

# BioDistrict New Orleans Action Plan Update

October 2013



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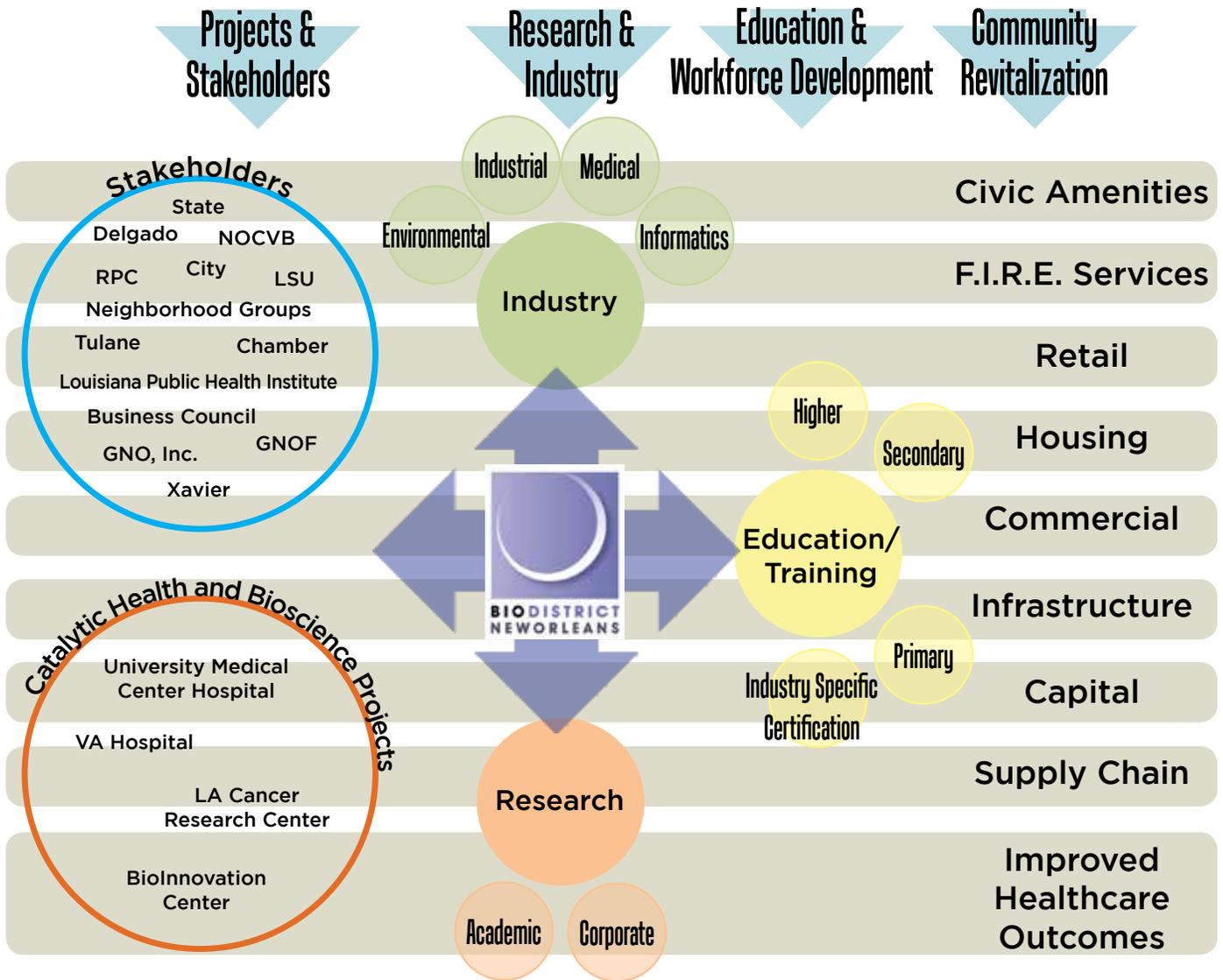
### Acknowledgements

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This report has also been developed in coordination with the entire AECOM team. The team includes: AECOM, AECOM Design + Planning, AECOM Transportation, Bright Moments, Cannon Design, CBRE, Chester Engineers, the Ehrhardt Group, ARC Enterprises, Southern Strategy Group of Louisiana and Dig Studio Inc.

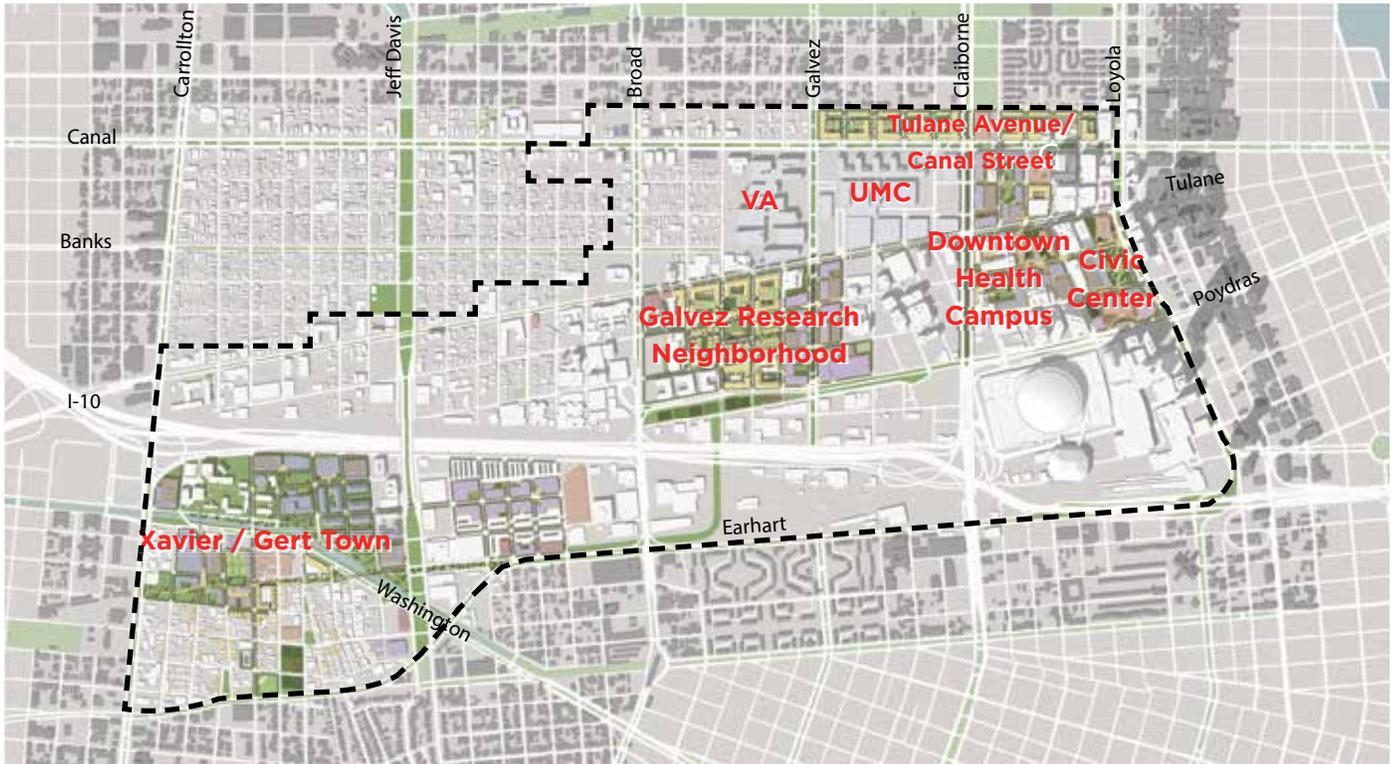
## WHAT WE DO:

A Catalyst for Connecting Jobs, Education, Economic Development and Community



# Section 01: Executive Summary





The BioDistrict encompasses approximately 1200 acres adjacent to downtown New Orleans. This Strategic Action Plan emphasizes a Key Development Area approach, concentrating development efforts into five specific areas of the District, as shown in the colored areas above.

# Executive Summary

## Introduction

For nearly 300 years, New Orleans has been identified as the “Great Urban City of the South.” **Quality of life, tradition, a rich cultural heritage** and its role as a key **gateway and transportation hub** has made New Orleans the city of choice for individuals, families and business entrepreneurs. This combination of history, culture, fine-grained neighborhood fabric, transportation access, can-do spirit and “joi de vivre” attitude uniquely positions New Orleans and the BioDistrict at the forefront of an industry and learning culture that can transform the City for the next 300 years.

The BioDistrict is poised to become the **economic catalyst** for the creation of a **whole new industry that will transform the economic prosperity of the City, State and Region**. To achieve its full potential, the BioDistrict must amplify its position as the City and region’s transformative economic development opportunity moving into the 21st century. To achieve this goal the BioDistrict Strategic Action Plan identifies key **places, systems, programs and process improvements** that are necessary for the realization of the District’s potential.

## The Vision

In 20 years BioDistrict New Orleans (the BioDistrict) will become a thriving and highly livable business, education, science and health destination, regarded throughout the City and the nation as the premier revitalized urban district of choice. The BioDistrict will be known for its walkable scale, new and historic neighborhoods, excellent schools and services, vibrant retail, accessible open space and transit, as well as a range of stable and well-paying bioscience and health industry jobs. The BioDistrict will become a national model for urban revitalization, job creation and economic and industry development.

With visionary leadership and long-term commitment, the BioDistrict can expect a host of economic benefits through the successful implementation of the Action Plan, including:

- Direct and indirect job creation  
**34,000 jobs**
- Construction jobs  
**3,600 jobs**
- Local Economic investment  
**\$3.3 billion**
- Increased local personal earnings  
**\$24 billion**
- Increased local tax revenue  
**\$1.32 billion**
- Increased state tax revenue  
**\$1.75 billion**
- New and renovated buildings  
**11.6 million SF**

## Planning Process Timeline



### Action Plan Content & Organization

This document is an update to the initial BioDistrict Plan released in 2011 and is the last in a series of interim deliverables, termed working papers. As such, the Action Plan does not reproduce the research, data and analysis contained in these previous documents, but instead summarizes the conclusions and recommendations emerging from these previous efforts. A summary of each working paper can be found in Appendix A of this document.

This strategic Action Plan is organized into five sections. **Section 01, Executive Summary**, highlights the key findings and overview recommendations derived from this strategic master planning effort. **Section 02, District-Wide Systems and Components**, identifies big-picture, framework-level enhancements and upgrades needed to support a large-scale redevelopment effort of the type proposed for the BioDistrict. **Section 03, Key Development Areas**, discusses in detail the key actions, projects and impacts of specific catalytic areas within the BioDistrict. **Section 04, Implementation Plan**, defines specific action items, who is responsible for implementing them, and the implementation time frame and potential funding sources for each of those actions. **Section 05, Appendices**, includes background information supporting the Action Plan recommendations, including detailed square footage calculations by key development area, detailed costing information and background sustainability plan principles and information.

### Prior Planning Efforts.

Since the devastating impacts of Hurricane Katrina in September 2005, the City, state and various other organizations have undertaken numerous plans that incorporate areas of the BioDistrict and these previous studies influence the direction of this strategic Action Plan. The most significant of these plans are identified on the accompanying timeline.

### Context

The BioDistrict's unique setting and location in the region will help position it for continued leadership and innovation into the 21st century. New Orleans is one of the great urban cities of the South and serves the much broader region as a cultural icon and regional gateway.

As the region's main hub of commerce, transportation and social and cultural amenities, New Orleans influences trends and patterns throughout the South. People drive and travel from throughout Louisiana and nearby states to conduct business, shop, attend performances and sporting events, visit museums and utilize New Orleans International Airport.

The state's capital, Baton Rouge, is approximately one hour away and plans for a high speed rail "Brain Train" between New Orleans and the capital would provide mutual benefit to both cities and a stronger connection to LSU and the state government. This high-speed access would also reinforce the BioDistrict's role as a gateway site for the exchange and flow of people, information and ideas in the much broader region.

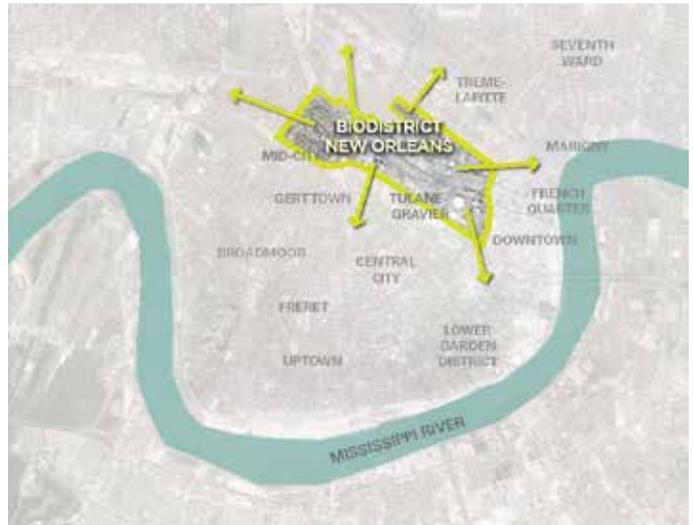
The BioDistrict is located in the heart of the New Orleans at the convergence of the Mississippi River, Lake Pontchartrain, the historic French Quarter and the core Central Business District (CBD). Today 12,700 people live in the 1200-acre BioDistrict area; this figure reflects a population very close to pre-Katrina levels, demonstrating the District's strong resilience and growth in the face of one of the region's worst-ever natural disasters.



Regional context.



State context.



City context.

## Planning Process

### Goals

The BioDistrict New Orleans Action Plan is the culmination of an 18-month long strategic planning process charged with drafting a vision and step-by-step roadmap to take the BioDistrict from idea to reality. Previously called the Greater New Orleans Bioscience Economic and Development District (GNOBEDD), the BioDistrict is slated to be a national node of science, technology and translational medicine-related education, research and commercial development in the bioscience industry.

The BioDistrict is a state-enabled agency charged with the following activities: (1) facilitating the creation of high paying jobs by assisting the biomedical institutions and employees in the district with development of bioscience facilities and programs; (2) acting to acquire and develop real estate needed to grow the academic research institutions within the District; (3) receiving public and private funds for such purpose; (4) assisting with increasing research and training dollars for institutions within the District; (5) receiving public and private funds for such purpose; (6) assisting with increasing research dollars for health related research and training; (7) increasing basic and clinical research and the health and bioscience workforce; (8) working to bridge commercialization opportunities from research developed within the District; (9) enhancing interdisciplinary biosciences; and (10) acting as a link to private sector life sciences companies in the state, all with a view toward job growth in the District.

### Public Input

The Action Plan brings together the ideas, opinions and desires of over 1000 agency, organization and individual stakeholders into a strategic urban revitalization plan that focuses on workforce education, job creation and placemaking opportunities.



The BioDistrict strategic planning process included a variety of outreach tools, including on-line surveys and public meetings to invite citizen participation from start to finish.

Included within the BioDistrict's 1200 acres are a number of existing residential neighborhoods. Public outreach with residents of these neighborhoods showed community pride and a strong desire for community revitalization. Residents were equally adamant, however, that they favored organic, grassroots renovation and restoration over any type of larger-scale redevelopment effort. Residents were particularly protective of existing vernacular architecture and community scale, and had little interest in 'new' development offering different architectural style, type or density than that which currently exists. Therefore in responding to the neighborhood groups desire the BioDistrict boundary has been modified so that Mid-City and New-City are no longer included within the BioDistrict boundary.

In alignment with these clearly stated community desires, the Action Plan makes minimal recommendations for areas adjacent to Mid-City, New City, and Gert Town neighborhoods. The Plan instead identifies large-scale, district-wide infrastructure recommendations designed to increase efficiency, safety and connectivity throughout the District, and focuses more detailed site-level planning recommendations in five key development areas. The five key areas were selected based on their proximity to existing and planned economic/educational nodes, and for their readiness for change in terms of land use, density, or overall site utilization. The five key development areas are: Galvez Research Neighborhood, Xavier/Gert Town, Tulane Avenue/Canal Street, Downtown Health Campus and Civic Center.

**Action Plan Focus**

The BioDistrict seeks to establish an integrated approach to community revitalization and economic development. This strategy focuses specifically on the four key component ‘building block’ areas of People, Industry, Process and Place that will make the BioDistrict a reality. The key actions shown in the chart below have already begun or will be a part of the BioDistrict implementation.

**People**

Create a highly desirable urban neighborhood of choice through education, employment and economic development opportunities. Development of the BioDistrict into an innovative, densely populated, vibrant mixed use district that provides a bright future for economic and social growth for New Orleans must have education as it’s base foundation at all ages and levels.

At the heart of the BioDistrict concept are people: individuals living, working and studying in the District. The BioDistrict seeks aggressive, front-end investment in this human capital by providing expanded educational and workforce training, and by ensuring close-to-home job opportunities and advancement at the back-end.

The BioDistrict is in the process of developing a biotech curriculum in conjunction with the Louisiana Department of Education that can be implemented in high schools across the New Orleans area. The development of this curriculum stems from a Memorandum of Understanding between the BioDistrict and the Department of Education, which calls for a biotechnology research and development concentration as part of the health sciences vocational curricula already established at the Education Department’s Career and Technical Education program.



The BioDistrict Action Plan uses an integrated strategy focusing on four key component areas of revitalization success: People, Industry, Process and Place.



Workforce training will be key to the success of the BioDistrict.

At the completion of the curriculum, students will have the necessary skills to gain employment as a laboratory technician or assistant in any of the nearby hospitals or research institutions. Both BioDistrict New Orleans and the Department of Education hope to have a curriculum ready to implement by the start of the 2014 school year.

BioDistrict New Orleans is a part of several other key initiatives to develop a trained workforce:

- New Orleans Regional Workforce Funders Collaborative, which consists of partners from the Greater New Orleans Foundation, the City of New Orleans, the United Way for Greater New Orleans, Urban Strategies, Ford Foundation, W.K. Kellogg Foundation and the Surdna Foundation. The grant of \$600,000 from the National Fund for Workforce Solutions will serve the Greater New Orleans Region with the purpose to better align incumbent worker training funding with emerging needs of employers in the healthcare and biosciences sectors, and to better market the availability of these funds to local employers.
- Career Pathway Committee, an ongoing and active committee whose purpose is to support and integrate the region's various employment and education initiatives in the biomedical sector. By incorporating representatives from K-12 education systems, community colleges, 4-year universities, as well as

local healthcare\biomedical employers, workforce investment boards, and economic development programs, the committee is able identify and facilitate collaborations at all levels of New Orleans' healthcare\biomedical enterprise.

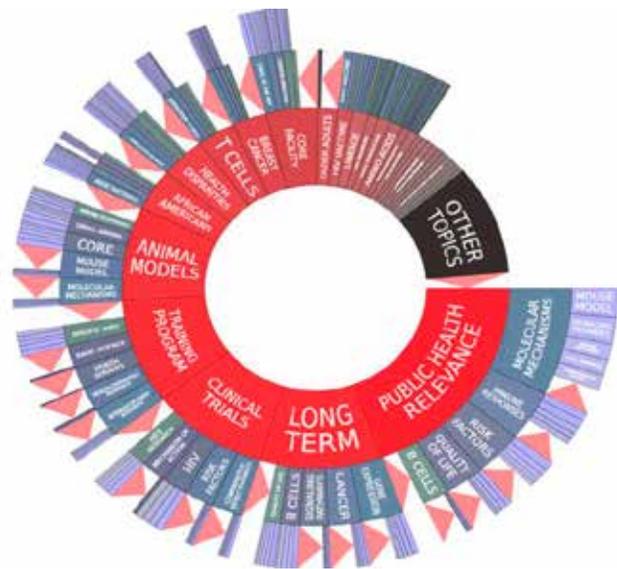
- Math and Science High School, a very important component of the industry development is to construct and operate a first class state of the art high school dedicated to the advancement of the math and science and in particular the biosciences. The BioDistrict has consulted with numerous private schools concerning their curriculum to prepare students for the knowledge economy.
- Create quality education options for BioDistrict residents and workers via childcare and early learning centers supported by the institutions.
- Renovate the Elementary school in the Gert Town neighborhood.
- Develop employee training and internship programs.
- Target market continuing education programs and GED's to local neighborhood residents.
- Work closely with all institutions to develop a knowledge transfer and commercialization program.
- Promote Public Private Partnerships (PPP's that connects the Galvez Research Neighborhood to the Downtown Health Campus and the other institutional facilities.
- Leverage NOBIC into the incubator space for new businesses within the BioDistrict.

In addition, BioDistrict New Orleans has participated in the following employment-oriented initiatives and efforts:

- Regional Healthcare Workforce Study
- Healthcare Provider Development Initiatives: collaboration with HURSA, LSU's Community

and Minority Health Education Department, and Congressman Cao's office

- Healthcare Specific Job Fair: collaboration with Region One Workforce Investment Board Partnership - Collaboration with Job 1 New Orleans (141 workers placed)
- New Orleans Workforce Development Round Table
- Health information Management Systems Society (HIMSS) providing career training in the HealthIT industry.



Major Areas and Sub-areas of Research Funding in Greater Birmingham, AL.

The BioDistrict has worked with local agencies and organizations to promote the following community development initiatives:

- Community Benefit Agreements
  - o Sen. Karen Carter-Peterson passed CBA Resolution for BioDistrict
  - o CBA Round Table
  - o Incubator
  - o Minority Contract Assistance
- Grants
  - o Sustainable Cities Grant (\$2 Mil)

**Industry Background**

The BioDistrict is a unique, once in a lifetime opportunity for New Orleans' academic medical centers and educational institutions to come together to create a bioscience cluster capable of generating more impact than could be achieved by any single organization acting alone. The BioDistrict will provide a host of benefits for research and medical care in New Orleans, creating educational and employment opportunities for students, trainees and residents, while fostering economic development within the City, the Region and the State.

The BioDistrict as a science and technology-driven revitalization plan will capitalize on the advantageous intersection of the following local, regional and national assets and trends:

- The biotechnology revolution is the most important development in the history of medical research and has given rise to a thriving industry.

- National examples show that research collaborations cutting across disciplines and educational institutions are fueling the development of biotechnology clusters, translational research facilities, and new centers that qualify for NIH funding requiring multi-institutional participation.
- New Orleans is rich in the academic and institutional assets necessary to seed a biotechnology cluster, including an impressive array of academic and teaching universities, academic health centers, medical providers, and research institutes investigating different but complementary problems in medical research.
- Decisions as to how the New Orleans academic community will participate in such an effort will need to be made by grassroots scientist/physicians, and by the leaders of their institutions. Infectious Disease, HIV, Cancer, and vaccine research is locally strong and presents a number of opportunities, many of which relate to diseases or injuries of national as well as local interest.

- The potential for establishing pharmaceutical and generic drug development facilities, may additionally further enhance these projections.

### Success Factors

Research of other biotech and biomedical clusters has shown that the formation and flourishing of a biotechnology cluster in New Orleans must be rooted in a dynamic environment of learning and engaging, which includes at there core:

- There needs to be a physically connected, planned community integrating education, healthcare and research with retail, housing, public transit and a new K-through-12 school
- The creation of a critical mass of loosely connected organizations and independent companies in a defined geographical region so in-person, network interaction can happen easily.
- The creation of a social network communication leveraged through academic institutions or trade association organizations that builds an entrepreneurial system nurturing start-ups, promoting knowledge-sharing and supporting social learning.
- Constant inflows of talent from outside New Orleans, which complements and supplements local knowledge and practices.

These factors will foster an individual's learning processes by facilitating the formation of communities for learning, attracting individuals to participate in the activities, and promote the interaction between members. The success of the BioDistrict in New Orleans is dependent on these proven factors in order to create, cultivate and circulate local knowledge, while incorporating practices and knowledge transfer from the other more established communities.

