks (2 at 8')	4080	L.F.	$ 80	$ 326,400
ALLOWANCES SUBTOTAL				**$ 1,523,755**

Project Cost Summary

Item Description	Item Cost
Project Construction Subtotal:	$ 4,037,605
20% Contingency	$ 807,521
Total Project Cost:	**$ 4,845,126**

Notes:
No design has been completed.
This OPCC is based on preliminary alignments and sections and the assumptions listed above.



LEGEND
PROPOSED ROW
PROPOSED SANITARY SEWER LINE
PROPOSED WATER LINE
EXISTING PROPERTY LINES
NOTE: HSC Pkwy ROW per City of Bryan
HSC PKWY ALTERNATIVE ALIGNMENT 1
HEALTH SCIENCE CENTER PARKWAY EXTENSION RESEARCH VALLEY PARTNERSHIP
Kimley-Horn and Associates, Inc.
111 University Drive, Suite 105 College Station, Texas 77840 TBPE Registration No. F-928
Tel. No.(979) 846-8401 Fax No.(979) 846-8450
EXISTING HSC PKWY
EXISTING GREENVAC SITE
BRYAN COMMERCE AND DEVELOPMENT, INC. 417.85 Ac.
BRYAN COMMERCE AND DEVELOPMENT, INC.
CARMEST TRADITIONS, L.P.
TEXAS A & M UNIVERSITY SYSTEM
S.H. 47

MEMORANDUM

July 27, 2010

To: The Research Valley Partnership ("RVP")
Attn: Todd E. McDaniel, CEcD
1500 Research Parkway, Suite 270
College Station, Texas 77845

From: Shupe Ventura Lindelow & Olson, PLLC
Ike Shupe and Misty Ventura
500 Main, Suite 800
Fort Worth, Texas 76102

Re: Research Valley BioCorridor Concept Master Plan
Implementation Alternatives

Dear Todd:

We are pleased to have the opportunity to assist RVP in master planning the emerging BioCorridor located in the "Texas Triangle" and anchored by Texas A&M University System (the "System") projects and future biomedical, biopharmaceutical, and related plant, animal, and human biotech projects (collectively, "BioProjects") in Bryan and College Station, Brazos County, Texas. We have been guided in our efforts by the vision embodied in the "Goal" and "Outcome" set forth in the RVP "Request for Qualifications" dated January 2010[1]. We have assumed that: (i) the opportunity to achieve the Goal and Outcome is intended to be uniform throughout the BioCorridor

[1] The GOAL of the Research Valley BioCorridor is to establish a leading edge biomedical zone in The Research Valley that promotes scientific education and research; technology innovation and commercialization; and high technology business development and attraction focused in particular on preclinical biomedical research and development and biopharmaceutical manufacturing. The desired OUTCOME is a BioCorridor plan that catalyzes substantial economic impact in the region through facilitating increased research funding, workforce development, high wage jobs creation at al levels for area residents and Texas A&M graduates, and private investment.

(i.e., that the development “playing field” should be level throughout the BioCorridor); (ii) the Goal and Outcome cannot be achieved without offering to prospective BioProjects not only “site-ready” land (i.e., land served by public infrastructure and utilities) but additional economic development incentives as well; and (iii) the ability to “fast-track” prospective BioProjects creates a critical competitive advantage. We have been heavily influenced by the fact that development within the BioCorridor will involve two cities, a county and the System (collectively, the “Corridor Partners”), taking into consideration their respective capital investments in infrastructure and utilities and their corresponding capital recovery and revenue expectations. This Memorandum sets forth our recommendations to achieve RVP’s Goal and Outcome for the BioCorridor in light of our stated assumptions and taking into consideration the varied interests of the Corridor Partners)

During the course of the past several months we have learned that the Corridor Partners are familiar with and have successfully used different economic development tools (e.g., tax abatements, tax increment finance reinvestment zones, and grants). Notwithstanding these successes, the critical question remains whether the continued use of these tools on an ad hoc, case-by-case basis will achieve RVP’s Goal and Outcome. We think the answer is “No.” Economic development on a case-by-case basis is inherently non-uniform and time consuming, problems which may be exacerbated by the respective (and perhaps competing) interests of the Corridor Partners) Moreover, even if these problems can be overcome, case-by-case development invariably requires significant, near-term (and frequently immediate) capital expenditures for infrastructure and utilities needed to deliver “site-ready” land on an accelerated schedule and without the benefit of a master plan) We believe that the Goal and Outcome can best (and perhaps can only) be achieved through: (i) the adoption by the cities and the System of objective land-use regulations approved by the Corridor Partners; (ii) the adoption by the cities and the county of uniform economic development incentives approved by the Corridor Partners; (iii) the creation by the

2011 Texas Legislature of a special district (a "District")[2] to finance needed infrastructure and utilities; and (iv) the setting of reasonably uniform utility rates.