Over time, these factors help to build strong interconnections and help to attract larger, established companies to the area. As more and more entrepreneurial entities bring desired human talent to a region from the outside, a transformation into an effective ecosystem with a critical mass takes place.

### Areas of Expertise

To understand how to build a successful bioscience cluster in New Orleans, it is imperative to understand the research and academic strengths within the local research community. We will start with the premise that peer-reviewed federal grant funding is the largest source of monies available for basic and translational research, and is therefore, a very good indicator of the strength of academic research.

Productive research groups could be found in New Orleans before Hurricane Katrina. The storm was a major natural disaster significantly affecting local research as many prominent researchers moved away, never to return. However, since 2008 the federal research funding five years post-Katrina is back to, if not better than, levels pre-Katrina. This implies that research within the New Orleans area is productive again, albeit with a different group of researchers. In addition, there are the potential star researchers in the system who can help foster an entrepreneurial environment by creating innovative bioscience companies. The majority of the total funding received is attributable to Tulane, LSU, and Xavier all located within the boundary of the BioDistrict.

### 5 year Post Katrina Research & Funding (2008 -2012)

Fiscal Year	Projects	Total Funding
2008	244	\$120,846,298
2009	316	\$125,796,126
2010	291	\$148,317,402
2011	256	\$133,932,101
2012	260	\$129,918,811
<b>Total</b>	<b>1367</b>	<b>\$658,810,700</b>
<b>Average</b>	<b>273.4</b>	<b>\$131,762,140</b>
2000-2004 Totals	245	\$488,807,462

In particular, Tulane University and LSU Health Science Center have done a remarkable job trying to recoup the losses from the storm. With the closure of Charity Hospital, it was harder to recruit quality clinicians and researchers back to the community. The comeback of these institutions shows the resilience of the administrators and the supporters of these institutions. Therefore, with opening of the new VA and UMC in 2015-2016 there will even further expanded capability to attract additional talent and researchers in the years ahead.

Within New Orleans, the relevant areas where these NIH funds are allocated show the greatest concentration of interest for local researchers is on issues related to public health relevance, core facilities and long-term research. While this is necessary and promising, additional efforts on the development of either new technology licensing opportunities or the development of a localized bioscience industry is critical. This will be required so that there is long term commercial value creation through spin out technologies and licensing arrangements to small or large companies that does not currently exist.

Significant funding appears to be targeted toward infectious disease, mostly associated with HIV infection and immunity related to such immune-compromised diseases. According to the Center for Disease Control, the New Orleans area and southeast Louisiana have the highest incidence and prevalence of HIV and sexually transmitted diseases in the U.S. Focusing on this is valuable locally but might not be of interest to large biopharmaceutical companies licensing or buying products in these areas. There is quite a bit of research on animal models as well, which helps various translational projects.

Promising in-roads have been made in cancer. Louisiana ranks highest nationally in deaths from chronic diseases, with lifestyle being a major contributing factor. For example, the state has the fourth-highest age-adjusted mortality for cardiovascular disease, and cancer rates are above the national average. Louisiana recognizes that it needs to give a high priority to addressing cancer in the



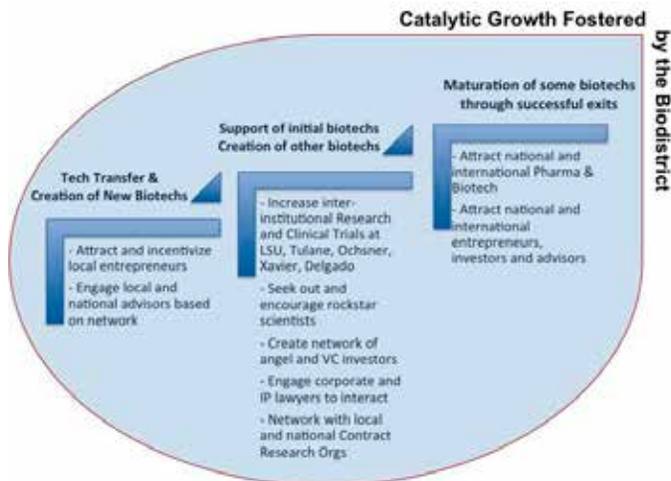
The proximity of Tulane, LSU, Xavier, Delgado, VA, and UMC will attract new and experienced talent to the BioDistrict.

state and LCRC located within the BioDistrict plays a key role in these efforts.

Another issue that needs to be addressed is that even though the region has a large number of researchers, most of the projects funded tend to be smaller. Most of the funding for these projects is between \$250,000 and \$600,000; only approximately 16 of them have above \$1 million of federal funding. Academic leaders should focus on increasing these amounts of funding by either encouraging their researchers to apply for larger project grants through collaborations or trying to provide support for researchers to bring in more projects by applying for more grants.

### Recommendations

The success of the BioDistrict as a Hub of Health Innovation and Commercialization will depend heavily on the extent of transferable knowledge, spatial proximity, and the frequency of personal contacts and the strength of social networks. Presently, New Orleans does not have a traditional biopharmaceutical industry network. Instead, a large of portion of competent management with knowledge in regulatory process, manufacturing and commercial activity, such as marketing, sales and distribution, has to be attracted from the outside. To create successful bio-pharma companies, most of the knowledge and practices will have to come from outside



#### Stepping Stone to Build a Viable New Orleans Bioscience Cluster

because local bioscience startup companies will need to recruit seasoned entrepreneurs from established clusters into the BioDistrict. This experienced management base can then assist in the maturation of start-ups toward successful partnerships or sale of companies to large pharma. The creation of value and wealth in the region will attract more seasoned management teams to relocate to the area to work at other start-ups, teaming up with scientists to launch companies, guide them through their development and take them through to IPO or acquisition.

In principle, the success of any cluster depends on basic research and technology available at local universities that can be translated into commercial products in the future. To advance research and technologies that have commercial value, academic institutions should focus their research in areas that have increased public and private interest in the foreseeable future, including stem cell research, oncology, diabetes, respiratory diseases, neurology and cardiovascular diseases. Furthermore, institutions should actively link academic research with private partnerships – for example, looking at the main funding areas in New Orleans, local academic groups working on infectious disease, Alzheimer’s and animal models should find partners in industry who have similar interests and then use these connections to create a larger network of institutions for academic researchers from local universities and hospitals who can apply together for larger federal grants such as program project grants which are usually \$10 million or more over five

years. Lastly, academic leaders of local institutions should create an active dialogue to identify resource needs within the community and pool resources to focus on key strategic hires that would benefit the entire region. The following are recommendations that the BioDistrict can consider based on financial and other resources available.

To start developing the industry for biomedical entrepreneurial start-ups, a host of service providers need to be present and available in both formal and informal networking. That includes corporate and IP lawyers, angel and VC investors, HR and regulatory consultants, toxicology and manufacturing contract research organizations, large pharmaceutical interest and others. The BioDistrict plan identifies NOBIC and the potential re-use of an historic 3 story warehouse building on Gravier Street in the Galvez Research Neighborhood as just such facilities that can foster this industry and research institution networking. In an emerging hub like the BioDistrict, some of these providers are already present and will have to start playing a larger role and foster synergies between these companies. Most importantly, these must be support given to the BioDistrict leadership by government, business, civic, philanthropic and academic centers to move the initiative forward.

The BioDistrict New Orleans is a compact, spatially defined area that is ideal for building an effective cluster. The following recommendations would not require financial resources and critical support from the BioDistrict. Other clusters have used similar key factors to become successful, and the BioDistrict can use these 28 to orchestrate active involvement with all parties in the New Orleans area to emulate other successful clusters. Therefore the BioDistrict should:

- Provide a venue for monthly meetings to bring together various stakeholders and create an active network of local business leaders, top academic officials key academic rock-star scientists, technology transfer, lawyers and investors

- Create a platform for top rock-star scientists in the local leading institutions to showcase their current and preliminary ideas and share them within a closed research network. This gives other researchers an idea of technologies that might be maturing and opens avenues for research partnerships. It also is a platforms for new and serial entrepreneurs to connect with local rock-star researchers and consider commercializing these budding technologies; and,
- Use its connections to reach out to large pharma/big biotech companies, partner with national and international academic institutions and provide information on local research and potential technologies.



The BioDistrict is currently involved in several business recruitment and outreach events.

- Establish a \$1 million fund to create a pool of 10 translational one-year grants averaging \$75,000 to be granted to promising local scientists and to avoid bias these grants would be only be selected by a panel of researchers from local universities. If these grants generate encouraging data, the researcher could be assisted to apply for federal SBIR/STTR grants to commercialize the product
- Assist local technology transfer offices with support of \$250,000 to expand operations and spend more time working with their researchers
- Raise the funds for key recruitment for local universities of three promising up and coming junior faculty researchers who have shown a great deal of promise at a larger institution elsewhere with a \$2 million of start-up package. That funding would provide each of these three researchers approximately two years of support to establish a solid research base. The BioDistrict should allocate 50% funds, with the academic center providing the other matching 50%.

#### Outreach to Date

The BioDistrict has also participated in the following business recruitment and outreach events:

- Meet the Industries Series
  - o Jackson Laboratories
  - o AMRI
  - o Working Buildings Companies
  - o Urban Tree Nursery (RPM)
- BioSummit (Winter 2011)
- Allied Health Shares Campus Symposium (Spring 2011)
- Association of University Research Parks 25th International Convention (Fall 2011)
- Biotech Luncheons in 2010, 2011, 2012
- A statewide Academic Industry Workshop at Xavier University - March 2012
- Quartley Science and Technology Meetings
- Monthly Newsletter
- BioBreakfast Club Series - 6 meetings per year
- Hosted Big Data webinar



Strategic planning must look to create a vital public realm, with places to relax and recreate outside the home.

## Process

The BioDistrict strategic planning effort identified the need for improved processes and procedures at many levels and between multiple organizations and agencies. Key areas requiring immediate attention include the following:

- Stronger engagement with the local business community and organizations such as GNO, Inc., the DDD, Business Alliance, the Chamber and the Business Council.
- Continued and increased support from local and national foundations to continue the funding of the BioDistrict mission.
- Stronger coordination and collaboration with the City of New Orleans, the Mayor's Office and Neighborhood Planning and Economic Development Department.
- Stronger representation by community members on the BioDistrict Board of Directors.
- Continued rigor and follow-through on converting blighted properties within the BioDistrict to positive contributing structures through the City's BlightSTAT program.
- Ensure the City's new Comprehensive Zoning Ordinance (CZO) supports the overall goals and vision of the BioDistrict.
- Ensure that the new CZO provides for an appropriate stepping down of zoning adjacent to the surrounding existing neighborhoods.

## Place

BioDistrict planning also places high priority on the public realm: anywhere that residents, workers and visitors circulate, recreate and use on a daily basis. The Action Plan contains recommendations regarding both functional and aesthetic improvements to the District's utilities, roadways, streetscape, and public open spaces. The Plan emphasizes bringing all areas of the District to a minimum existing standard, such as ensuring a complete system of sidewalks of adequate width and universal accessibility, then considers design tools and enhancement to create a legible, intuitive and aesthetically pleasing environment that assists with orientation and wayfinding. The BioDistrict also emphasizes preservation and enhancement of existing neighborhood character, and stresses the importance of human-scaled design in all parts of the built environment, both horizontal and vertical.

Specific areas of public improvements must include:

- Tulane Avenue streetscape improvements. These enhancement should focus on creating internal connection within the BioDistrict, and external connections linking the BioDistrict to the CBD and adjacent neighborhoods.
- A working tree nursery to supply locally grown plant material, education and jobs training opportunities for the BioDistrict and the broader downtown area. The nursery will supply trees for both the BioDistrict and for a larger, major urban reforestation program called for by this Strategic Action Plan.
- Open space bike and pedestrian trail connections between the Gert Town/Xavier University neighborhood and the core of the BioDistrict (uptown of I-10).
- Preservation of historic structures for adaptive reuse.
- Removal of the Claiborne Avenue viaduct.
- Revitalization of Charity Hospital and the surrounding properties.

- Integration of the New UMC and VA hospitals into the urban fabric from a transportation, landuse, and economic development perspective.

### District-Wide Systems & Components Energizing the BioDistrict Core

With the \$3 Billion dollar investment in the new UMC, VA Hospital and other institutional facilities a critical mass of new jobs and businesses will be created at the centroid of the BioDistrict. In order to leverage and harness this new investment and concentration of people the transit and pedestrian experiences must be enhanced. A vibrant BioDistrict that is immediately adjacent and connected to Downtown is critical to the overall success of both Downtown and The BioDistrict.

#### Land Use and Policy

The BioDistrict Action Plan aligns, in most cases, with the City of New Orleans' revised land use maps, which serve as the basis for the City's currently in-process zoning code overhaul, the new Comprehensive Zoning Ordinance, or CZO, which was not yet available for public review at the time of this document. In the areas where the zoning it is not in alignment, private development parties other than the BioDistrict will initiate the revision when and if they ever desire to do so.

#### Live Where you Work, Work where you Live

Provide a multitude of housing options, including affordable, rental, for sale starter and move up products within the BioDistrict that are in close proximity to the new medical and institutional facilities. These Universities and Medical Institutions are key employment generators and clearly the national and global trend indicates that younger people want to live in cities and not suburbs. The convergence of these two demographic factors is one of the clear advantages that the BioDistrict offers which must be capitalized on for urban revitalization and economic development.

#### Key Actions:

- Develop over 2000 new housing units within the BioDistrict by 2032. Of these new units provide



Sustainability emphasizes options: in transportation, in types of housing, in economic opportunity.

an equal range of affordable, rental, starter, move up and senior housing options to address the full range of demographic and economic needs.

- Provide safe and efficient transit, street, bike and pedestrian connections into the BioDistrict from the surrounding neighborhoods and recently built 4000 housing units that surround the BioDistrict.
- Continue to support the existing historic fabric of housing Gert Town, Mid City and New City Neighborhoods.
- Work with the City to prioritize the improvement of blighted properties within the BioDistrict as viable new housing options.

#### Embrace the Outdoors

New Orleans provides a temperate enjoyable climate for a vast majority of the year. Although heat and large storms can be disruptive at times, overall the climate is an advantage to attract and retain residents, visitors and employers. In order to fully take advantage of this desirable climate the BioDistrict must provide neighborhood and regional serving outdoor amenity spaces and places. Connecting neighborhoods physically can be done with a series of Blue/Green amenities such as Boulevards, urban parks, bike and open space trails, neighborhood and larger regional parks and gathering spaces such as Duncan Plaza and Champions Square. Blue infers the need for these open areas to not only provide space for event and recreational activities but

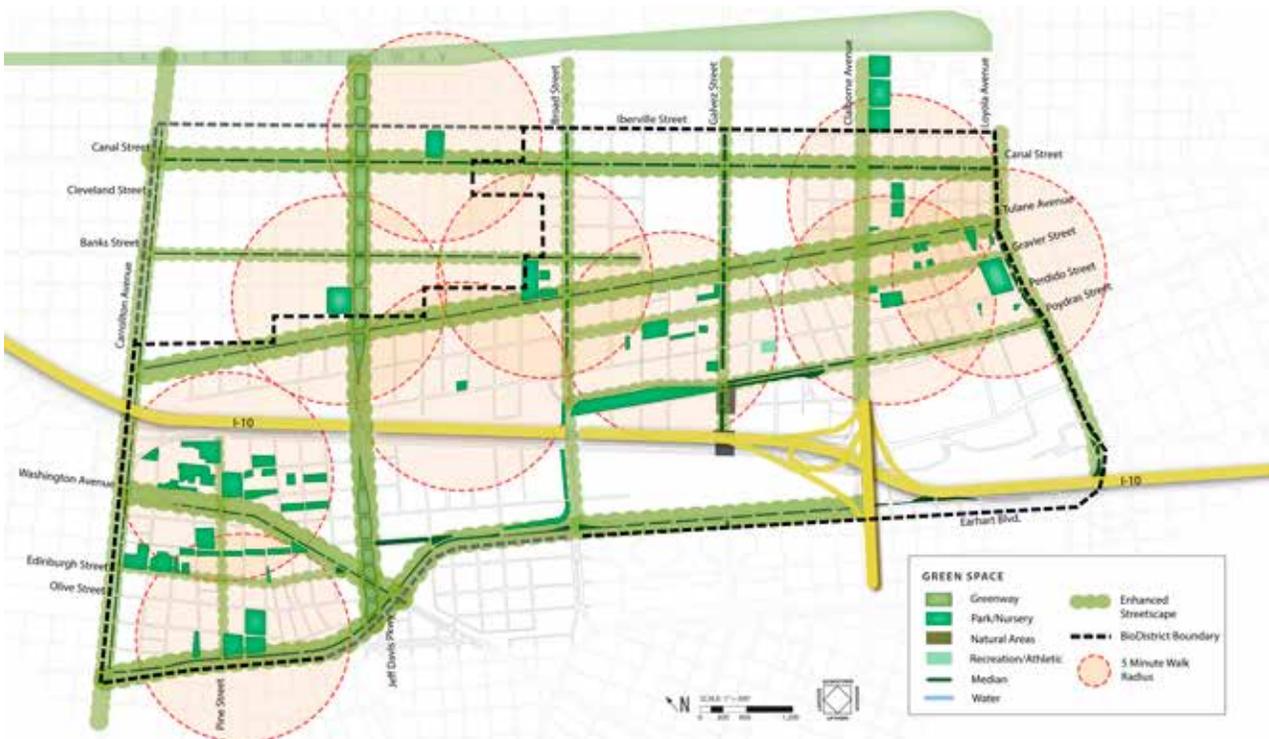
also to be areas needed to manage the detention of large amounts of storm water during precipitation events. Green implies the opportunity for these amenity spaces to be gathering points for community activities such as holiday events, festivals, and recreational activities and softer surfaces to help reduce urban heat island impacts. Together a connected network of open spaces provides not only functional and sustainability advantages, but also quality of life amenities and real estate value enhancers.

#### Key Actions:

- Implement a series of Blue/Green Boulevards that connect to Lafitte Greenway to the north.
- Develop an Urban Storm Water Park that serves as a major detention area for the entire BioDistrict and becomes a living demonstration model for urban storm water management 'best practices' as well as larger recreational amenity attraction.
- As part of the Urban Storm Water Park develop an "Urban Nursery" that can become an educational, economic and sustainability asset

for the BioDistrict and all of Downtown. Partner with Tulane and Delgado to provide research and training opportunities and with private sector vendors to provide economic development opportunities for the commercial operations of a nursery to provide locally available material.

- As part of the new CZO ensure street tree planting requirements and open space contributions are required by new private development.
- Work with the City to host events that promote walking, biking tours and outdoor family activities.
- Work with the City to increase neighborhood youth sport leagues, programs and activities.
- Sponsor an international design competition for the renovation and reactivation of Duncan Park to become the new iconic public gathering space for the entire city.
- Look for joint programming and event opportunities that could connect Duncan Park and Champions Square.



Green Space: the Action Plan focuses on creating new open space within areas of increased density.

### Walkability

Make every street within the BioDistrict and Downtown, safe comfortable and attractive for pedestrians.

Walkability is a key ingredient to a successful urban environment. People walking on the streets enhances public safety, fosters more personal interactions and increases economic vitality. New Orleans history as truly livable and walkable city stemming from the origins of the 'French Quarter needs to emanate out further into the Downtown core and BioDistrict.

#### Key Actions:

- Designate the BioDistrict as a pedestrian priority zone which incorporates universal access standards, 'complete street' policies which ensures safe and convenient access for all types of transportation modes, and prioritize capital investment in key public rights of way.
- Require ground floor active uses throughout the BioDistrict
- Implement the comprehensive streetscape plan and funding strategy for the key streets identified in the Implementation section of this Action Plan.
- Require surface parking lots to be screened at the ground level via plantings or decorative low screen fencing.
- Enhance pedestrian crossings through the use of bulb outs and mid block crossings.
- Extend connections along the north south "Blue/Green" streets that connect pedestrians, bikes, water, open space and commerce to the north to Lafitte Greenway and south to new adjacent housing and institutional projects
- Create and maintain a comprehensive wayfinding system throughout Downtown and the BioDistrict for pedestrians, bicyclists, transit users and visitors.

### Green Space

The BioDistrict's suffers not from lack of open space, but from a lack of maintenance of existing open space. Neighborhood input generally rejected the idea of adding more parks, and asked instead that the Plan find a way to maintain the park space they already have. The Action Plan recommends that the BioDistrict work with the City

to establish a maintenance plan and that new parks and open spaces, required as part of new development and increased densities, include maintenance responsibilities as a condition of their approval. The Plan does recommend the creation of new green spaces, in relation and proportion to density increases. All new park spaces should be designed and scaled for neighborhood use and the proximity and connections to regional recreational resources such as the Lafitte Greenway and Louis Armstrong Park should be enhanced via the Blue/Green Boulevards. The urban Nursery and Storm Water Park should also be connected to the overall Greenspace network.

### A Sustainable District

The BioDistrict shall become the country's leading sustainability model for water management and conservation, energy usage, building design, economic revitalization and social programs. Global and National trends are increasingly important to attract and educate the next generations of thought leaders. New Orleans with its rich history, strong energy base, compact city form, and strong collection of educational and institutional facilities is ideally situated to leverage this sustainability opportunity for long term educational and economic benefit.

The BioDistrict focuses not just on 'traditional' sustainability, in terms of environmental considerations, but also emphasizes social and economic sustainability.



The Action Plan recommends working with the City for better maintenance of existing neighborhood Green Spaces.

The District's four leading sustainability concerns, as identified in the stakeholder outreach process, include preservation of historic neighborhood character (social), improved quality of life through creation of jobs (economic), enhanced transportation options (economic) and water management (environmental).

The Action Plan addresses each of these areas, and identifies specific elements necessary to long-term sustainability in each area. Recommendations focus on an integrated approach to sustainability in which environmental, social and economic sustainability are considered at the earliest planning stages and incorporated into project design and construction, rather than an 'add-on' approach which risks falling by the wayside as development costs add up.

#### Key Actions:

- Work with the City to ensure specific sustainability goals are embodied in the new CZO for the BioDistrict Area.
- Establish Sustainability Design Guidelines specifically for new buildings and projects within the BioDistrict that addresses: Urban Storm Water Management, Urban Forestry and Heat Island Reduction, District wide energy sharing systems like Chilled Water and Alternative Energy Sources, specific Building Energy Sustainability requirements, LED and Solar powered public amenities such as street lights, traffic lights, public buildings, etc.



Sustainability Design Guidelines will address Urban Storm Water Management practices.

- Help organize the space and advertizing for Community Gardens and local Farmers Markets within the neighborhoods.
- Implement a Bike Share program within the BioDistrict.
- Provide incentives for utilizing public and alternative means of transportation.
- Offer incentives for retrofit existing buildings to new energy standards.
- Recruit companies to the BioInnovation Center that focus on the crossover between sustainability tools and products and health and medical products.

#### Circulation

Improve multi-modal means of transportation to reduce dependence on the private automobile both within the BioDistrict and those that commute to and from it on a daily basis. Today's next generation of city dwellers are becoming less and less dependent upon owning a car for health, economic and cost reasons. Urban centers that offer efficient and safe alternative modes of transportation will be at a clear advantage in attracting the workforce of tomorrow.

#### Key Actions:

- Continue to recognize the importance of Union Station as a Multi-modal hub for both downtown and the BioDistrict as the key connector of the Brain Train to Baton Rouge, and the Loyola Street Car.
- Work with RTA to improve frequency and reliability of the public transit system
- Locate a secondary intermodal connection at the intersection of Canal and Oaks street
- Explore the opportunity to provide a free fare zone for the Tulane Circulator
- Introduce car sharing services such as We Car, Zipcar, Flex Car, etc within Downtown and the BioDistrict. Provide bonus density or expedited approval process reviews for projects that incorporate car sharing alternatives.
- Consolidate individual institutional circulators

into one high frequency system that connects Xavier to the Allied Health Campus with stops at UMC, VA, LSU and Tulane facilities along the way.

- Establish a community sponsored ‘bike share’ program and facilities that can serve as a viable transit option.
- Provide a well-marked and adequately striped bicycle network that connects throughout the BioDistrict and Downtown.
- Provide ample bike parking and support facilities
- Provide a continuous bikeway connector along the old RR ROW and street segments between Xavier and the Galvez Research Neighborhood.
- Provide a wayfinding system that identifies the connections between Downtown and the BioDistrict and the areas around UMC and the new VA, the Civic Center Core, and the Allied Health Campus.

The Plan recommends that BioDistrict infrastructure be designed to serve the community first, and the region second. This new approach to circulation, scaled for humans rather than vehicles, promotes reduced lane widths, lower travel speeds, and enhanced pedestrian and bicycle amenities.

The Plan details new roadway cross-sections including on-street bike lanes, widened sidewalks and ADA-compliant design. Recommendations focus on creating an unbroken system of sidewalks on every street—now lacking in large tracts throughout the district—and a grid of dedicated bicycle facilities spaced at a half mile in each direction.

The Plan also recommends enhancements to the existing transit system, including new streetcar lines and a rubber-tired District circulator loop, to increase connectivity within and to the BioDistrict.

Key infrastructure investment projects include: Tulane Avenue, Washington Avenue streetcar, and Claiborne Avenue viaduct removal and streetscape enhancement.



Vehicle sharing programs grant alternatives to owning a car in the urban core.

### Manage the Car

Don't overplan or overbuild facilities solely to accommodate car parking and fast moving traffic. Keep efficient and well-marked parking facilities in balance with all modes of transportation. With numerous large footprint institutional projects with such a close proximity of one another, there is an immense opportunity to share the cost, environmental impact and aesthetic implications of major parking facilities. Ease of finding parking is also a key determinant of repeat business and perceptions for businesses and facilities with the BioDistrict.

#### Key Actions:

- Prepare a district wide parking management plan that will identify opportunities for shared parking.
- Develop a real time parking information and wayfinding system that identifies parking availability and clear way finding locations.
- Establish financing mechanisms to reinvest in proceeds into the overall parking and District improvements.
- Support the City CZO language on parking caps for new projects within the District.

### Create Great Streets

Provide a series of Great Streets that define and inter-connect the BioDistrict with Downtown and the surrounding neighborhoods. Great Cities are defined by Great Streets that are memorable, interesting and define a clear and logical way to get around by transit, bike, autos and pedestrians. Great Streets also help raise economic vitality and property values by providing desirable and memorable places where people want to live, work and shop.

#### Key Actions:

- Work with the City and RPC to identify a clear definition and hierarchy of Complete Streets, Blue/Green Boulevards, and Residential Streets.
- Continue to focus on securing funding for these street improvement projects.
- Follow the Implementation Schedule per this Action Plan for these key streets.
- Extend Poydras Street which is Downtown’s main street into the BioDistrict.
- Support the RPC in the development of Tulane street as a Complete Street.
- Support improvements or removal of the Claiborne Viaduct into a Blue Green Boulevard.

### Utilities

Utility function can be measured in two metrics: capacity, and condition. While a comprehensive evaluation of utility condition is outside the scope of the Action Plan, project analysis determined that the majority of the District’s utilities have adequate capacity to accommodate additional development and increased density; the condition of existing infrastructure has not been formally evaluated, but is anecdotally expected to require significant upgrade and replacement. The Action Plan recommends a comprehensive evaluation of utility conditions as a critical first step in moving the BioDistrict forward. Additionally accessing and connecting to the dark fiber network connected to the 100 gigabyte connection at 1515 Poydras Street is critical, as well as adding a new HIPAA compliant encrypted WIFI system throughout the District.

The exception in the utility capacity assessment is telecommunications, which are likely to require upgrade to provide the speed of service and data-moving capacity required by an increased residential population and a heavy focus on technology-oriented businesses.



## Key Development Areas

The BioDistrict focuses on five key development and revitalization nodes distributed throughout the District’s 1200 acres. Each key area is slated to fill a unique niche within the New Orleans context while building on and enhancing existing land uses and character.

In total, the proposed BioDistrict master plan contains over 2000 new housing units and almost 11.6 million Sq. Ft. of new and renovated development including the new VA Hospital and Phase I of the UMC. Additional office, retail and residential space will come on line through adaptive re-use of existing structures, as well as organic renovation and new construction within the District’s stable residential neighborhoods. Major commercial, retail and multi-unit residential development will be developer-driven, responding to general market demand or to the specifications of a particular anchor tenant or user.



Key Development Areas focus on the BioDistrict’s target industries and potential catalytic projects, while allowing existing residential neighborhoods to revitalize and redevelop organically. The five key areas are as follows:

- A: Galvez Research Neighborhood
- B: Xavier/Gert Town
- C: Tulane Avenue/Canal Street
- D: Downtown Health Campus
- E: Civic Center

Key	Key Development Area	Land Use, SF							
		Hospital, SF	Acad, SF	Res, DU	Ret, SF	R&D, SF	Ofc, SF	Lt Ind, SF	Civic, SF
A	Galvez Research Neighborhood	3,598,000	722,000	1,057	65,000	750,000	100,000	0	0
Key Elements	<i>Residential Mixed-Use R &amp; D / Incubator Space Stormwater Park / Nursery</i>								
B	Xavier / Gert Town	0	978,000	115	25,000	0	0	750,000	0
Key Elements	<i>Community Infill Shared Institutional/Neighborhood Resources Light Industrial</i>								
C	Tulane Avenue / Canal Street	0	1,100,000	853	115,000	0	0	0	0
Key Elements	<i>Math and Science High School Academic Expansion Residential Mixed-Use</i>								
D	Downtown Health Campus	0	855,000	0	5,000	0	0	0	0
Key Elements	<i>Academic Expansion Multi-Institutional Shared Services Renovated Charity Hospital</i>								
E	Civic Center	0	60,000	0	10,000	0	0	0	392,500
Key Elements	<i>New City Hall and Municipal Courts Renovated Park and Festival Street Museum / Cultural Facility Sites</i>								
<b>Development Totals</b>		<b>3,598,000</b>	<b>3,715,000</b>	<b>2,025</b>	<b>220,000</b>	<b>750,000</b>	<b>100,000</b>	<b>750,000</b>	<b>392,500</b>



Galvez Research Neighborhood, plan view.



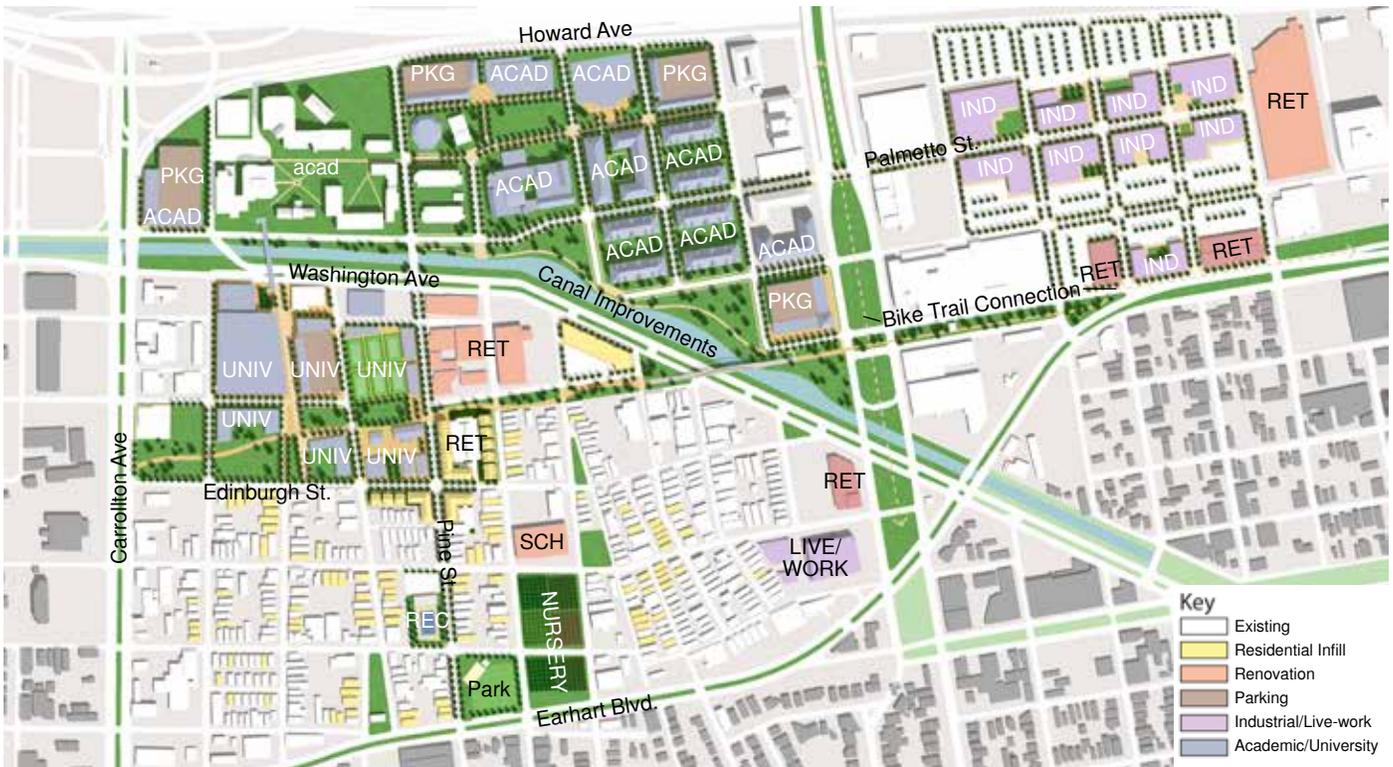
Galvez Research Neighborhood, street-level view looking along the Galvez Street R&D office and laboratory corridor.

### Galvez Research Neighborhood

- R&D offices, labs
- Grocery & neighborhood retail
- Neighborhood Urban Park
- Full Spectrum of Residential Options
- Urban Nursery & Stormwater Park
- Innovation Place

### Galvez Research Neighborhood

This development area represents a valuable addition to New Orleans’ spectrum of urban neighborhoods—with places to shop, live and work—and is expected to supply the level of amenities and housing choice demanded by those working in the adjacent Veterans’ Administration (VA) and University Medical Center (UMC) complexes, as well as in the new R&D businesses the District hopes to attract. Located lakeside of Claiborne Avenue, this new revitalization node will use Tulane Avenue and Galvez Street as its primary retail and public/private biotech research corridor, with an interior core of low- and medium-density residential development clustered around a new neighborhood park. An “Innovation Place” where both academics and private sector researchers can come together in a collaborative community setting is planned for the historic High School structure at the corner of Gravier and Miro. In addition the Urban Nursery and Stormwater Park provide educational and recreational amenities. The largest challenge for this development node is anticipated to be parcel assembly due to the neighborhood’s large number of small, narrow lots.



Xavier/Gert Town, plan view.

### Xavier/Gert Town

The southwestern portion of the BioDistrict, occupied by Xavier University and the historic Gert Town neighborhood, suffers from a series of physical disconnects. This focus area seeks to promote a mutually beneficial relationship between the community and the institution, and to mitigate the isolating effects of the area’s roadway infrastructure. The Action Plan underlines the need for a constructive dialogue between the area’s two main interests, in order to accommodate Xavier’s physical expansion needs while also working toward revitalization of this historic neighborhood, including rebuilding and reopening a community pool, park and elementary school.

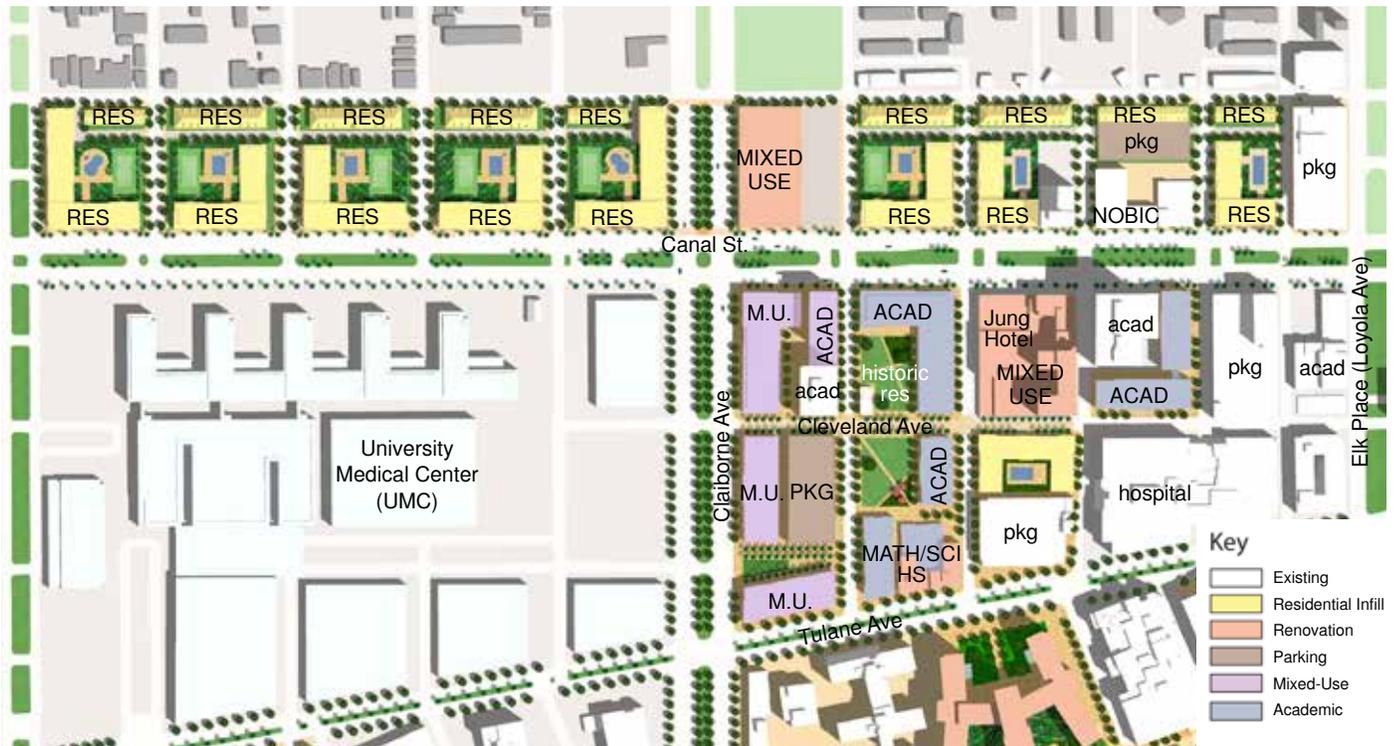
In order to reconnect Xavier and Gert Town with the rest of the District, the Plan recommends the creation of a linear green space to serve as both amenity and bike/ped connection. For vehicular connection, the Action Plan recommends both an internal District circulator and a new streetcar line on Washington Avenue.



Xavier/Gert Town, street-level view on the uptown side of the Washington Avenue canal.

### Xavier/Gert Town

- Compact, contiguous University expansion
- Reopened Neighborhood School, Pool & Park
- Single and Multi-family Infill Residential
- Container Nursery
- Shared University/Community Artists’ Spaces
- Incubator/Accelerator/Light Industrial
- Greenway Bike Connection to Galvez Research Neighborhood



Tulane Avenue/Canal Street development, plan view.



Canal Street, looking riverside, with enhanced streetscape and mixed-use residential infill.

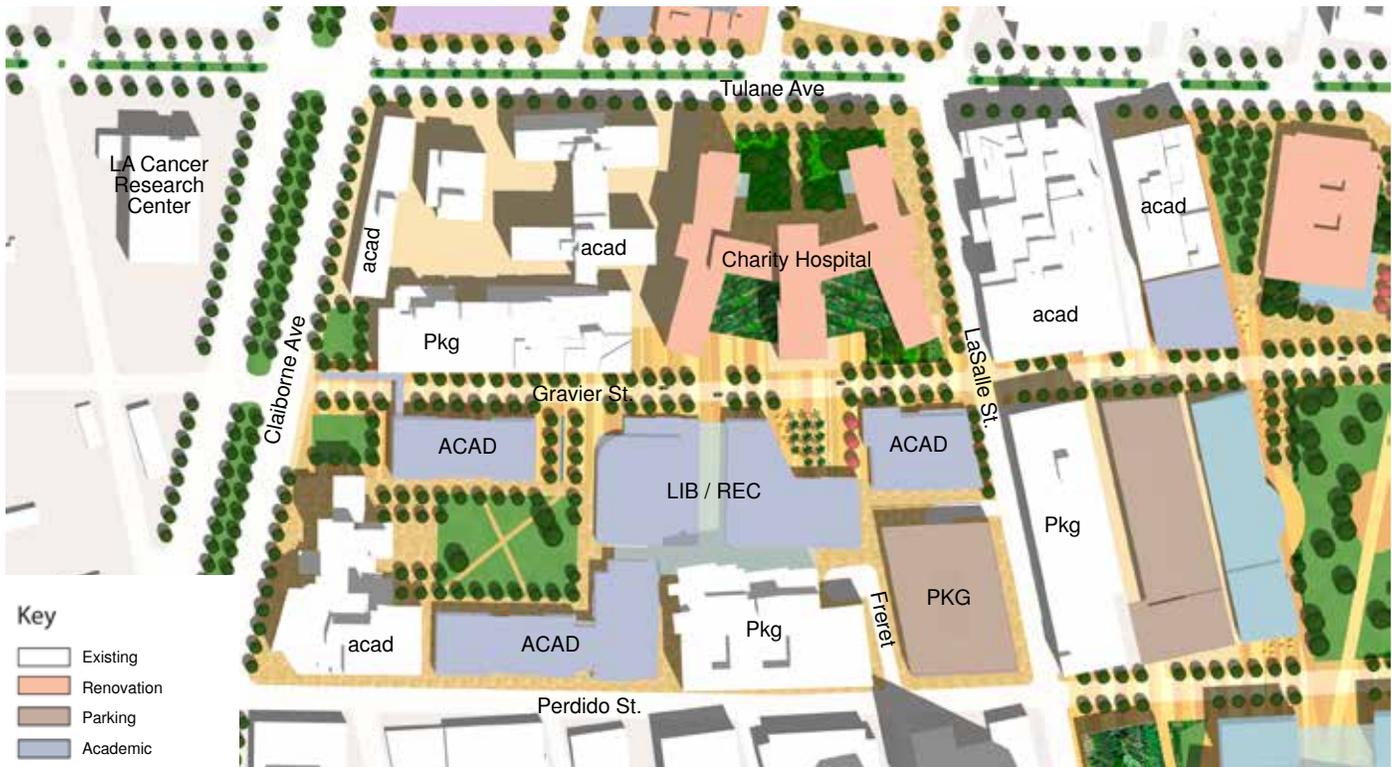
### Tulane/Canal Street

- University expansion within urban fabric
- Math & Science Magnet High School
- ‘Festival’ street and two urban parks along Cleveland
- Mixed-use residential with active ground floor on Canal
- Expanded Claiborne Avenue retail
- Renovation of the Jung Hotel

### Tulane/Canal Street

This development area, like the Xavier/Gert Town Area, focuses on accommodating and integrating academic growth into the existing urban fabric. Key recommendations in this area include the transformation of three blocks of Cleveland Avenue into a pedestrian-oriented spine (but still carrying vehicular traffic) with adjacent public open space, and the renovation of two existing historic buildings into a Math and Science Magnet High School offering intern and enrichment opportunities with the adjacent colleges and universities. The Action Plan also proposes residential and mixed use development. These developments will be further supported by the renovation of the adjacent Iberville public housing which will include residential, mixed use and retail which together will transform the area into a unique vibrant urban neighborhood within the downtown core.

Renovation of the Jung Hotel also provides key hotel and conference facilities for UMC, VA and adjacent institutions to utilize.



Downtown Health Campus, plan view.

### Downtown Health Campus

The Downtown Health Campus will bring together the resources and opportunities of the City’s participating premier higher educational institutions onto a shared, urban campus in the heart of the BioDistrict. This clustered academic and training campus is envisioned as an important workforce development resource, and will serve a critical role in addressing the pressing need for a pool of skilled, medically-oriented technicians and professionals to support the BioDistrict’s expanding research and patient care activities.

The Downtown Health Campus will include a pool of shared student and faculty resources, such as dining, recreation, library, residential meeting and classroom spaces. The campus can offer flexible satellite facilities or act as primary campus expansion, based on the evolving needs of each participating institution. The campus will be created through a mix of new construction and renovation/reuse of existing structures, most notably the now-vacant Charity Hospital facilities and the abandoned VA Hospital.



Downtown Health Campus, street-level view at Charity Hospital, looking lakeside up Gravier Street.

### Downtown Health Campus

- New Delgado CC academic building
- VA Hospital replaced with new shared academic, student life, student services
- ‘Festival’ street & urban plaza on Gravier
- Renovated Charity Hospital
- Structured parking



Civic Center, plan view.



Civic Center, street-level view from Loyola Ave looking toward expanded City Hall.

### Civic Center

- Expanded City Hall
- New Municipal Courts Building
- Redesigned Duncan Plaza
- Renovated library with Gravier Street entrance
- Public Parking Structure
- Tulane University Health & Environmental expansion
- New Development sites facing onto Poydras

### Civic Center

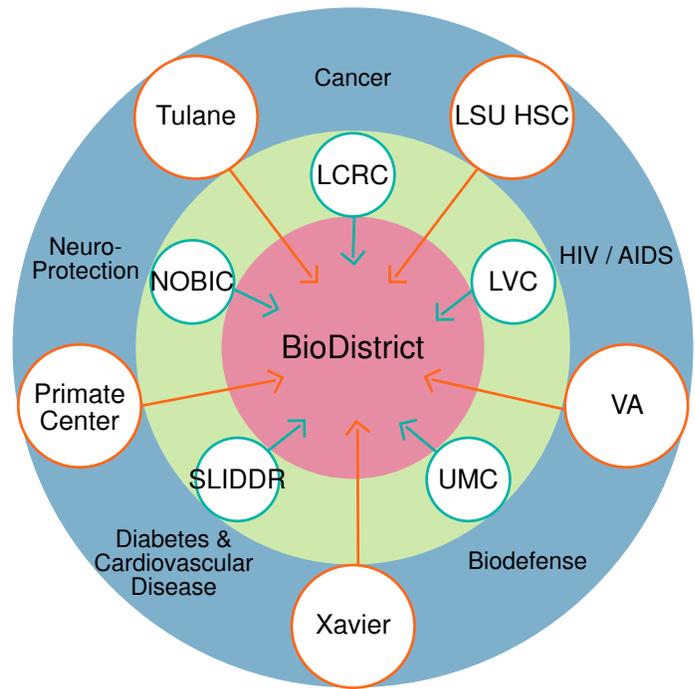
This development area focuses on increasing the capacity and efficiency of the City’s governmental functions, in tandem with creating a civic ‘front door’ and ‘living room’ for public gatherings. In order to provide expansion room for itself and for City Hall, the Civil Courts will move to a new, larger building immediately adjacent to Duncan Plaza. City Hall will be expanded in the direction of the plaza, with space for new cultural or commercial buildings to the east and west. The public library is also renovated to include a new, formal entrance facing the plaza. The vacant, damaged Warwick Hotel is removed to allow expansion of Tulane University’s Health & Environmental Research facility, the J. Bennett Johnston Building. At the heart of the new Civic Center, Duncan Plaza is renovated to provide a more flexible, special-event and public gathering space; streets on either side of the plaza are also redesigned to function as overflow space that can be closed to vehicular traffic during special events. The redevelopment of the Civic Center must be done in conjunction with the City, the State and the Judicial Building Commission (JBC).