With regard to land-use regulations, we recommend that both cities adopt zoning ordinances within their respective corporate limits or enter into Development Agreements[3] with owners of land in their respective extraterritorial jurisdictions that implement the BioCorridor master plan approved by the Corridor Partners. Both cities should also adopt compatible subdivision regulations within their respective jurisdictions. These ordinances, agreements, and regulations should be uniform and objective and be approved by the Corridor Partners. We recommend the cities retain approval authority over development within their respective jurisdictions except for the development of System land. We recommend the System retain approval authority over development of System land in accordance with the ordinances, agreements, and regulations approved by the Corridor Partners. To provide long-term development predictability, we recommend the Corridor Partners enter into an Interlocal Agreement[4] that would require unanimous approval of material amendments to such ordinances, agreements, and regulations. We further recommend that approval of such amendments by the Corridor Partners be included in the District legislation.

With regard to economic development incentives, we recommend that both cities and the county adopt uniform economic development programs approved by the Corridor Partners. Such programs should establish criteria for eligible BioProjects and define economic performance standards which, if satisfied, would entitle the eligible BioProjects to pre-approved incentives. If infrastructure and utilities are financed with the proceeds from District bonds secured by special assessments, such pre-approved

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2 The creation of a special district is not a new concept for the Corridor Partners. Legislation was drafted (but we understand never filed) for the 2007 Texas Legislature to create the "Research Valley Renovation District." See, for information purposes, the "Temple Health and Bioscience Economic Development District" created by SB 1944, 2003 Texas Legislature.

3 See Section 212.172 et. seq. of the Texas Local Government Code.

4 The authority to contract with respect to governmental functions is contained in the Interlocal Cooperation Act, Chapter 791, Texas Government Code.

incentives might include city and/or county tax abatements as an off-set to such assessments, which abatements could (if authorized by the District legislation) be more favorable than those currently authorized by state law. To provide long-term development predictability, we recommend the Corridor Partners enter into an Interlocal Agreement that would require unanimous approval of material amendments to such programs and incentives. We further recommend that approval of such amendments by the Corridor Partners be included in the District legislation.

With regard to the construction of infrastructure and utilities needed to create "site ready" land for BioProjects, we recommend the creation of a District governed by a board of directors selected by the Corridor Partners. The primary purpose of the District would be to finance the needed improvements which, upon completion, would be dedicated at no cost to the respective city in whose jurisdiction the improvements are located. Inherent in this recommendation are the assumptions that the cost of the improvements, even if phased, will be in the tens of millions, that the availability of grant funds to pay such costs is uncertain, and that it is not reasonable to expect that the Corridor Partners will be in a position to finance such costs on an ad hoc, case-by-case basis. We believe a District will be better suited to undertake the phased financing of master-planned improvements using the proceeds of long-term, tax-exempt bonds issued by the District and secured by (i) ad valorem taxes levied by the District against property within the District (if approved at an election held within the District) and/or (ii) special assessments levied by the District against property within the District. The District bonds would not be secured by the "full faith and credit" of the Corridor Partners. If the District is geographically limited to the BioCorridor, ad valorem tax revenue may be limited because of exempt property owned by the Corridor Partners; however, if the District is expanded to include a larger taxable area, political support for the creation of the District may be lacking. District bonds secured by special assessments levied by the District against property within the District (including property owned by the Corridor Partners) may be a more politically attractive alternative. Special assessments would allocate the cost of the needed improvements based solely on the benefit that would accrue to the property being assessed as determined by a written "Service and Assessment Plan" approved by the Corridor Partners and adopted by the District after public hearings; consequently, no owner within the District would be assessed more than its fair share of the costs) Special assessments, when levied, create a lien against the property being assessed, cannot be increased, and may be paid in full at any time; however, if not paid in full, they would be payable in annual installments including principal, interest, collection costs, and administrative costs.

With regard to utility rates, we recommend the Corridor Partners enter into an Interlocal Agreement establishing reasonably uniform rates within the BioCorridor, with due consideration given to the recovery by the Corridor Partners of capital investments already made in utility infrastructure)

We believe implementation of the recommendations in this Memorandum will create an opportunity to achieve RVP's Goal and Outcome for the BioCorridor by providing an efficient, competitive and level development "playing field" and a viable and equitable method to finance the infrastructure and utilities needed to create "site-ready" land. Taking advantage of this opportunity will require an unprecedented, long-term political and financial partnership among the Corridor Partners) Near-term tasks include drafting, for approval by the Corridor Partners, and adopting the above-described land use and subdivision regulations and economic development programs and incentives. Near-term tasks also include drafting, for approval by the Corridor Partners, and pre-filing (by December 2010) proposed District legislation for consideration by the 2011 Texas Legislature. Upon completion of these near-term tasks, the Corridor Partners will have placed themselves, the BioCorridor, and the State of Texas in a position to take full advantage of whatever BioProject opportunities present themselves in the foreseeable future.

Respectfully submitted:

Shupe Ventura Lindelow & Olson, PLLC