## Implementation

A series of critical groundwork actions will be necessary for BioDistrict implementation. Among these items are permanent source of funding of the BioDistrict itself and the long term coordination and operation of the cluster, and the execution of a number of specific, technical studies including: a full utility condition assessment, a parking utilization and demand study, a detailed traffic management plan and a Downtown Health Campus programming study.

Defined partnerships between the BioDistrict, the State and the academic originators of local catalytic projects also need to be developed. These partnerships will determine what mode of participation (investor recruitment, facilities planning, civic engagement, community outreach, workforce development, etc.) will best leverage each catalytic project toward a more integrated research community, while enhancing the leading institutions' investments. In this way, Institutional autonomy can be preserved, and the BioDistrict can focus its resources on the most transformative projects within the emerging biocluster. We recommend the implementation of the organizing principle of subsidiarity, which states that matters should be handled by the smallest, lowest, or least centralized competent authority. This bottom-up implementation will be the most efficient and productive means of converting these catalytic projects to economic growth with a clear Rate of Return for all parties. The results from this type of collaborative structure will be greater than those which each organization could accomplish solely on their own and will thereby provide a value added service to the local biomedical community.

This Action Plan document also includes a Prioritized Action List noting specific actions necessary to District implementation, as well as time frame and



Through major institutional collaboration, combined with BioDistrict facilities, the BioDistrict will be able to solidify and expand its reputation and role in 'hot' areas of bioscience research and expertise.

responsibility for those actions. The list is organized by topic, and utilizes a four-part phasing structure consisting of: immediate, 0-5 years, 6-10 years, and 11-20 years. In partnership with the BioDistrict, entities holding responsibility for primary pieces of Action Plan implementation include: City of New Orleans, BioDistrict New Orleans, Greater New Orleans Inc (GNO Inc), the Louisiana Department of Transportation and Development (LDOTD), Louisiana Economic Development (LED), New Orleans Business Alliance (NOLABA), Orleans Public Schools (OPSB), New Orleans Regional Planning Commission (RPC), Orleans Parish, the Downtown Development District of New Orleans (DDD) and the many participating public and private institutions that are or wish to be within the BioDistrict.

## Opportunities, Challenges and Trends

In order to realize its full potential, the BioDistrict must capitalize on the following opportunities and overcome the following challenges.

### Opportunities

- Fully utilize the state-enabled legislative statute that defines the BioDistrict.
- Engage, preserve and enhance the local neighborhoods to improve public infrastructure policy, programs and improvements that create a stronger urban community
- Create a stronger physical and visual connection between the new VA/UMC facilities and the downtown CBD core. Removal of the Claiborne Viaduct and introduction of enhanced streetscape on key connecting corridors are two important elements of this effort.
- Improve public transit on Tulane Avenue. Complete the forward design and construction of the Loyola streetcar.
- Promote a greater variety of residential housing types to accommodate a full range of demographics, life cycles and lifestyles.
- Enhance, expand and complete the bicycle/pedestrian facilities within the BioDistrict to make it a national model of a bikable, walkable community.
- Provide new neighborhood-serving commercial spaces geared to the needs of local and small business.
- Leverage reinvestment in the Superdome, Benson Towers and Hyatt Regency Hotel to increase the BioDistrict's attractiveness as a local and regional visitor destination.

### Challenges

- Creation of a BioDistrict-specific, fast-track blight remediation program, in coordination with existing City programs and procedures.
- Enhanced, effective institutional communication and collaboration on under utilized sites and properties
- Lack of fundamental civic and community upkeep of the public realm.
- Aging, outdated infrastructure systems.

- Lack of an urban forest tree canopy replacement strategy since Hurricane Katrina

### National and Global Trends

In addition to local market forces that influence the potential changes to the BioDistrict, national and global trends offer unique opportunity for the shaping of the BioDistrict:

- Embracing cultural, generational and demographic diversity.
- Emergence of an international "middle class."
- Diversity of housing options, prices and amenities that create socially diverse neighborhoods.
- Integrating transit into daily commuting patterns.
- Fostering a healthy active lifestyle through community green space and facilities.
- Providing places and venues for neighborhoods to come together.
- Walkability becomes the dominant driver by providing quality pedestrian amenities.
- Encourage and celebrate social, economic and environmental sustainability.

### Implementation Plan

The BioDistrict is made up of a series of neighborhoods and areas that each contributes to the overall urban fabric of New Orleans. Civic, Sports, Educational, Medical facilities and traditional shotgun neighborhood housing areas all play a key role in this rich mixture of facilities that defines ones image of New Orleans and specifically the BioDistrict. Together this collection of neighborhoods and uses provides the opportunity for improved economic development, new jobs, immense education opportunities and an improved quality of life. Each neighborhood within the BioDistrict has it's own unique set of issues and decision makers who will help shape the public and private environment and opportunities moving forward. What is universal though across all neighborhoods within the BioDistrict is the commitment from all stakeholders, the public and private sectors and the institutions and agencies to work collaboratively together to help implement this action plan for everyone's collective benefit and common good.

## Conclusions

Education and job creation are at the core of this Strategic Action Plan. The BioDistrict's ability to leverage the synergies of the economic investment in the new VA Hospital and University Medical Center into education programs and job creation for current and future residents of New Orleans is the key driver of this plan.

These cornerstone investments in education and jobs will go hand in hand to stimulate public and private investments in an enhanced public realm, provide a variety of residential options, and promote locally-based neighborhood-serving retail. Investments in both new and renovated residential development will support and enhance the fabric of the Gert Town and Mid City neighborhoods, creating a vibrant urban tapestry that meshes historic and contemporary into a unique, distinct character that will become the BioDistrict's hallmark.

The educational, economic and physical prospects of the BioDistrict will depend upon the collaboration of the institutions, the residents, private business, the philanthropic community and governmental agencies to all come together to make the potential of this strategic action plan a reality.

## Changing Context and Update

The plans and projects included in this document are based on known data, market conditions and extensive public input current at the time of writing. As with all large-scale, long-term development projects, it should be understood that actual design, phasing, and implementation of the projects and recommendations in this document will change and evolve in response to a host of local, regional and national factors, including market demands, development trends, funding, political climate, and community priorities and vision.

Since the initial issuance of this plan in July, 2012, over the following year the following key projects and policies that help contribute the BioDistrict success have occurred including:

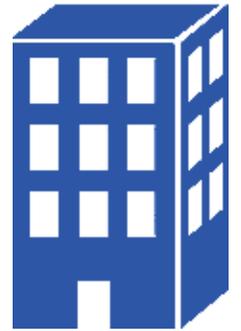
- Completion of the Loyola Street Car
- Adoption of Construction Impact Fee legislation
- Memorandum of Understanding on construction and location of the new Civic Courts
- Commencement of the Claiborne Avenue highway removal study
- Bio Conference hosted in New Orleans
- Delgado Allied Health Building

3,600

CONSTRUCTION  
JOBS



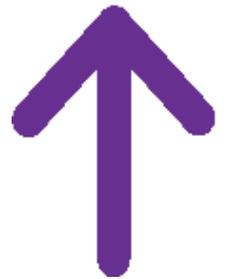
11.6 MILLION  
SQUARE FEET  
NEW AND RENOVATED  
BUILDINGS



\$\$\$ **3.3 BILLION** \$  
LOCAL ECONOMIC INVESTMENT

34  
THOUSAND  
NEW JOBS

24  
BILLION  
DOLLARS



INCREASED LOCAL  
PERSONAL EARNINGS

1.32  
BILLION  
INCREASED  
LOCAL  
TAX REVENUE



1.75  
BILLION  
INCREASED  
STATE  
TAX REVENUE



# Section 02: District-Wide Systems & Components



## District-Wide Systems & Components

Recent lifestyle trends and market studies have identified urban livability as the single most important factor in attracting and retaining the human capital needed to sustain a highly-educated, service and information-based economy. Existing and new entrepreneurial businesses will be seeking innovative cities and institutions that are highly connected -physically and socially – through cutting edge information technology and quality place-based urban amenities.

A city is a complex living organism, made of many inter-related parts both seen and unseen. Implementation of the BioDistrict vision must take on both a macro and micro scale, ensuring that larger regional and city-wide systems are in place to support community and neighborhood initiatives.

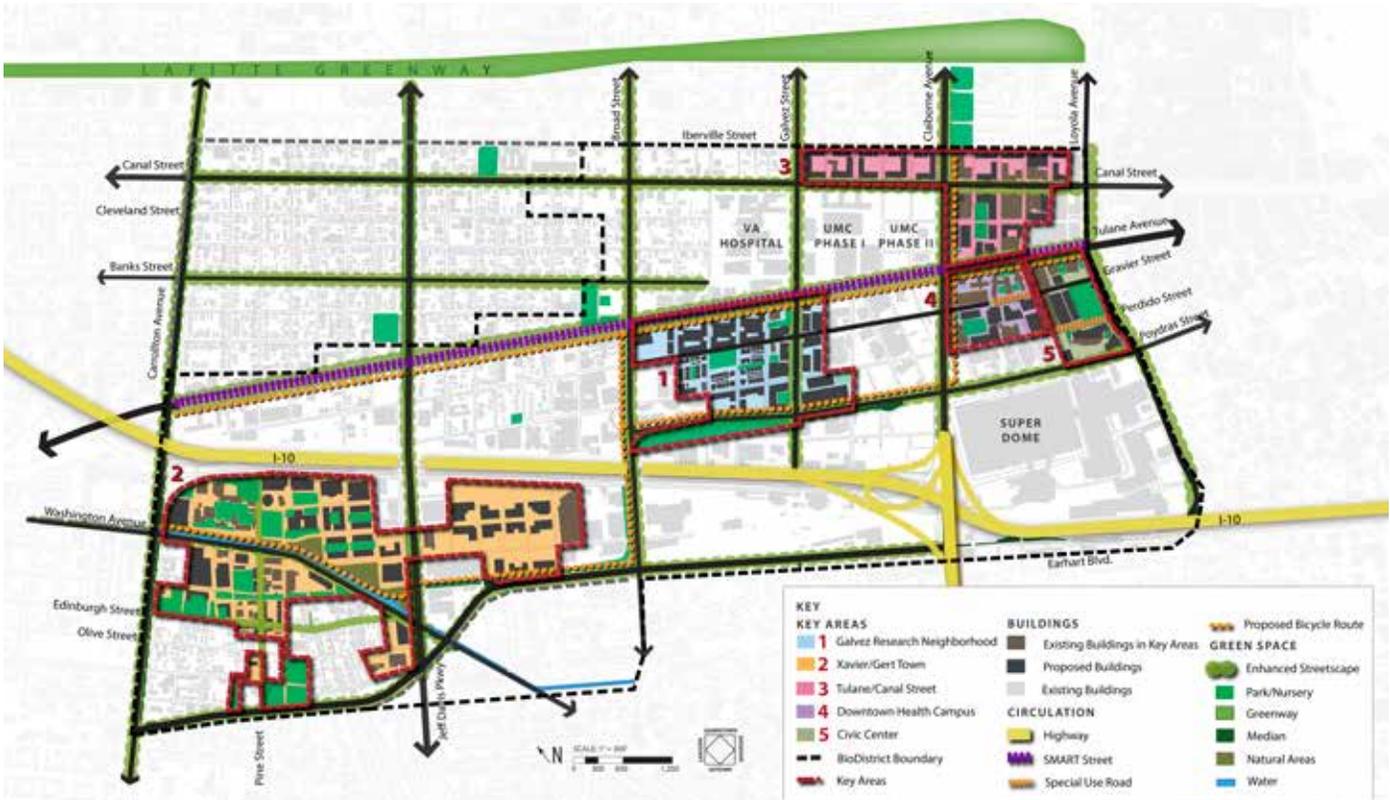
This section evaluates the existing condition and proposed changes to physical systems such as roadway infrastructure and transit infrastructure to create a successful urban place, while also evaluating the plan's alignment with relevant city policy and standards. More detailed, block-level neighborhood planning follows in the next 'Key Development Areas' section.



The BioDistrict will offer choices in the way residents and workers travel, shop and occupy the spaces in which they live and work.

This strategic Action Plan outlines a framework that will establish the BioDistrict as a national center for bioscience activity and leverage the projected four billion dollars in project investment and the 36,000 new jobs that will be created through BioDistrict development. In order to fully realize this potential, the BioDistrict must follow through on the following district-wide physical and programmatic systems and components:

- Cultivate local startup businesses via educational research and industry collaboration.
- Improve local education curriculum and facilities at all levels to train for future jobs.
- Improve access and options for transit.
- Localize high quality retail venues and shopping.
- Create a brand and district identity that promotes the BioDistrict as a place to live, work, learn and play.
- Create and enhance physical gateway points into the BioDistrict and Downtown
- Use public infrastructure investment and public policy enforcement to create safe, clean and attractive neighborhoods.
- Reuse and reinvest in historic buildings throughout the BioDistrict, and leverage New Orleans' 300-year history as the "Great Urban City of the South."
- Cultivate and expand world class music, arts and cultural venues and facilities within the BioDistrict and Downtown.
- Strengthen collaboration, communication and coordination between the BioDistrict, GNO Inc., DDD, the City of New Orleans, State officials and higher education university officials to focus on local, regional and state business attraction, recruitment and retention programs.
- Create a series of "Great Streets" including Loyola, Claiborne, Galvez, Broad, Jeff Davis, Poydras, Canal, and Tulane, that connect the BioDistrict to Downtown, Riverside, Uptown, Lakeside.

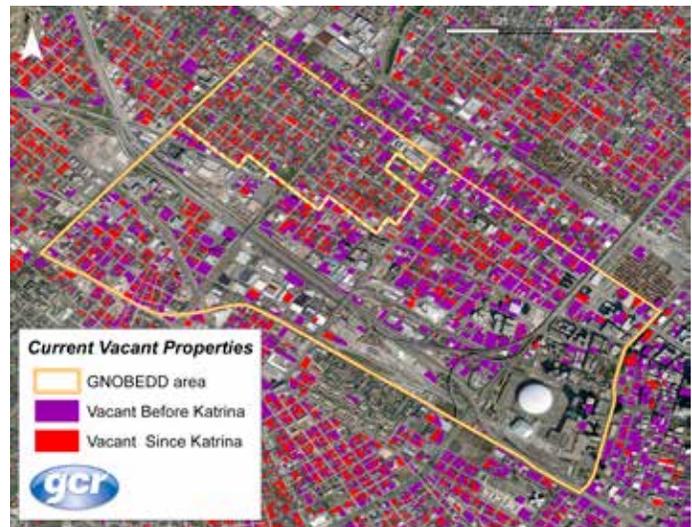


Key Development Areas: development and redevelopment will be directed toward five key redevelopment areas.

## Neighborhoods & Key Development Areas

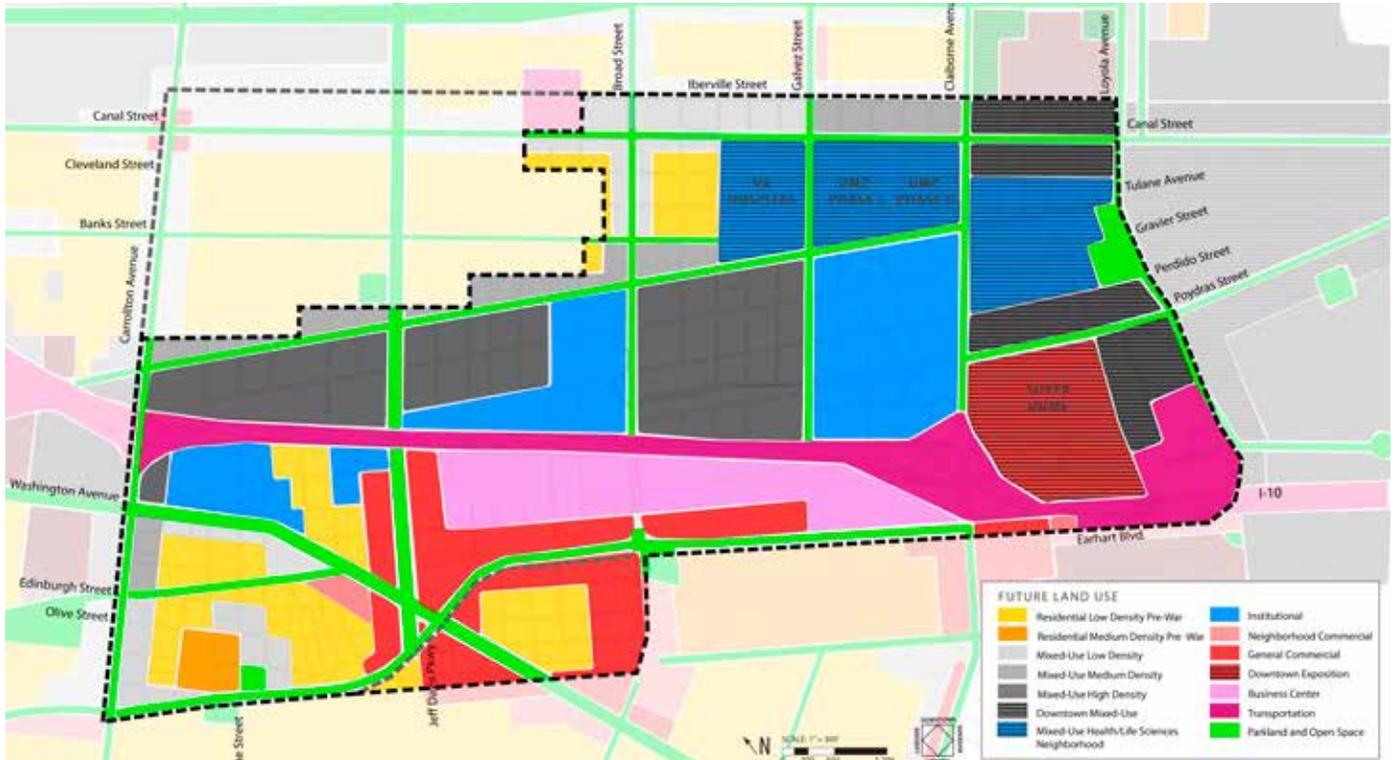
Within the BioDistrict’s three established neighborhoods, Gert Town, Mid-City and New City, there is a strong desire to maintain each community’s established residential character and scale. Residents desire neighborhood revitalization, but feel very strongly that redevelopment within their neighborhoods should happen organically, house by house and block by block, rather than through large, planned developments.

For this reason, the Action Plan has removed Mid-City and New City from the geographic boundary of the District and recommends minimal formal development within the core residential areas of Mid-City and Gert Town. Instead, the Action Plan focuses development and redevelopment on five key areas outside of these neighborhoods, as shown above. Within the neighborhoods themselves, BioDistrict New Orleans will work with the City, neighborhood groups, residents and property owners to identify priority parcels and work with stakeholders to identify neighborhood grants, partnerships and other



BioDistrict New Orleans will assist residents and owners in identifying assistance in renovating and redeveloping blighted properties.

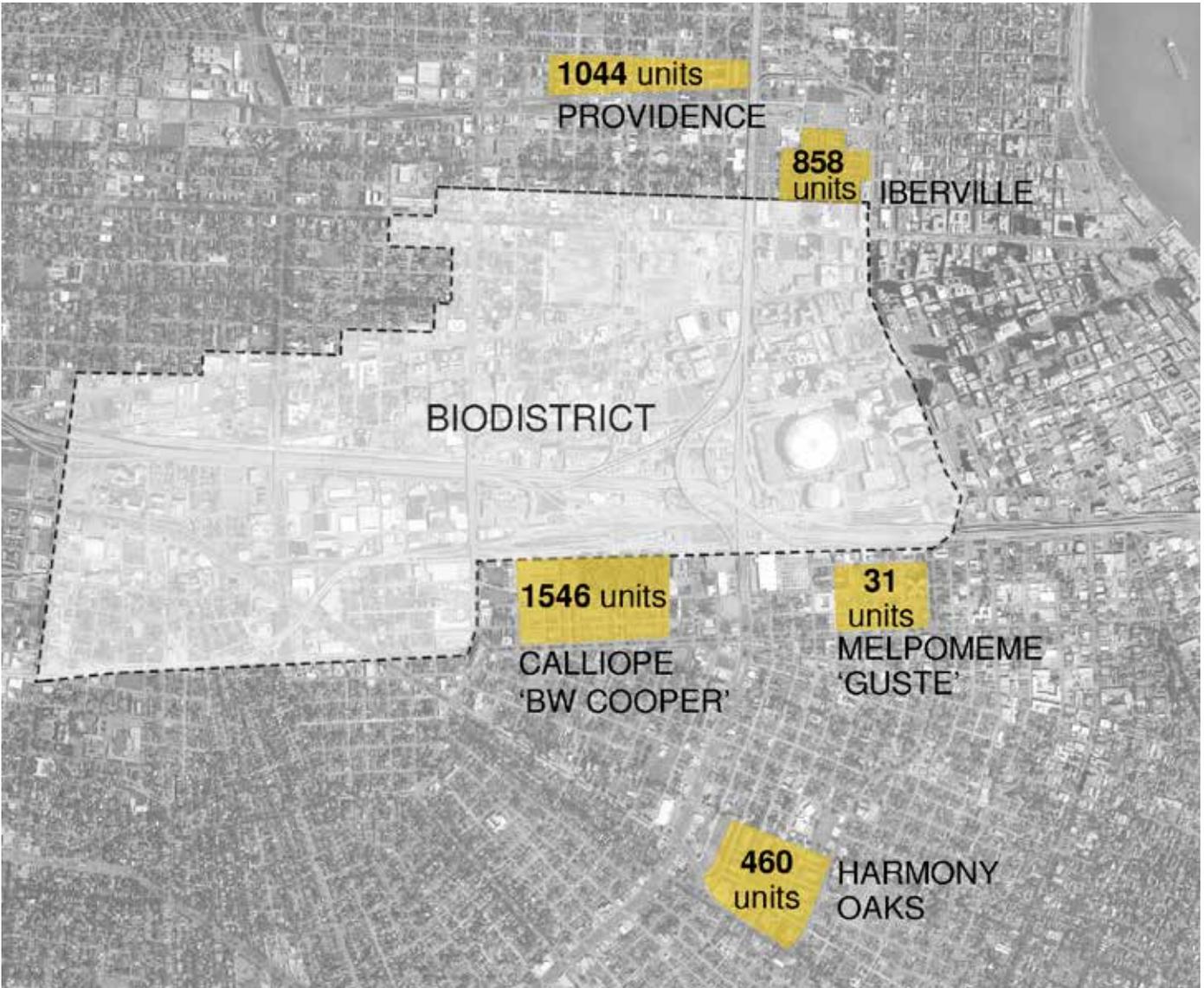
assistance programs that may be used for restoration or redevelopment. Priority parcels will include properties formally identified as blighted or determined to offer viable historic value. Critical to effective, organic neighborhood revitalization is continued support of and increased focus on the City’s BlightStat program.



BioDistrict Land Use: with few exceptions, land use within the BioDistrict aligns with new Future Land Use maps adopted by the City of New Orleans.

## Land Use

The majority of development and redevelopment recommended by the Action Plan aligns with existing land use patterns already in place throughout the District. The Plan is in conformance with the City's future land use maps, adopted in August 2010 as a first step in the preparation of a new city-wide Comprehensive Zoning Ordinance (CZO). The CZO is currently in a public comment period, and is scheduled for final review and recommendation by the City Planning Commission in fall 2013, after which it will be sent to the City Council for formal adoption. Any changes in future land use and CZO mapping will need to be requested by individual land owners or a city council person, as in the case of multiple properties. The BioDistrict will not initiate revisions to these documents.



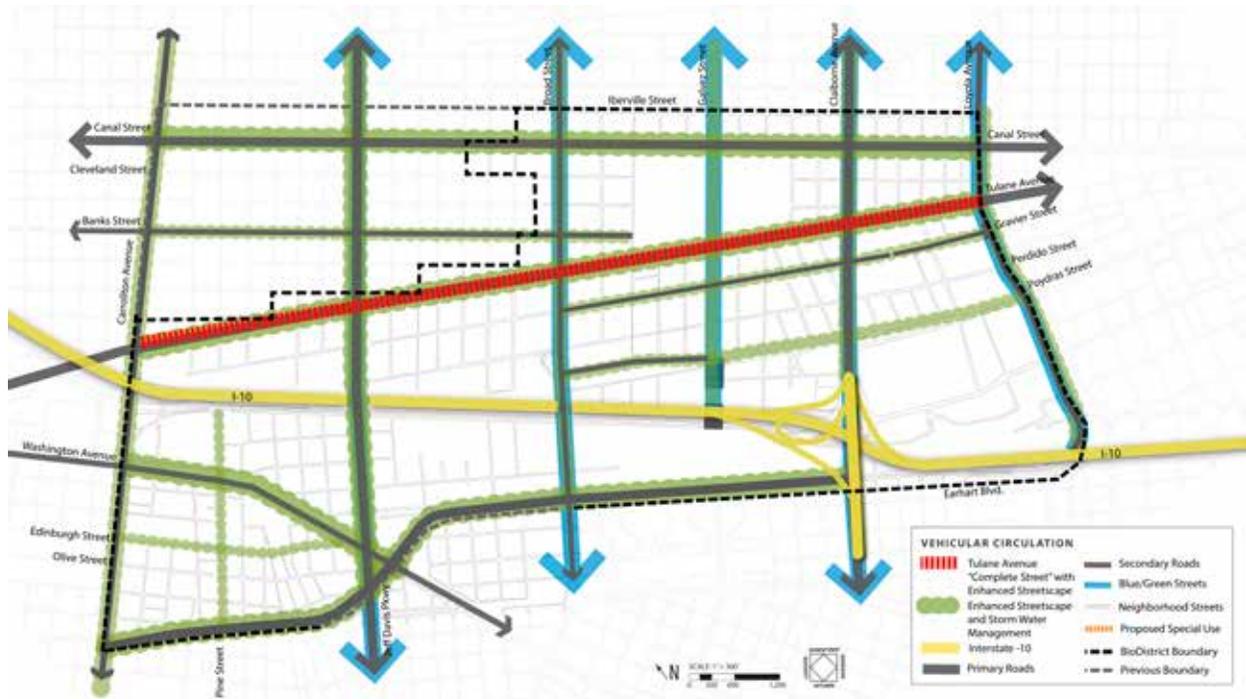
Adjacent New and Planned Neighborhood Projects and Unit Totals = 3939



Harmony Oaks Apartments



Providence Community Housing



Circulation: the Action Plan promotes a 'complete streets' approach to existing infrastructure, focusing on ensuring safe, efficient travel for all modes of travel including pedestrians, cyclists, vehicles and public transit.

## Green Space

Successful urban areas offer a rich tapestry of amenities and conveniences. Chief among these amenities that existing and future residents desire will be a high-quality open space system that provides places for active, lively community gatherings as well as quiet, reflective individual respite. The Action Plan integrates a variety of types of green space within its key redevelopment areas, in order to ensure adequate space for recreation and relaxation within walking distance of both daytime users and urban residents. Public open space will be provided as part of all new master-planned developments, which will be required to identify non-City sources of funding and maintenance as part of the approval process.

## Parks & Greenways

Each key redevelopment area within the District enjoys at least one centrally-located park or linear greenway. Parks may include both plaza and 'gardenesque' elements, but focus on providing flexible community space that acts as both urban oasis and outdoor community 'living room'.

Special focus on Jeff Davis, Broad Street, Galvez and Claiborne should incorporate storm water management areas and techniques. These key north south streets should also make enhanced bike and pedestrian connections to the Lafitte Greenway.

## Athletic/Recreational

The majority of active recreational uses will be provided for in the nearby Lafitte Greenway, less than a mile from the bulk of the BioDistrict. In order to maximize resources, the majority of green spaces within the BioDistrict will be designed with a focus on passive, informal use. The reconstruction and reopening of the Gert Town public pool, park and recreation center however, is an important active recreational amenity that must be provided.

## Medians

Medians act as an important organizing structure of green space within New Orleans as a whole, and particularly within the BioDistrict. These green infrastructure arms extend riverside-lakeside and uptown-downtown throughout the BioDistrict, creating connections within the BioDistrict and out into the City as a whole.

## Nurseries and Naturalized Areas

Community-integrated container nurseries in Gert Town and the Galvez Research Neighborhood area will provide plant materials within the very communities where they are needed, for streetscape and open space projects throughout the BioDistrict and the City. This concept responds to the need for a more sustainable and economically advantageous strategy to greening urban areas while also providing community employment and empowerment. In recent years, numerous municipalities and community organizations have launched tree planting and green infrastructure programs to improve the livability of their communities. Community nursery facilities can serve as a catalyst for urban regeneration in an emerging green economy, a new form of holistic agricultural urbanism, and educational opportunities in conjunction with the Delgado College Horticultural Program. These uses are considered long-term uses which will eventually be converted to parks, naturalized open space or stormwater management amenities.

## Water

Enhancements to the Washington Avenue Canal in the Xavier/Gert Town area will introduce a major water-based amenity to the BioDistrict. Passive infiltration and bioswales will be introduced onto neighborhood streets throughout Mid-City, as right-of-way allows. In addition, rainwater capture in buildings and landscapes may be used to reduce potable water demand and stormwater generated by the project, and will facilitate use for non-potable purposes such as toilet flushing and landscape irrigation. For additional information, please refer to Appendix E.



'Green space' can be captured in unexpected places, like this eco-roof.



Stormwater treatment can be integrated into the City as an urban amenity.



Container nurseries can serve as a local resource to rebuild the District's tree canopy.



A successful sustainability strategy depends not on location-specific intervention, but rather on comprehensive integration into all of the District's elements: green building (including re-use), meaningful open space, transportation choice, and healthy social infrastructure.

## Sustainability

Sustainability is central to the vision and master plan developed for the BioDistrict, given its location, excellent transit access and large number of jobs in close proximity to dwelling units at diverse price points. The environmentally favorable development practices and green identity envisioned for the BioDistrict are also highly compatible with the biosciences-oriented businesses and employees that the BioDistrict strives to attract. When implemented, the masterplan can place the BioDistrict as a catalyst for social, economic and environmental sustainability in the City and region through meeting or exceeding sustainability goals.

In the BioDistrict five key themes emerged as the sustainability priorities for the project:

- Preservation of the historic neighborhood character
- Improved quality of life through provision of local amenities and job creation
- Enhancing multi-modal transportation options
- Living in balance with water
- Improved urban reforestation program

Sustainability measures to address these priorities and others have been incorporated into the master plan to varying degrees. Because the plan covers such a large area, long timeframe, differing neighborhood priorities, and diverse and evolving land use conditions, sustainability strategies will naturally grow and evolve with the District, and with ever-changing best management practices.

## Buildings

The architectural character of new and renovated buildings will have a great impact on the sustainability of the District. The District is already the home of the City's first two LEED certified buildings: Benson Towers and the BioInnovation Center. New non-residential buildings are encouraged to match the City's current policy for municipal buildings by achieving at least LEED Silver certification (and future requirements as they change over the lifespan of the masterplan), with a focus on high performance, in terms of water and energy efficiency, and carbon neutrality.

## Urban Tree Reforestation

Hurricane Katrina severely reduced the urban forest throughout the City. The canopy has been reduced to 3.6 percent in the BioDistrict and the master plan includes a strategy for increasing this to approximately 20 percent, or approximately 10,000 additional trees planted by 2030 in line with City-wide goals. The urban forest, parks and greenways can also provide a variety of environmental benefits including urban heat island reduction, passive cooling of buildings, habitat for wildlife, carbon offset, a more attractive public realm, increased property values, and recreational and public health benefits.

For additional information regarding tree canopy goals, please refer to Appendix F.

## Circulation

A new internal shuttle route has been proposed to connect Xavier University with LSU and Tulane medical schools, which will help reduce personal auto trips between the campuses. Wait-times for some existing transit lines within the District are relatively long and make transit less desirable; however, new GPS/mobile phone services available in many cities such as nextbus.com can help reduce actual wait times endured at low costs without adding more service. These technologies and bike and pedestrian friendly measures are part of a new paradigm in street network planning that has been coined 'Smart Streets.' For the BioDistrict, the concept also includes incorporating high-performance fiber optic connections between buildings or campuses within rights-of-way to provide 'Smart Street' signaling to optimize traffic flow, public realm energy efficiency technologies, smart parking tools, stormwater management in right of ways, improved information technology and data management, and other next generation technologies that reinvent and optimize the connective benefits that streets provide.

## Stormwater

The BioDistrict is under constant threat of localized flooding and periodic catastrophic flooding. While the District is dependent on flood protection provided by the City's pump systems and levees, several landscape measures can improve the District's relationship with water. Low Impact Design (LID) measures such as bioswales, rainwater gardens, increased urban tree canopy, and cisterns designed to retain and treat



Offering transportation choices, including bike share programs, is an important part of environmental and social sustainability.

rainwater are encouraged to help hold more water on-site which may help to reduce subsidence and frequent small scale street flooding events. Additionally, given the limited stormwater retention capacity due to the very shallow water table (approximately 4-5 feet below grade), rainwater harvesting and reuse in buildings and landscaping is an important approach to consider.

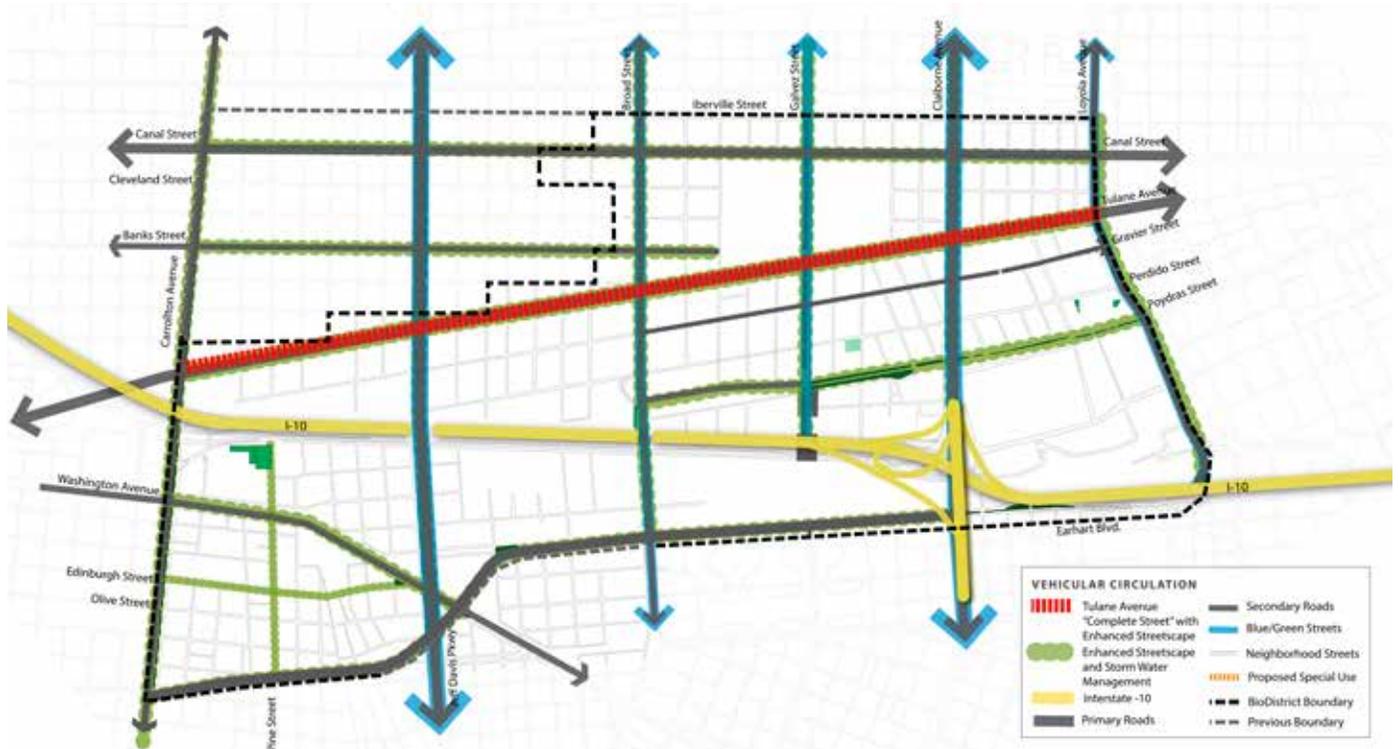
An initial storm water management plan for the BioDistrict has been completed. Results of this study identify the need for approximately 200 acre feet more of storm water capacity and the strong benefits to creating the Urban Nursery and Storm Water Park.

## Social Infrastructure

Based on national standards and best practices, the following social resources will be required to serve the 2030 BioDistrict population, projected to increase by 3,587 residents:

- Up to 4 new child care facilities (potentially sponsored by or in partnership with major employers);
- No new schools beyond those in the schools master plan: Fisk-Howard Elementary (450 students), Citywide Medical Laboratory High (250 students), renovated Booker T Washington High (1100 students)
- 1-2 playgrounds;
- 9.7 acres open space at minimum;
- No new recreation facilities (except expansion of existing basketball and swimming pool facilities and putting back on line the Rosenwalt Gym and pool at the corner of Earhart and Broad and the pool and recreation center in Gert Town

For additional information regarding Social Infrastructure Framework analysis, please refer to Appendix D.



Circulation: the Action Plan promotes a 'complete streets' approach to existing infrastructure, focusing on ensuring safe, efficient travel for all modes of travel including pedestrians, cyclists, vehicles and public transit.

## Circulation

The Action Plan transportation framework is based on two principles. The first of these critical goals is the provision of convenient connections between residences, the workplace, shopping, and recreation to the residents and workers in the BioDistrict and its environs. Secondly, and a specific corollary to the first principle, is that the BioDistrict must ensure that the pedestrians and bicyclists are accommodated throughout the BioDistrict and that all streets are safe for the operation of all modes.



Traffic calming devices slow traffic and enhance pedestrian experience.

The Action Plan proposes five transportation projects that will have a profound impact on the connectedness prescribed in these two principles: These projects are listed below:

- Claiborne Avenue Parkway
  - viaduct removal with cross-section and streetscape modifications
- Tulane Avenue Improvements
  - multi-modal enhancement and streetscape improvement
- Poydras Avenue Extension
  - ramp removal and gateway landscaping
  - extend Poydras into Galvez Research Neighborhood
- Washington Avenue Bikeway
  - off-street pathway and open space amenities
- Earhart/Carrollton Streetcar
  - connecting existing Canal Street and proposed Loyola Avenue streetcars)

## Vehicular

In New Orleans, as in most American cities since the mid-20th century, private motor vehicles have become the primary means of transportation within metropolitan areas. The shift away from public transit and toward private vehicular travel has demanded significant shifts in the physical configuration of the urban environment, requiring large amounts of space dedicated to high-capacity roadways, for moving vehicles in and out of the city, and for parking vehicles while they are in the city. Many of the City's primary roadways, originally constructed as multi-modal pedestrian-friendly environments, have shifted to high-capacity, motorized commuter movers. These vehicle-focused corridors devalue and divide established urban neighborhoods, ultimately resulting in the dispersal of residents out of the urban core and creating additional roadway demand. New Orleans and the BioDistrict in particular have the opportunity to set a national precedent for reversing this trend and returning to a District-wide pedestrian priority.

The BioDistrict seeks to enhance the existing urban fabric of Mid-City and Gert Town and to reestablish a vibrant urban mixed use environment in the whole of the BioDistrict. A key transportation-based component of this revitalization is an emphasis on modes of travel other than private vehicles. The use of motor vehicles, especially for internal trips, would be discouraged and other modes would be accommodated and encouraged. Through-movements by motor freight also would be discouraged and off-street loading and unloading facilities would be developed for destinations in the BioDistrict.

The design changes in the roadway system are discussed more fully in the section that addresses the streets. The general vocabulary of available concepts includes:

- Reduced lane width, which has a traffic calming effect. Drivers using roadways with lanes narrower than 12 feet, especially if narrower than 11 feet, sense that their ability to maneuver is reduced and they reduce their operating speed as a result. This will be particularly helpful on Broad Street and Tulane Avenue.

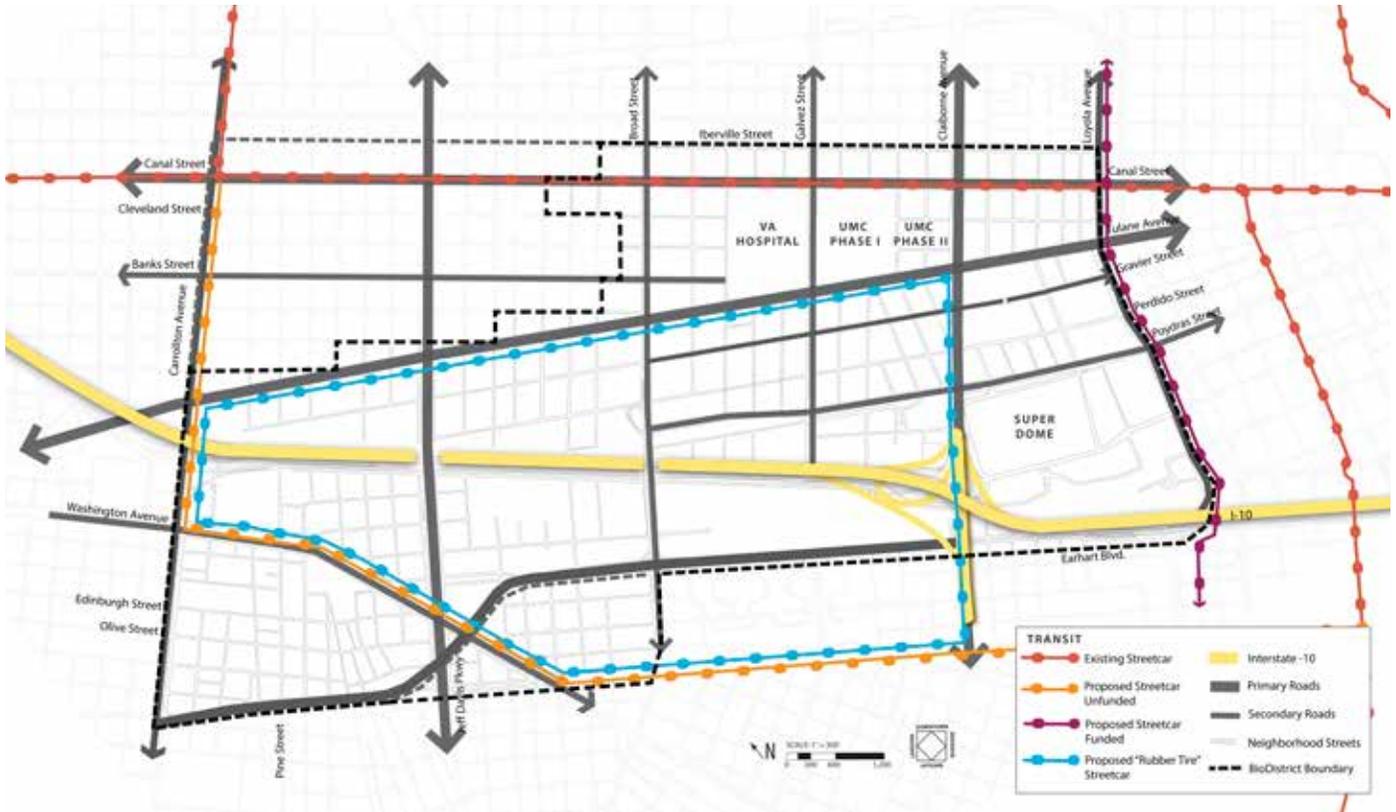


Green wall technology mitigates the visual impact of structured parking.



Enhanced streetscape ensures a human scale in the midst of a busy urban environment.

- Parking along a street curb provides a buffer from moving vehicles for pedestrians, sidewalk amenities, and adjacent property. On-street parking also reduces speeds when vehicles are entering and leaving parking spaces.



Transit: the Action Plan recommends an enhanced transit system, including an intra-District circulator and new streetcar.

**Transit**

The BioDistrict enjoys excellent transit connectivity, providing connection to all parts of the City and Orleans and Jefferson Parishes. In 2009, the Regional Transit Agency (RTA) set national precedent by entering into a delegated management contract with Veolia Transportation, a global transit management company. This agreement allows RTA to maintain public oversight of the City’s transit infrastructure, while taking advantage of private-sector experience and efficiency. As a private operator with the potential to bring private investment into the public system, the RTA-Veolia partnership offers the potential for continuing, positive impact on mobility within the BioDistrict and the City as a whole.

RTA’s current system offers primarily bus service, complemented by the Canal Streetcar. Local bus routes operate on Tulane Avenue, Carrollton Avenue, Broad Street, Galvez Street, Claiborne Avenue, Basin Street / Elks Place / Loyola Avenue, Washington Avenue, Martin

Luther King Boulevard, and Poydras Street. Inter-parish routes also enter the Central Business District (CBD) via I-10, Tulane Avenue, and the Crescent City Connection and connect to the network in the CBD. A fully-funded project to construct a streetcar route on Elks Place and Loyola Avenue from Canal Street to the Union Passenger Terminal is also underway.

Two aspects of the system will require particular attention as the BioDistrict moves toward implementation:

- Currently, there is no direct route connecting Xavier University with other biomedical institutions located in or planned for the area between S. Broad Street and Loyola Avenue, and
- The schedules of many of the routes within the network result in trip times that are not competitive with private motor vehicles. This reduces the attractiveness of the transit system as a transportation option.

The BioDistrict recognizes that these aspects of the system must be improved and plans to work closely with the Regional Transit Authority (RTA), Jefferson Transit (JeT), the Regional Planning Commission (RPC), the Louisiana Department of Transportation and Development (LADOTD), and the Federal Transit Administration (FTA) to achieve these improvements.

A determination of the detailed actions, including both existing route and schedule adjustments, that would be required are outside the scope of this project. A separate transit analysis using the predicted residential and employment populations of the BioDistrict, as well as the regional travel demand model updated with 2010 US Census will be needed. This analysis should also review the possible use of the Union Passenger Terminal (UPT) as an intermodal facility and the potential of extending a streetcar line down Carrollton Avenue. This Action Plan does propose the development of a rubber tire system to connect the universities, which is described in further detail in the Transportation section of the Implementation Plan in this document. The merit of such a system should also be evaluated in the transit analysis.



Center-running streetcar on Canal Street.

photo: oldtrails.com



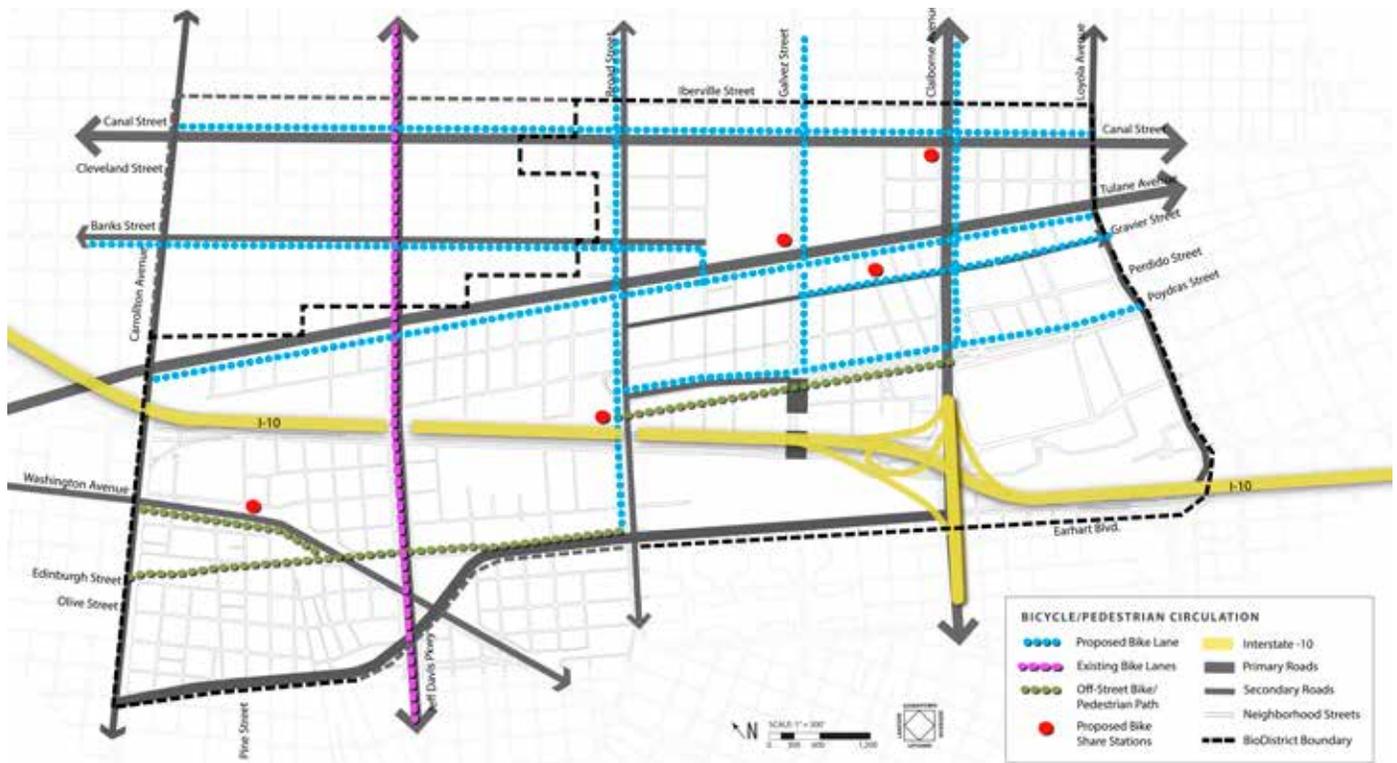
New Orleans Regional Transportation Authority (RTA) buses.

photo c 2006 www.busdrawings.com  
via www.citydate.com



Specialized graphics can be used to distinguish District circulators from regular City buses.

photo: oldtrails.com



Bike routes: an enhanced bicycle network will promote cycling to and within the BioDistrict.

## Bicycle

The use of bicycles for commuting and other transportation purposes has increased in recent years, and there is strong support for bicycles as an alternative mode of transportation. Currently, the BioDistrict's only designated bicycle infrastructure is a barricaded center lane on the Jeff Davis Parkway bridge, and a paved path on the Jeff Davis median. On the other major streets, cyclists share the street with vehicles of all types and sizes.

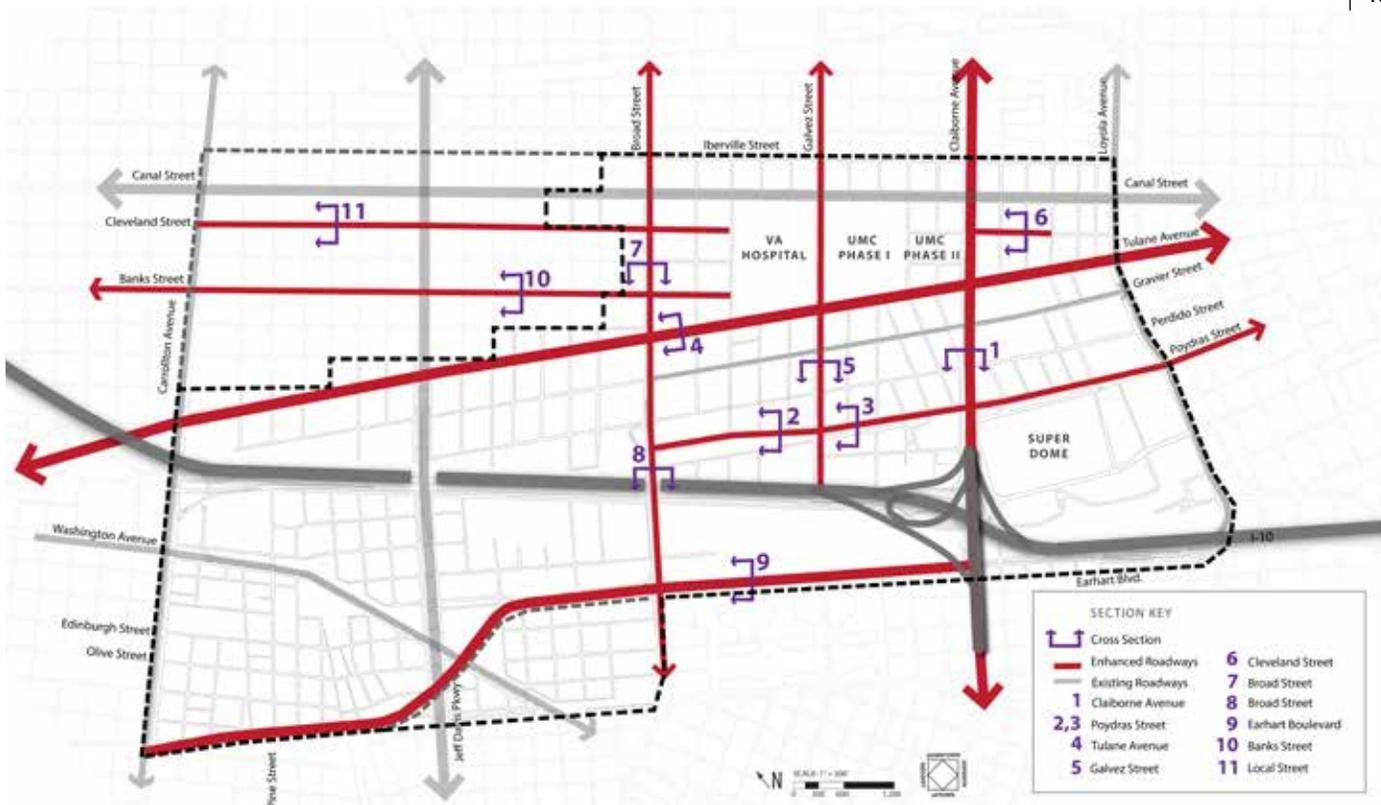
The Action Plan proposes an enhanced network of dedicated bicycle infrastructure, primarily striped on-street bike lanes. Lanes will bisect the District at regular north-south and east-west intervals, with the ultimate goal of creating a bicycle grid with dedicated facilities spaced approximately  $\frac{1}{2}$ -mile apart. Bike lanes proposed in this plan are illustrated on the accompanying graphic and in the roadway cross-sections in the next section. Outside the 20-year timeframe of this master plan (and not illustrated for this reason), a dedicated bikeway on Carrollton Avenue is also a long-term goal.

## Pedestrian

Pedestrian trips, especially those that are not originating or destined for a parking facility, are the essence of an urban environment. Only in a city is it reasonable to expect pedestrian work and shopping trips. As land use patterns have changed over the last 50 years to accommodate private vehicles, distances have increased and pedestrian trips have become less frequent. In order to reverse this trend and restore a vibrant, attractive urban environment, the Action Plan prioritizes pedestrian walkways and pedestrian safety in both land use planning and physical infrastructure.

Minimum pedestrian enhancements include:

- Paved sidewalks and curb ramps without obstructions,
- Pedestrian signals with exclusive phases at signalized intersections,
- Medians or other refuge at wide crossings,
- Well marked and well illuminated crosswalks,
- Elimination of visual obstructions for pedestrians and drivers at crossings, and
- Reduction of posted traffic speeds.



Roadway Changes: the Action Plan recommends changes to a number of roadways within the BioDistrict, as shown above. Changes include traffic-calming measures such as narrowed lane widths as well as pedestrian and bicycle enhancements, such as on-street bike lanes.

### Recommended Cross-Sections

All streets within the BioDistrict will be planned and reconstructed as “Complete Streets” that will accommodate pedestrians and bicyclists as well as motor vehicles and, where appropriate, transit. All streets are to be designed primarily to serve the needs of the residents and employees of the area. As it will take a considerable amount of time and resources to accomplish this goal, estimates of the priority of each street or street segment will be included in the following discussions.

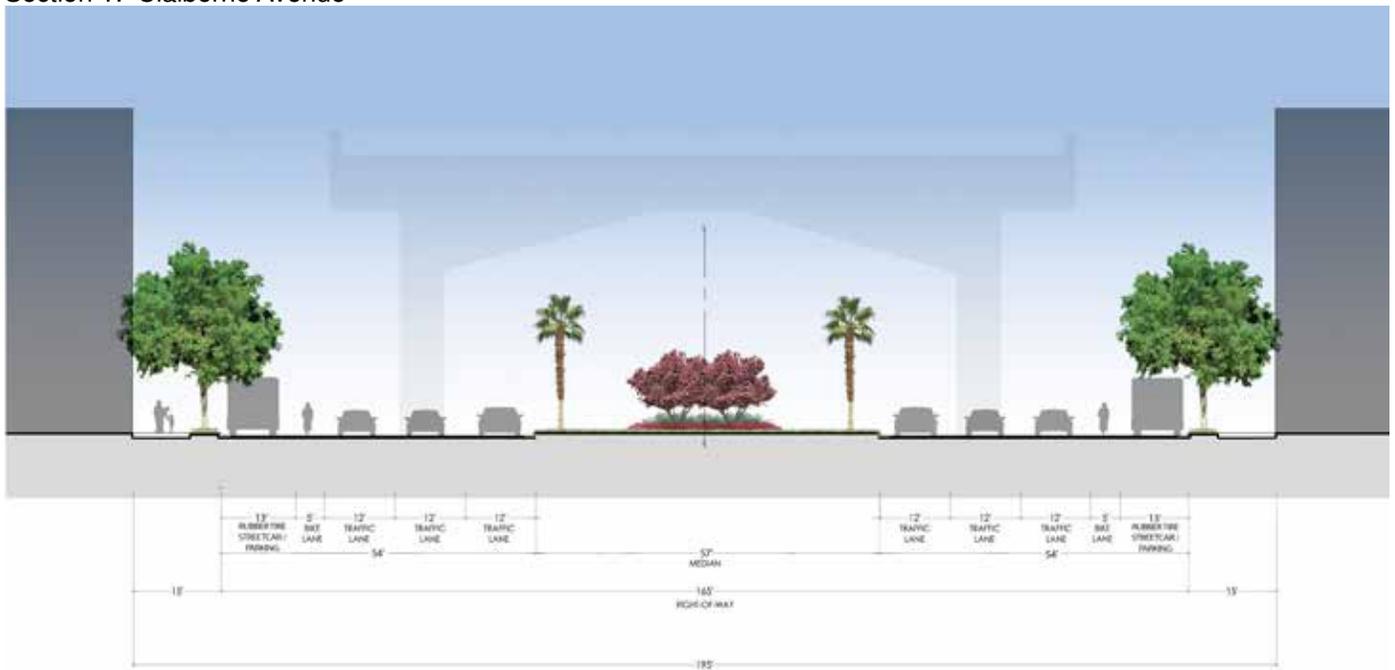


‘Complete Streets’ address the transportation needs of cyclists, transit riders and pedestrians, not just the needs of private motor vehicles.



Signage and wayfinding is an important element of ‘Complete Streets’ infrastructure.

Section 1: Claiborne Avenue



Claiborne Avenue modifications include removal of the I-10 overhead structure, introduction of streetcar, an on-street bike lane, parallel parking and streetscape enhancements.

Claiborne Avenue

- Add:
  - planted median
  - rubber tire streetcar
  - on-street bike lanes
  - widened sidewalks
  - street trees
- Remove: I-10 overhead structure

The New Orleans Master Plan recommended studying the feasibility of removing the section of I-10 along north Claiborne Avenue. The Claiborne Corridor Study has received partial funding of \$2 million and will evaluate all options for I-10 including leaving, modifying and taking down the overpass. The study is underway.

The effects of removing portions of I-10 could vary widely depending on which sections are removed. The possibilities range from removal of only the structure between Canal Street and St.. Bernard Avenue to the

removal of all connections between the Pontchartrain Expressway and St.. Bernard Avenue or some point farther east. The proposed study will recommend the most feasible plan, as well as complementary transit improvements to compensate for removal of this segment of the regional transportation system.

The BioDistrict Action Plan supports the removal of the I-10 overhead structures, and recommends an arterial section accommodating center-running transit with pedestrian-scaled streetscape improvements.

The redevelopment of Claiborne Avenue would be completed in accordance with the findings of the proposed study of the removal of the elevated I-10 roadway along north Claiborne Avenue.



Existing



Proposed

**Poydras Street**

- Add: planted median  
sidewalks  
street trees
- Remove: I-10 ramps
- Change: reduced lane width

Poydras Street, via Broad Street, is an important downtown gateway. In addition to the BioDistrict-wide roadway enhancement goals described for other streets, Poydras Street enhancements will extend the enhanced landscape and median treatment found in the CBD (currently ending at Claiborne Avenue) the entire way to Broad Street. The removal of duplicative I-10 on-ramp access is a critical part of reclaiming the median space necessary to make this enhancement happen.

**Section 1: Poydras Avenue, lakeside of Galvez**



**Section 3: Poydras Avenue, riverside of Galvez**

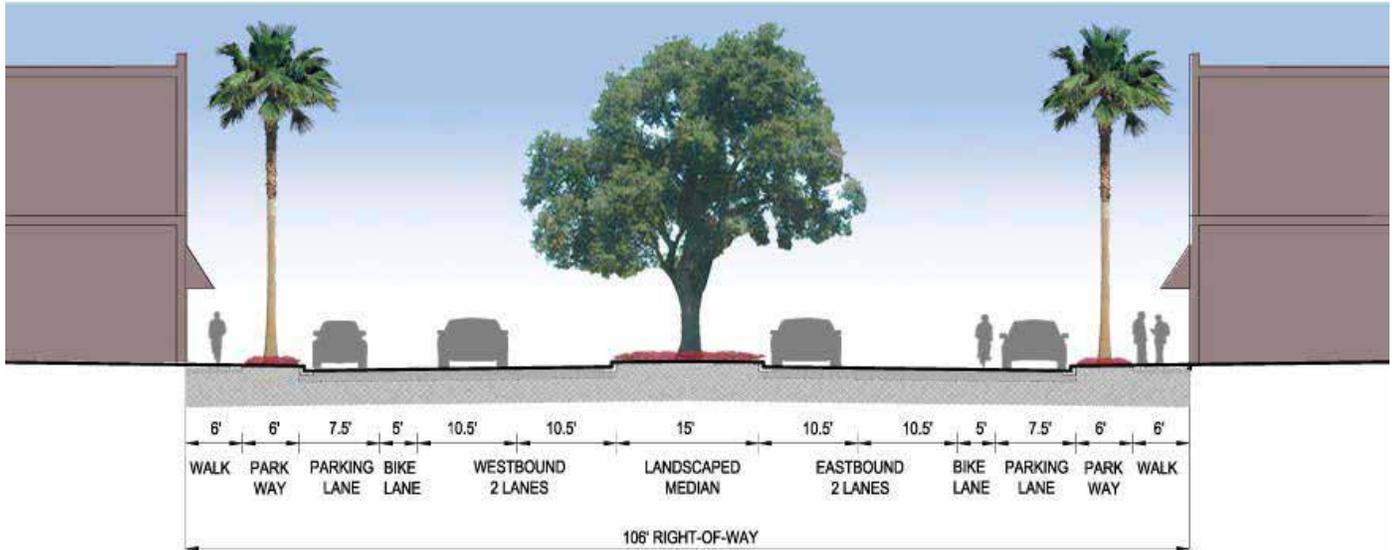


Poydras Avenue modifications include removal of the I-10 ramps as shown at left, reduced lane width, widened median and gateway streetscape enhancements.

The effects could vary widely and will be determined by the findings of the Claiborne Corridor Study. Any transit alternatives would also be derived from that study.

The redevelopment of Poydras Street on the riverside of Galvez Street would be completed in accord with the findings of the proposed study for the removal of the elevated I-10 roadway along north Claiborne Avenue. Between Galvez Street and Broad Street, the work should be accomplished in coordination with the work on the Broad Street overpass. Together, these changes should have a significant positive economic impact on the area, especially as it connects to Galvez Street, which is designated to become a signature research boulevard known as Research Row.

## Section 4: Tulane Avenue



Tulane Avenue modifications include a planted median, on-street bike lanes and widened sidewalks.

### Tulane Avenue

- Add:**
- widened median/left turn pocket
  - on-street bike lanes
  - widened sidewalks
  - street trees
- Remove:**
- one travel lane, each direction

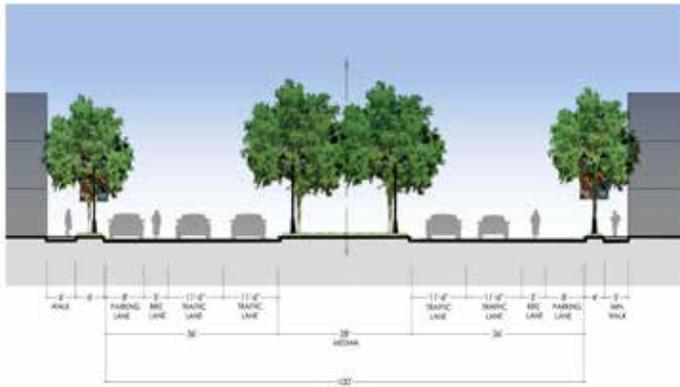
In addition to the BioDistrict-wide roadway enhancement goals described for other streets, the Tulane Avenue improvements will also introduce a median, making left turns into the VA and UMC complexes possible.

Current traffic counts show Tulane Avenue operating under capacity. The design developed by the Regional Planning Commission removes one travel lane in each direction, in order to add on-street bike lanes and a planted median/left turn pocket. It should be noted that there are no funds currently available for construction and that the segment between Claiborne and Loyola Avenues was not included in the conceptual plans. However, it is anticipated that the same design can be applied to that segment.

The segment of Tulane Avenue between Loyola Avenue and Claiborne Avenue would be the first priority for the BioDistrict together with Galvez Street between Tulane Avenue and Canal Street because these streets complete the connections between the new hospitals. Completion of Tulane Avenue between Broad Street and Carrollton Avenue would have a high priority to complete the “Main Street” of the BioDistrict.

Traffic impact analyses performed as part of VA and UMC development planning note excess capacity on Canal and Galvez Streets as well as Tulane Avenue. These streets are expected to absorb the low volume diversions resulting from hospital-related closure of portions of Cleveland, Palmyra and Prieur Streets.

Section 5: Galvez Street



Galvez Street modifications include a narrowed median, narrowed drive lanes, on-street bike lanes, parallel parking, widened sidewalk and street tree planting.

Galvez Street

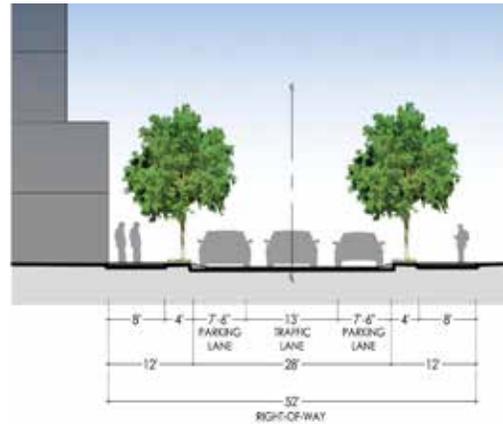
- Add: on-street bike lanes  
widened sidewalks  
street trees
- Change: narrowed lane width  
narrowed median

Galvez Street is an important internal link between residential uses within the proposed Galvez Research Neighborhood and the UMC/VA employment centers, as well as a link between the BioDistrict and the major bicycle and transit corridors of Lafitte Greenway and Canal Street, respectively.

Roadway changes will not affect roadway capacity, but will add on-street bike lanes and sidewalks sized for heavy pedestrian traffic.

The four blocks between Canal Street and Tulane Avenue that run between the VA and the UMC complexes have highest priority for enhancement and reconstruction. The three blocks between Tulane Avenue and Poydras Street would be next, with the remaining block to the Pontchartrain Expressway / I-10 right-of-way a long-term plan dependent upon changes to I-10 in accordance with the study of Claiborne Avenue. Changes to the block between Canal Street and Iberville Street would be completed in conjunction with the Lafitte Greenway.

Section 6: Cleveland Avenue, Tulane University Campus



Cleveland Avenue, Tulane University Campus

- Add: special paving  
street trees  
intersection bump-outs  
removable bollards

Cleveland Avenue will serve as a major pedestrian spine within the Tulane/Canal Redevelopment Area. While the existing roadway cross-section will be maintained, with a single one-way travel lane and parallel parking on both sides, pedestrian-level enhancements will be added to mark the corridor as a central campus amenity. Minimum enhancements should include street trees and special sidewalk paving. Other enhancements might include extending special paving into the roadway, rollover curbs and removable bollards so that the road can be closed to traffic and made into a pedestrian mall for special events. Pedestrian lighting and street furnishings should also be considered. The 12-foot wide pedestrian zone will generally be split into a four-foot amenity zone, which will include trees in grates, and an eight-foot sidewalk. On park blocks, tree grates may be replaced by a tree lawn, but general dimensions will remain the same.

Section 7: Broad Street

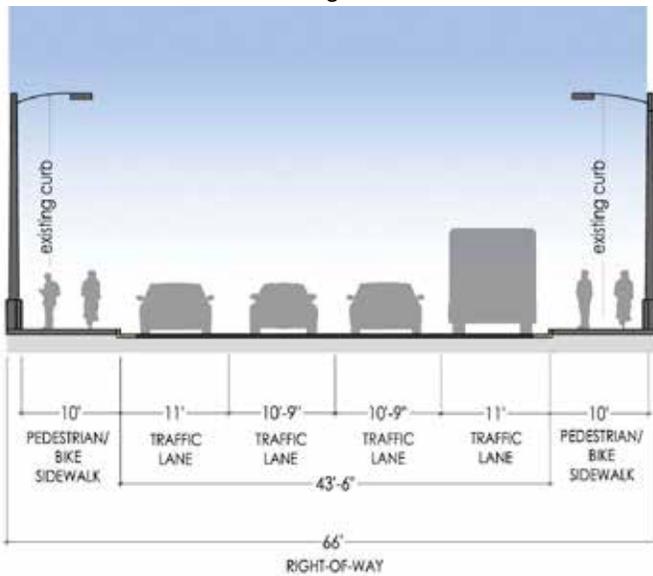


Broad Street

- Add: on-street bike lanes  
widened sidewalks  
street trees
- Remove: one travel lane, each direction

Broad Street improvements focus on increased connectivity across the I-10 corridor for bicycles and pedestrians, and creation of a more livable neighborhood. Existing traffic counts show excess capacity on Broad Street, allowing the removal of one travel lane in each direction in order to provide space for on-street bike lanes. As a state highway, Broad Street modifications should be coordinated with RPC and LADOTD.

Section 8: Broad Street Bridge



Broad Street Bridge

- Add: shared bike/pedestrian sidewalk
- Remove: center median
- Change: median lights moved to sides

On the Broad Street bridge, the concrete center median is removed and travel lanes narrowed in order to provide space for a shared pedestrian/bike path on both sides of the bridge.

The proposed improvements to Broad Street uptown of Iberville Street and along the Broad Street overpass would have a high priority, ranking just behind the completion of Tulane Avenue between Broad Street and Carrollton Avenue.

Galvez Street modifications include a narrowed median, narrowed drive lanes, on-street bike lanes, parallel parking, widened sidewalk and street tree planting.

Section 9: Earhart Boulevard



Earhart Boulevard modifications include narrowed drive lanes, widened and planted median and side 'bump-outs' to slow traffic and reduce pedestrian crossing distance.

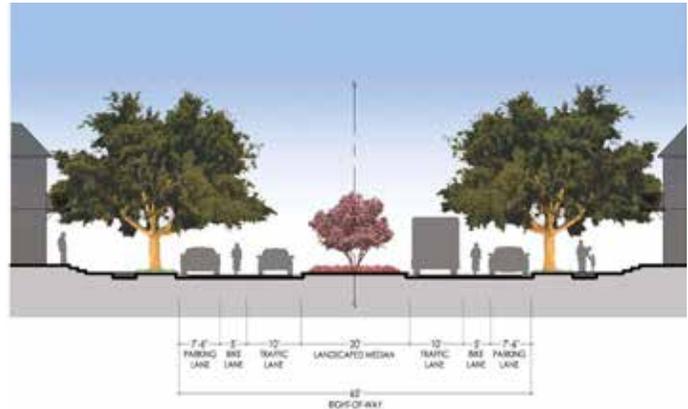
Earhart Boulevard

- Add: widened median
- north sidewalk
- street trees
- side bump-outs
- Change: narrowed travel lanes

As with many of the roadway enhancements recommended in the Action Plan, the goal of Earhart Boulevard improvements is to mitigate the roadway's negative impacts on neighboring residential areas. Reduced lane width and side bump-outs will provide a traffic calming effect, making the roadway safer for neighborhood residents and pedestrians. Sidewalks will be added on the north side of the roadway, as well as pedestrian scale streetscape improvements.

The highest priority segment of Earhart Boulevard would be between Washington Avenue and Carrollton Avenue where the benefits of a landscaped, more pedestrian friendly streetscape would benefit the existing residential population of Gert Town. As resources become available the segment between Washington and Claiborne Avenues would be developed with the segment between Claiborne Avenue and Broad Street taking precedence because of its residential character. As a state highway, Earhart Blvd modifications should be coordinated with RPC and LADOTD.

Section 10: Banks Street



Banks Street modifications a widened median and on-street bike lanes. Travel lanes are reduced from two lanes to one lane in each direction.

Banks Street

- Add: widened median
- on-street bike lanes
- Remove: one travel lane, each direction

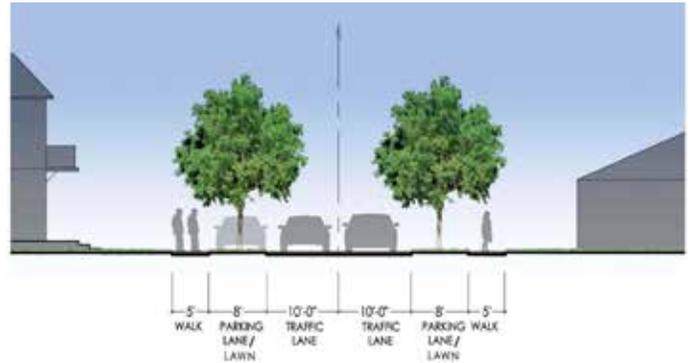
Banks Street improvements seek to enhance the street's existing parkway character by adding median plantings and an on-street bike lane. In order to accommodate a bike lane, one travel lane in each direction is dropped, a modification expected to have little traffic impact due to the street's low traffic counts.

Current plans for the VA Medical Complex contemplate a closure of Banks Street at Rocheblave Street. Due to the extremely narrow depth of the blocks between Rocheblave and Galvez Streets, it would likely be difficult for the VA Complex to program these blocks with development which would create an appropriate, active street edge on Tulane Avenue, one of the District's priority, pedestrian-oriented streets. To promote flexibility, the Action Plan recommends that Banks Street be closed at Rocheblave Street and that the District encourage the VA to build active, human-scaled facades fronting Tulane Avenue. In tandem with the closure, this Plan also encourages that the City consider signaling the intersection of Rocheblave Street and Tulane Avenue, in order to mitigate riverside-bound movements that may be impacted by the closure of these three blocks of Banks Street. A full traffic study should be done to determine the anticipated level of impacts, and the feasibility of a new signal approximately 1000 feet from the Galvez and Broad Street signals.



Most residential streets within the BioDistrict are very narrow, and rely on on-street parking. With a minimal setback to the front of homes, a shared tree zone/parking with a flush curb would address residents' parking needs while also allowing for enhanced tree canopy.

Section 11: Low-density residential streets



Mid-City, New City and Gert Town streets will be rebuilt with a curbless shared parking/amenity strip. This section would also be used on Cleveland Avenue.

Low-Density Residential Street

- Add: permeable parking area  
street trees
- Change: bring all sidewalks to minimum standards

The majority of residential streets within the BioDistrict are narrow, one-way roadways in widely varied states of repair. Curb and gutter is inconsistent, as are sidewalk widths and condition. Some streets have neither. Alleys and garages are uncommon, with most residents parking on-street or immediately adjacent in areas intended as planting zones.

Due to the extremely constrained right-of-way, the BioDistrict Action Plan recommends a formalized park/parkway section, in which the space between the drive lane and the sidewalk doubles as both planting and parking zone. A consistent pavement edge contributes to a look of maintenance and care, enhancing neighborhood character. Cobblestone or flush curb and gutter are two potential edge materials.

It is anticipated that neighborhood streets would be upgraded on a block by block basis, likely as part of other infrastructure projects.



Utility capacity and condition are critical to ensuring the BioDistrict is development-ready.

## Utilities

The Action Plan assessed the potential utility impacts of the increased density and changed land uses proposed in the plan. Analysis considered potential capacity demand only; the detailed condition assessment of existing infrastructure will require separate evaluation. This Action Plan does recommend that all street lights come off the grid and are replaced with solar lighting or LED lights.

## Communications

Communication systems are the area of biggest concern, and will require significant upgrades for both residential and commercial applications. An increase in density will lead to more traffic on fiber optic lines, possibly reducing transmission speeds. Ultra high-speed internet access will be needed for institutional research. Upgrades to this system will likely be driven by demand when the local communications company sees the potential to increase customer base.

## Gas

The Action Plan evaluated both high and low pressure conduits and found no issues of concern with the increased levels and types of development proposed in this Plan.

## Electric

The Action Plan examined existing capacity and increased demand, based on projected type and quantity of development shown in this Plan, on three main components of the electric distribution system: 24 kV aerial, 24kV underground and specialized sewer and water board electric. Although increased population density will dramatically increase demand on the first two of these components, there is adequate capacity for this application. There is no concern with the third, specialized type of electric distribution.

### Water

The Action Plan evaluated existing capacity and projected future demand for potable water, wastewater and stormwater. Although increased population density will dramatically increase demand on the first two of these components, there is adequate potable water capacity for this application. Stormwater detention storage is still a big physical driver and concern within the BioDistrict. There is approximately a 400 acre foot water storage demand for the 10 year storm within the BioDistrict. The City's new CZO will address on site specific detention requirements. However, all new projects within the BioDistrict should take the lead by being demonstration projects for advanced stormwater management.

## 10 Year Storm Water Assignment

The water assignment is the storm water volume in excess of the drainage system capacity, based upon preliminary modeling of a 10 year storm, performed by Royal Haskoning. The following are the total volumes for each drainage pumpstation service area basin that is impacted by the BioDistrict zone. A significant portion of DPS 2 is contained within the study area. Measures to store stormwater on project development sites can offset the overall water assignment, thereby reducing flooding within the district.

Drainage Pump Station #6 Service Area  
**301.0 Acre Feet**

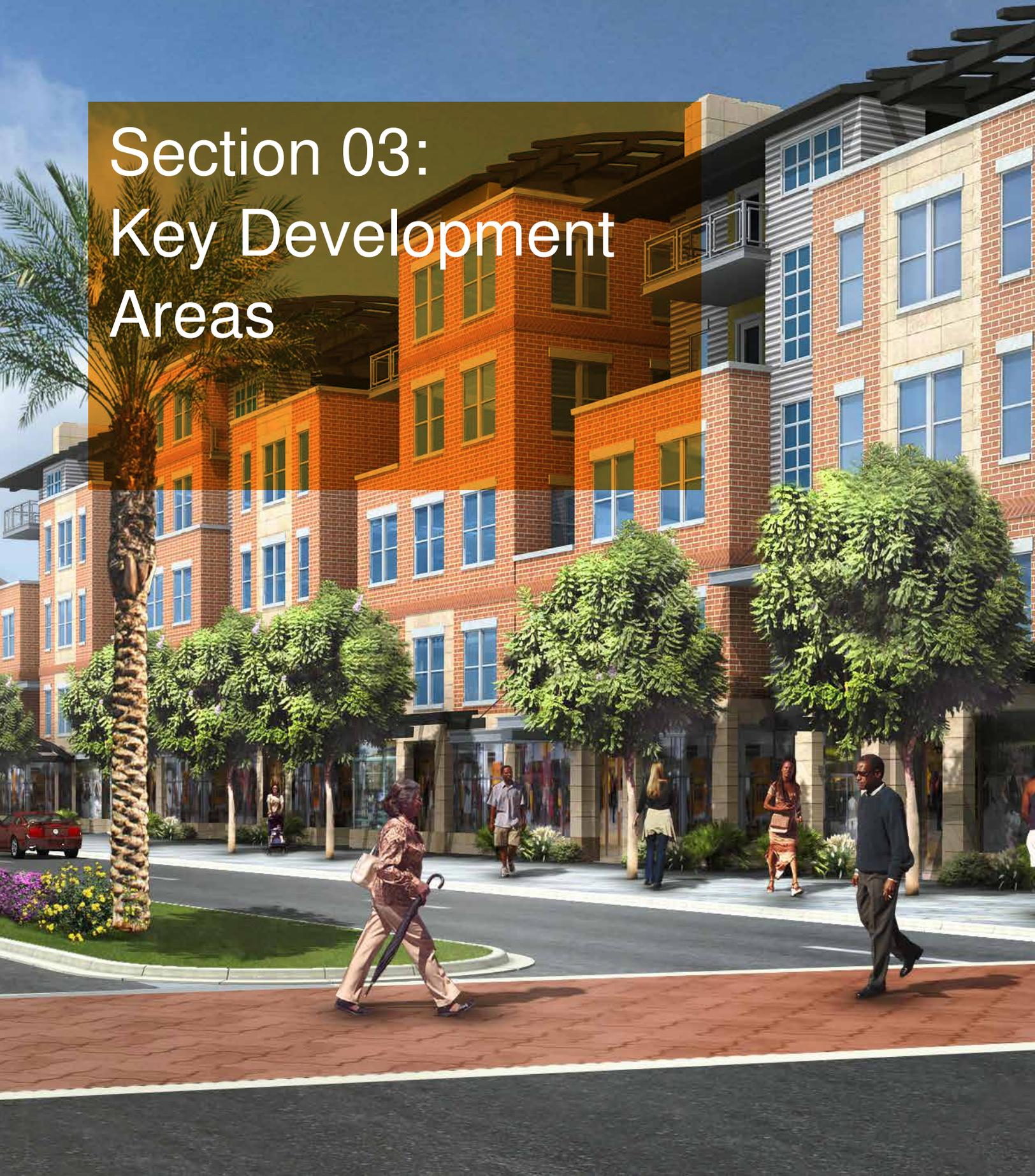
Drainage Pump Station #7 Service Area  
**134.3 Acre Feet**

Drainage Pump Station #2 Service Area  
**268.4 Acre Feet**

● FEMA Severe Repetitive Loss Properties



# Section 03: Key Development Areas





## Key Development Areas

Stakeholder input guided the BioDistrict planning effort toward an approach of focused development activity, rather than one of broad-based community infill. The outcome of this approach is to create critical mass and a variety of land uses in a small number of areas, which will in turn promote further development around these catalytic areas, instead of diluting investment throughout the BioDistrict area. This 'key development area' approach is also specifically intended to allow the BioDistrict's adjacent residential neighborhoods to redevelop organically and based on market demand, rather than through large planned developments. This approach maintains each community's existing, unique character.

The five key development areas were identified based on potential catalytic projects, such as academic or hospital expansion, as well as market-projected real estate programming for the BioDistrict's target industries and supporting services. The development areas are the Galvez Research Neighborhood, Xavier / Gert Town, Tulane Avenue / Canal Street, the Downtown Health Campus and Civic Center.



Key Development Areas focus on the BioDistrict's target industries and potential catalytic projects, while allowing existing residential neighborhoods to revitalize and redevelop organically. The five key areas are as follows:

- A: Galvez Research Neighborhood
- B: Xavier/Gert Town
- C: Tulane Avenue/Canal Street
- D: Downtown Health Campus
- E: Civic Center



Galvez Research Neighborhood, street-level view looking along the Galvez Street R&D office and laboratory corridor.

## Galvez Research Neighborhood

The Galvez Research Neighborhood is envisioned as a major new mixed-use residential node within the larger BioDistrict. A variety of for-rent and for-sale residential products will provide a selection of housing options for people who study and work at the District's medical and research facilities. Sited in close proximity to some of the District's most attractive office and R&D sites, retail uses will focus on neighborhood-serving interests, including an urban-format grocer. Bounded by arterial roadways on all sides, the Galvez Research Neighborhood will distribute higher-intensity uses toward the area's outer edges, with lower-intensity uses and a public park within the neighborhood core.

### Summary of Key Projects within the Galvez Research Neighborhood:

- Galvez Street Improvements
- Neighborhood Grocery
- Medium Density Neighborhood Infill
- Neighborhood Park
- Poydras Street Improvements
- Reuse of Historic High School - Innovation Place
- Galvez office and Research Building Sites "Developer Ready"
- Tulane Ave. Improvements
- Urban Nursery and Storm Water Park

## Proposed Redevelopment: New Buildings

### Neighborhood Grocer

Critical to the creation of a walkable, live/work urban neighborhood is the presence of a full-service grocery store. Located on the corner of Tulane Avenue and Broad Street, this mid-size (approximately 50,000 Sq. Ft.) grocer will serve the Galvez Research and Mid-City neighborhoods. The store will use an urban-format grocer with structured parking integrated within the site plan.

### Neighborhood Retail

A small cluster of neighborhood retail will share the grocery store block; a small amount of surface parking will be provided behind this development in the center of the block.



Galvez Research Neighborhood, plan view.

### Tulane Avenue Mixed-Use

Medium-density, mixed-use redevelopment along Tulane Avenue will capitalize on the RPC Capital Improvement Plan for the roadway's streetscape improvements. Ground-floor retail will house neighborhood-serving businesses such as coffee shops, quick-serve eateries, dry cleaning and the like. Residential development above will be a combination of for-rent and for-sale products, with structured parking topped by private recreational amenities such as tennis courts or pools. In support of LEED ND principles, this development will include affordable housing units alongside and integrated with market-rate product.

### Neighborhood Residential Options

A variety of residential options should be provided within the neighborhood core, from apartments to townhomes to condominiums and duplexes. With a variety of rental and sale price points, the neighborhood will offer the widest range of housing options within the BioDistrict. Blocks are oriented around a central park or internal pedestrian greenways. Parking is provided within the architectural designs to minimize the presence of surface parking lots.

### Galvez Street Research & Development

Galvez Street is identified as the central spine for research & development (R&D)-oriented uses. These combined office/laboratory buildings would come on-line as the market demands, likely through private partnerships between the BioDistrict's major academic institutions and private developers. The buildings would house traditional medical offices, conference and research space, including wet and dry laboratories, and would focus on the 'bench to bedside' approach of moving clinical research into commercial production. Parking would be provided in adjacent structures.



### Proposed Redevelopment: Adaptive Re-Use Historic High School

The historic high school at Gravier and Miro Streets, most recently used to house radio stations WYLD and WBOK, is an important piece of neighborhood history. Now vacant, the structure will be retained and could house a variety of uses, identified as Innovation Place, such as retail, office, community center, daycare, small business incubator, or loft-style residential. The BioDistrict will assist interested developers in identifying grants and other funding sources that could be used to renovate this historic building.



Adaptive reuse of historic buildings have become popular for new high tech collaboration spaces such as “Galvanize” in Denver.

### Land Use, Aggregation & Zoning Land Use & Zoning

The City is currently in the process of drafting a new, user-friendly Comprehensive Zoning Ordinance (CZO). As of the writing of this document, future land use maps are complete and were adopted in August 2010. These maps will be the basis for the new zone districts, which are still under review by City Council and draft public review at this time.

Galvez Research Neighborhood uses are consistent with the future land use map, which identifies all blocks within the Galvez Research Neighborhood redevelopment area as Mixed-Use High Density.

Redevelopment within the Galvez Research Neighborhood is likely to be subject to Community Benefits Agreement requirements and Construction Impact Fee, which will be coordinated with the neighborhood on a project by project basis.



Galvez Research Neighborhood, bird's eye view, looking riverside. New urban grocer on Tulane Ave (pink) is in the bottom center of the image.

### Land Aggregation

Most of the blocks within the Galvez Research Neighborhood show parcelization typical of the City's older, denser areas. Lots are small and narrow, with as many as 30 or more parcels per block. Given this pattern, land aggregation will be an important issue for redevelopment of the area.

Another key consideration is the number of existing residences in the areas built in the traditional shotgun vernacular architectural style. The BioDistrict will work with the State Historic Preservation Organization (SHPO), property owners and homeowners to identify viable structures with historic value that merit relocation to new locations. This Plan suggests that these homes be relocated to vacant lots within Gert Town and Mid-City, in order to contribute to and support a historic, residential vernacular within these neighborhoods.

Galvez Research Neighborhood: Summary	
Hospital, SF	3,598,000
Academic, SF	722,000
Residential, DU	1,057
Retail, SF	65,000
R&D, SF	750,000
Office, SF	100,000
<b>TOTAL, SF</b>	<b>5,235,000</b>
<b>TOTAL, DU</b>	<b>1,057</b>



photo: cbsdenver.files.wordpress.com

Theaters are just one adaptive re-use that can bring new life to historic buildings such as the neighborhood's historic high school.

### Urban Design

For current and future urban dwellers, New Orleans offers a tremendous amount of choice. From the French Quarter to the Garden District to the Warehouse District, would-be renters and homeowners have a large selection of options to find a neighborhood and a dwelling that conform to their specific needs and taste. To be successful and build the critical mass that creates a 'neighborhood', Galvez Research Neighborhood must offer something different from existing stock, so that it offers an alternative rather than simply trying to compete on 'uneven ground' with already established neighborhoods. Urban design, public realm amenities and architectural style will play a critical role in defining this new Galvez Research Neighborhood's character and feel and distinguishing it from other popular redevelopment areas.

Residential products should be carefully matched to meet the needs of the neighborhood's expected residents; busy medical professionals for whom convenience and amenity are priorities. Pedestrian connectivity and walkability with adjacent medical and research interests should be intuitive and attractive. Neighborhood land use should include a wide variety of businesses and services designed to increase the social connection and interaction with the community. Uses might include quick-serve and sit-down restaurants, cafes, bistros, and convenience retail such as dry cleaning and small-format groceries.



Galvez Research Neighborhood, bird's eye view, looking along linear greenway towards central park.

## Parks & Public Realm

Designed with urban dwellers in mind, this new neighborhood will use a public park as a central organizing feature and 'urban oasis', offering a place for neighbors to meet and greet, walk their dogs, relax with a book or throw a Frisbee. At a half-block in size, the park is not intended to be used for large-scale active recreation, uses that will be accommodated nearby less than a mile away in the new Lafitte Greenway. The park is faced on all sides by residential development, providing a sense of community ownership, safety, and pride.

The neighborhood will also include a large urban tree nursery at its uptown edge, just south of Poydras Street. The nursery will supply container grown trees and shrubs to projects and streetscape projects throughout the BioDistrict and specifically to developments and streetscape improvements throughout the BioDistrict. In the near term, the nursery is envisioned as an important

community amenity providing educational, civic, and economic benefits, and the hub for several nurseries planned in the BioDistrict and across the City. The Urban Nursery should be done in conjunction with Tulane and Delgado Universities providing a teaching and research tool for Urban horticulture and business operation. The nursery should be planned in conjunction with a new urban storm water park needed for overall stormwater detention within the District as well as providing an educational best practices model as to how live with water in an urban setting. In the longer term, this area is envisioned for transition to a high-profile park with stormwater treatment 'amenity' as adjacent parcels are converted to high end R&D uses with prestigious Poydras Ave addresses and newer high rises on the I-10 side. This stormwater amenity will complement the planned Lafitte Greenway in form and function. More information on the proposed container nursery can be found in Appendix F.



Galvez Research Neighborhood, bird's eye view, looking lakeside. The Galvez Street research & development corridor is in the foreground of the image.

### Parking & Circulation

In order to promote higher density and preserve land for development, virtually all parking within the Galvez Research Neighborhood will be structured, with the exception of a very small amount of surface parking for the small retail complex at Tulane Avenue and Dorgenois Street. As described in the previous section, grocery store parking will be structured, as will office and commercial parking for the R&D buildings. Residential parking will be structured (Tulane Avenue development) or tuck-under (stacked flats and Poydras Street multi-family).

Redevelopment will maintain the existing street grid and connections to Poydras, with enhanced street cross-sections as described in the 'District-Wide Systems & Components' section of this Plan. Neighborhood streets will emphasize a balance of modes, with widened sidewalks and street tree plantings to accommodate the increased residential density of the area.

Key streets to receive major streetscape and infrastructure improvements will include Galvez, Poydras extension, Broad Street and interface with RPC's plans for Tulane Ave.



photo: ellenbloom.blogspot.com

This urban grocery store offers roof-top parking.

### Utilities

Residential and commercial communications will be key concerns for Galvez Research Neighborhood. With over 1000 new residential units, traffic on existing fiber optic lines will increase significantly, possibly reducing transmission speeds. Additional lines may be necessary, but would be installed by the service provider based on demand.

Individual institutions within the BioDistrict, including the LSU Health Sciences Center, Xavier University, Tulane University and the University of New Orleans, are already linked in to the Louisiana Optical Network Initiative (LONI). This state-of-the-art fiber optics network connects Louisiana and Mississippi research universities to each other and to the National LambdaRail. LONI could serve as either a framework or a model for an expanded system including the District's anticipated research and commercial interests. This will include a dark fiber network connection at 1515 Poydras Street, and a new HIPAA compliant encrypted WIFI system throughout the district.

With both residential and commercial communications upgrades, there is the potential that cost may be shared by private developers as a way to attract tenants/buyers, or could be financed through a public-private partnership between the developer, the BioDistrict and the utility.

Entergy also has plans underway for a new substation to provide power to UMC, VA and new developments within the Galvez Research Neighborhood.

## Sustainability

### Social

Higher density mixed use housing along Tulane and Poydras Avenues is modeled on an 'Ekoblox' concept which encourages sustainability constructed 3-4 story housing surrounded by shared, access-restricted green space; block-scale renewable energy, water and waste systems and other shared green infrastructure. Ekoblox can also include adaptable housing units that allow residents to adapt their space needs to their changing lifestyles over time including family-friendly units that can later be divided into smaller units and for-rent flats.

### Economic

The housing mix has been designed in line with LEED ND goals of providing housing at a variety of price points ranging from affordable housing to high end.



Example of a High Density 'Ekoblox' Scheme

### Environmental

The Galvez Research Neighborhood is intended to be a LEED ND-ready neighborhood. All green spaces in the neighborhood should be designed to include Low Impact Design (LID) strategies including bioswales along streets, rain gardens and cisterns on private parcels, and rainwater harvesting for building use to place the neighborhood as a premier water-wise neighborhood in the nation and to achieve designated water-oriented LEED ND priority credits for the New Orleans region.

Residential areas are targeted to achieve a 25 percent tree canopy at tree maturity and non-residential areas are targeted to achieve 15 percent tree canopy coverage at maturity in line with the urban forest canopy targets included in the 2030 master plan for New Orleans. Hurricane Katrina severely reduced the urban tree canopy, currently at 3.6 percent in the BioDistrict. Averaging residential and non-residential goals, an increase to 20 percent canopy would require the planting of approximately 10,000 additional trees within the BioDistrict alone.



Recently restored Joy Theater on Canal Street.



Xavier/Gert Town, street-level view on the uptown side of the Washington Avenue canal.

## Xavier/Gert Town

The Xavier / Gert Town redevelopment area focuses on creating a thoughtful, appropriately scaled academic-community interface between Xavier University and the historic Gert Town neighborhood. Looking to the future and evaluating its expansion needs, Xavier University is experiencing the limitations of its land-locked campus. The University already owns a number of parcels within Gert Town, and has started expanding into the neighborhood, most notably with its currently under construction Convocation Center and associated parking structure. This plan seeks to define locations and uses within the community which could accommodate future University expansion and at the same time offer benefits to neighborhood residents, including a common-use arts and exhibition space, community outreach office and continuing education facilities.

### Summary of Key Projects within the Xavier/Gert Town Area:

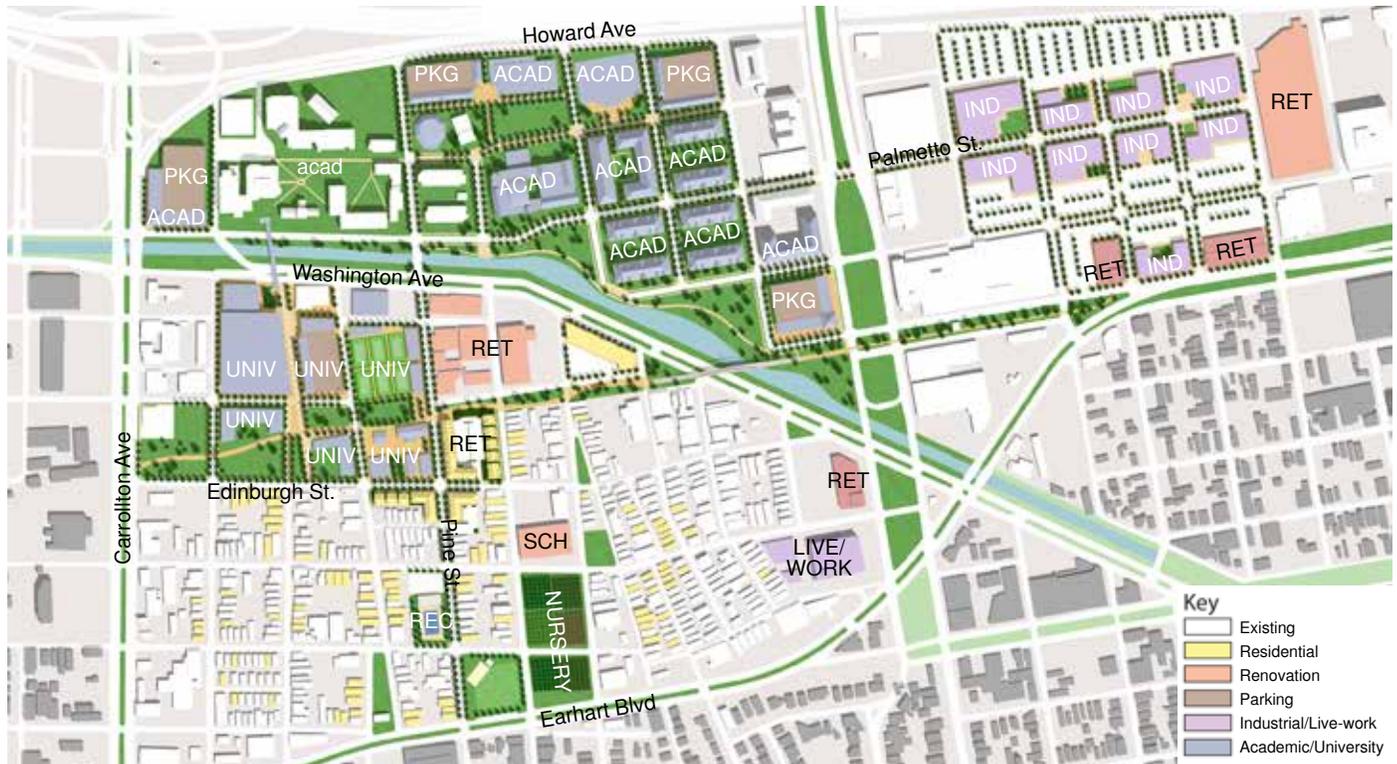
- Construct a new neighborhood pool
- Redevelop 4650 Washington Ave as a retail, office or manufacturing facility that encourages new employment opportunities for Gert Town residents
- Renovate or Reconstruct the Gert Town Elementary School

- Develop joint neighborhood and Xavier community outreach and education programs
- Define clear geographic land boundaries for Xavier Expansion
- Enhance the Washington Ave canal edge and corridor as a community amenity
- Provide a bike trail connection along the abandon railroad right-of-way to the Galvez Research Neighborhood and New UNC and XA
- Incentivize the Concrete Plant to Relocate
- Provide an Urban Nursery and Neighborhood Park for recreational and storm water management purpose.

### Proposed Redevelopment: New Buildings

#### Academic Expansion

As outlined in the Xavier University Master Plan, the majority of the university's classroom and laboratory expansion will take place north of Washington Avenue, within and adjacent to the existing core campus area. More mixed-use and community-oriented facilities will locate south of Washington Avenue, promoting a more permeable edge to the institution. These uses might include fine and performing arts, therapy, adult education and community and alumni outreach.



Xavier/Gert Town, plan view.

### University Tennis Center

A new cluster of tennis courts is also identified in the Xavier University Master Plan. Located south of Washington Avenue, this Action Plan recommends that the courts be made available by prior arrangement for community use.

### Mixed-Use Retail/Residential

This Action Plan identifies the intersection of Edinburg and Pine Streets as an important crossroads between University and neighborhood development. Retail and multi-family redevelopment should be concentrated on these four blocks, in order to define a small community center. The northwest corner of the intersection is anchored by the Xavier arts facility; the plan suggests ground-floor retail with residential units above for the remaining three corners.

### Residential Infill

Gert Town has a large number of vacant structures and lots. This Action Plan identifies these structures as opportunities for low-density residential infill, primarily single family and duplex dwellings. This infill approach is in keeping with the City's adopted future land use map.

As discussed in the preceding Galvez Research Neighborhood section of this report, as some key areas of the District transition to higher density residential and non-residential uses, it may be possible to relocate structurally sound single-family and duplex structures from other parts of the BioDistrict to the Gert Town neighborhood. Any relocations of this type would be evaluated to ensure that the structures' architecture would contribute to and enhance the existing neighborhood character.

### Public Pool

Residents have voiced a strong desire for the reconstruction of the Gert Town pool, damaged beyond repair during Hurricane Katrina. The pool's current site at the corner of Lowerline and Stroelitz Streets is within a logical expansion zone for Xavier University, blocks away from the neighborhood residents for whom it is designed. The plan recommends that the pool be reconstructed in a new location in the center of Gert Town, at the community's historic 'heart' of Pine and Olive Streets. The new pool will replace the heavily-deteriorated nursing home currently acting as a visual reminder of neighborhood decline, and offer close proximity to both the elementary school and park.



photo: blog.nola.com

The Gert Town pool, irreparably damaged by Hurricane Katrina, will be reconstructed in close proximity to the neighborhood center.

**Light Industrial Manufacturing District**

Immediately riverside of the Xavier/Gert Town redevelopment and included in the accompanying plan-view map, the light industrial manufacturing district will support the research and development activities of the greater BioDistrict. The light industrial area will offer large-format office and factory sites along a re-introduced Palmetto Street, with surface parking provided behind the new structures. Alternately, and depending on market demand, these spaces may also feed more established BioDistrict enterprises with flexible incubator, accelerator or live/work space for start-up enterprises. There is also the opportunity for retail uses fronting Earhart Boulevard.



photo: www.earthkidzusa.com

Community art spaces and programs are one way to integrate existing Xavier facilities with the adjacent Gert Town neighborhood.

**Proposed Redevelopment: Renovation & Expansion**

**Gert Town Elementary**

This Action Plan recommends the renovation or reconstruction of the Gert Town Elementary School, closed since Hurricane Katrina. If future structural evaluation determines the existing building to be unfit for use, a new school should be built on the same site.

**Xavier Arts Center**

This Action Plan recommends expansion of the University's new arts facility, located at the corner of Pine and Edinburgh Streets, to include additional community-based artist initiatives. Expanded space could include affordable artist housing, studio and exhibit spaces and would complement similar spaces planned for the Blue Plate redevelopment project, which is slated to give leasing preference to artists and provide residential, studio and exhibit space. Between these two projects, Gert Town has the potential to become a new artistic incubator, nurturing local artists and providing space for both established and aspiring artists. Examples of what arts-based development can contribute to community revitalization can be found in the Artspace projects in Seattle, New York, Los Angeles and Minneapolis; organizations like this one would be an excellent fit for the Xavier-Gert Town area.

Xavier / Gert Town: Summary	
Academic, SF	978,000
Residential, DU	115
Retail, SF	25,000
Lt Indus./Manuf.	750,000
<b>TOTAL, SF</b>	<b>1,753,000</b>
<b>TOTAL, DU</b>	<b>115</b>



Xavier/Gert Town, bird's eye view, looking riverside up the Washington Avenue canal.

## Land Use, Aggregation & Zoning

### Land Use & Zoning

The City is currently in the process of drafting a new, user-friendly Comprehensive Zoning Ordinance (CZO). As of the writing of this document, future land use maps are complete and were adopted in August 2010. These maps will be the basis for the new zone districts, which are still under review at this time by City Council and the broader public.

The Xavier / Gert Town redevelopment area falls within an area of mixed residential, commercial and light industrial zoning. University expansion to the east and south of the existing core campus will require significant rezoning to accommodate academic and student housing uses. This rezoning will take place at the request of individual property owners or a City councilperson, and is outside the sphere of responsibilities of BioDistrict New Orleans.

### Land Aggregation

Many of the parcels within Xavier's eastern expansion area are owned by a large number of single-parcel, private property owners. Disposition towards sale, price and phasing of these parcels will need to be a private negotiation between individual property owners and the University.



Xavier/Gert Town, bird's-eye view, looking riverside. Gert Town is in the bottom of the image.

City Assessor records indicate that the Gert Town pool property has been acquired by Xavier, supporting this Action Plan's recommendation for a new site. The site recommended for relocation is owned by a single entity, which also owns all but two of the neighboring parcels on that block.

The southern 'concrete plant' block is under single ownership and should be incentivized to relocate, while ownership of the northern block is split among multiple parties. As the nursery is seen as a long-term temporary use, up to 20 years or more, leasing may be an alternate option to outright purchase for these parcels. Availability of one or both of these parcels would be dependent on finding a suitable relocation site for active industrial uses, as well as funding for that move.

## Urban Design

Expansion of the Xavier University campus will follow the institution's own design guidelines and specific aesthetic standards. Within Gert Town, redevelopment and infill will be undertaken primarily on a parcel by parcel and owner by owner basis; new structures should follow City design guidelines and be of a scale and style in keeping with existing neighborhood fabric.



photo: artscouncilneworleans.org

Development and renovation within Gert Town should integrate with and enhance the existing neighborhood character. 2001 community mural.

## Parks & Public Realm

### Bike/Ped Greenway

Running diagonally through the northern portion of Gert Town, the former Illinois Central Railroad right-of-way offers the opportunity for development of a green pedestrian/bicycle corridor and linear park. Straddling the Xavier/Gert Town seam, a greenway project would be an excellent candidate for a public-private partnership between the University and the City. In such an arrangement, the corridor might be constructed and owned by the City, but maintained by the University; design, programming and use of the corridor would be shared by the campus and the community, with Xavier having the ability to use the space for special events and spillover outdoor programming, in exchange for maintenance services.

A neighborhood park located at the corner of Pine and Earhart Boulevard provides a much needed exterior green space for adjacent residents.



photo: www.proptek.com

A container nursery can provide economically grown plants for streetscape projects within the BioDistrict and the City at large.

### Container Nursery

Identified by the community as a visual and health concern, the existing concrete facility at Broadway and Forshey Streets would be relocated to another, more appropriate non-neighborhood location within the City. This relocation would require significant financial resources, including funds for site acquisition and mitigation, as well as additional, separate funds to procure a new site and build a new concrete facility. EPA grants may be one of the strongest potential sources of funding to pay for portions of this large undertaking.

Once the concrete facility is relocated, the two-block site would be converted to a community/City nursery, providing trees and shrubs for planting programs throughout the City. Plants would be grown in above-ground containers to minimize mitigation costs on the concrete plant site (e.g. capping of contaminated soils vs. complete removal). Introduction of the nursery and complementary programs held at the site would offer both educational and employment opportunities to neighborhood residents, high school, college and university students interested in horticulture, urban ecology and environmental related disciplines. More detailed information on the nursery concept can be found in Appendix F.

## Parking & Circulation

Minimal front setbacks and narrow right-of-way widths limit physical and operational modifications to the existing street grid, such as sidewalk widening or one-way to two-way conversion. The highest priority for pedestrian circulation is filling in gaps in the sidewalk system where no sidewalk exists. By necessity, sidewalk width and conditions (attached, detached) will vary.

Particular priority should be given to Pine and Edinburgh Streets, identified as the center of community revitalization and an important town-gown transition point. Lacking curb and sidewalk along the majority of its length, Edinburgh Street should be reconstructed to a minimum standard as illustrated in the cross-section in the preceding chapter. Where more width is available, the southern sidewalk should also be detached with a street tree planting zone between sidewalk and curb. Pine Street offers almost complete sidewalk connectivity in its current condition; upgrades should focus on filling in the few gaps that remain, replacing pavement in poor condition and introducing street trees.

The Action Plan recommends no changes to residential parking within Gert Town, most of which utilizes on-street parking. Within Xavier, the Action Plan recommends consolidation of existing surface lots into a few, strategically located parking structures in order to free more land for institutional development. The Action Plan also recommends that Howard Avenue, paralleling I-10, be connected between Pine and Short Streets, in order to enhance campus connectivity and offer a full campus 'loop' road.

## Utilities

The only utility of potential capacity concern is ultra high-speed internet access, depending on the evolving technological demands of Xavier University. Existing water, electric and gas systems have sufficient capacity to serve the uses and densities anticipated in the Action Plan. However, ongoing discussions with Entergy should continue regarding a CHP unit that could serve the entire BioDistrict.

## Sustainability

### Social

The Xavier / Gert Town neighborhood strategy emphasizes strengthening the connection between Gert Town and the Xavier campus through increased open space, new University facilities in Gert Town, innovative park and stormwater amenity/LID strategies along the Washington Avenue Canal, and enhancement of the existing historic Gert Town neighborhood fabric.

### Environmental

Non-residential buildings and new buildings on the Xavier campus and in the industrial area are encouraged to achieve a minimum LEED Silver certification, with at least one exemplar building achieving LEED Gold or Platinum. Rehabilitation of existing homes in Gert Town and maintaining the historic building character is a priority, as is assisting the community in accessing some of the existing and future energy savings programs.

The tree canopy target for this areas is 25 percent for residential areas (including the Xavier campus) and 15 percent for non-residential areas. It is recommended that the extensive parking areas in the industrial zone be enhanced with tree cover to help reduce the high urban heat island effect impact of these expansive areas of high heat absorbing surfaces.

The extensive rooftops in the industrial zone provide an outstanding opportunity for larger scale rooftop solar applications that could help brand the industrial zone as an 'eco-industrial' park.



Tulane Avenue/Canal Street development, street-level view looking riverside along Canal Street.

## Tulane Avenue/Canal Street

The Tulane Avenue/Canal Street redevelopment area focuses on integrating expansion of the Tulane University medical school and hospital into the surrounding urban fabric. The Action Plan aligns with the University's own Master Plan, and includes both mixed-use and residential uses as a way to provide for long-term, phased expansion of academic facilities and to support students and faculty.

### Summary of Key Projects within the Tulane Avenue/Canal Street Area:

- Locate the Math and Science High School in renovated and expanded structures on Tulane.
- Coordinate with Tulane on the expansion of their facilities and creation of a campus quad downtown.
- Support the removal of the Claiborne Ave freeway overpass and develop Claiborne as a grand boulevard.
- Support private sector redevelopment of the Jung Hotel as a mixed use of residential, retail, and extended stay hotel including a parking garage.
- Concentrate new residential development along Canal Street.
- Develop Cleveland Ave into a special street that could be shut down to traffic for festival type events.

## Proposed Redevelopment: New Buildings

### Mixed Use Office/Future Academic Expansion

The redevelopment's lakeside edge along Claiborne Avenue would be defined by three new mixed-use buildings offering potential tenants high visibility and quick cross-town access from Claiborne Avenue, as well as valuable real estate frontage. Pedestrian-friendly enhancements to Claiborne Avenue suggest ground-floor retail uses in these structures, with offices and flex space above. These buildings could also serve as classroom, faculty and administrative space as the adjacent universities continue to expand.



Tulane Avenue/Canal Street development, plan view.

**Residential**

New residential buildings along Canal Street’s downtown edge provides transition between Tulane University’s core academic/medical area and the Iberville Residential redevelopment, which will also provide a significant pool of mixed-income residential units. Higher density apartments and condominiums will be sited along Canal Street, transitioning to lower density townhome and stacked flat products along Iberville Street. Medium density units will park in private, attached parking structures with rooftop amenities such as gardens, plazas or pools, while stacked flats and townhomes will have tuck-under garage parking. As the market develops, additional residential mixed-use structures will front Canal Street lakeside of Claiborne Avenue; this extension of Canal Street development is likely to become more attractive if the elevated I-10 structure is removed.

**Medical Building**

A new infill medical building is added on Cleveland Avenue, facing the existing hospital and hospital parking.

**Academic Core**

A cluster of new academic and laboratory buildings will be arrayed around a central open space quad on both sides of Cleveland Avenue, consistent with the Tulane University Master Plan.



The redeveloped Iberville public housing will provide medium-density residential units, with surface parking internal to each block. Community recreation facilities will also be provided. Image courtesy of JCH Development.

## Proposed Redevelopment: Adaptive Re-Use

### Math & Science High School

Two buildings, one historic and one contemporary, on the northwest corner of Tulane Avenue & Villere Street will be renovated to serve as a new Math & Science Magnet High School. A new addition to the rear of the buildings will provide additional space for an auditorium, gymnasium and cafeteria.

The school is sited to create synergy with the nearby higher-education institutions, offering the opportunity for students to take classes and internships at LSU, Tulane University and Delgado Community College.

### Mixed-use Office/Future Academic Expansion

The two buildings occupying the eastern half of the block bounded by Canal Street and Claiborne Avenue, and Robertson and Cleveland Streets will be renovated to serve as mixed-use office. The southern building is now partially occupied by Tulane Medical School. Tulane will continue to expand into the building as they move out of leased space at 1555 Poydras for long term education, medical training and administrative offices. The 1555 Poydras building is proposed for a mixed use residential development with ground floor retail. Further, the Jung Hotel will be converted to mixed use residential, retail and extended stay hotel, which will also include a parking garage. Unoccupied space in the 1600 Canal Street building will be renovated to serve as mixed-use/office, with the potential for future conversion to academic classrooms or faculty offices. Other potential uses for this building include an accelerator building for companies that graduate from NOBIC or a home for a facility similar to the Centre of the Cell concept--an interactive science education center located within a medical research laboratory in London.



Tulane Ave/Canal St. development, bird's eye view, looking uptown along Claiborne Avenue (image right).



photo: www.centredthecell.org

An interactive exhibit at the Center of the Cell education center in London, England.



photo: www.leviatangames.com

Pedestrian malls like this one in Boulder, CO create highly detailed, human-scaled environments.



Mixed-use residential development will offer ground-level retail space.



Tulane Avenue/Canal Street development, bird's eye view, looking downtown. Claiborne Avenue is at image left.

## Land Use, Aggregation & Zoning

### Land Use & Zoning

The City is currently in the process of drafting a new, user-friendly Comprehensive Zoning Ordinance (CZO). As of the writing of this document, future land use maps are complete and were adopted in August 2010. These maps will be the basis for the new zone districts, which are still under review at this time by City Council and the broader public.

The Tulane Avenue/Canal Street redevelopment area falls wholly within existing CBD and CBD-2 zoning. Proposed redevelopment is consistent with this zone district.

On the future land use map, the blocks immediately north and south of Canal Street (between Claiborne Avenue and Loyola Street, and between Iberville and Cleveland Streets) are designated as 'Downtown Mixed Use.' Blocks between Tulane Avenue and Cleveland Street are designated as 'Mixed-Use Health/Life Sciences Neighborhood.' The single block lakeside of Claiborne Avenue included within this area is 'Mixed-Use Low Density.'

### Land Aggregation

Many of the blocks within the Tulane Avenue/Canal Street area have multiple owners, with as many as 15 or more parcels per block. Land aggregation will be a significant issue to move this portion of the plan forward. Property speculation could also become an issue, and may be particularly sensitive to whether or not the I-10 viaduct over Claiborne Avenue is removed, and if so, if a streetcar is introduced in this corridor.

Tulane Ave/Canal St: Summary	
Academic, SF	1,100,000
Residential, DU	853
Retail, SF	115,000
<b>TOTAL, SF</b>	<b>1,215,000</b>
<b>TOTAL, DU</b>	<b>853</b>



Including pedestrian-oriented uses on the ground floor of buildings is an important element of creating a human-scaled urban environment.

### Urban Design

Balancing density and human scale are priorities for this development area. As part of both the downtown central business and a major university campus, new buildings should be a minimum of four to five stories. In order to maintain a pedestrian scale, however, those buildings should maintain active ground floor uses; often a challenging directive in concentrated academic and medical areas. Cafeterias, fitness centers, bookstores and non-sensitive reception areas are a few of the uses that can provide the level of ground floor activation necessary for a vibrant street scene.

In addition to the already-established pedestrian corridors of Canal Street and Tulane Avenue, Cleveland Avenue will also take on an important role for circulation within the academic/mixed-use area and as a primary, direct connection between the medical school and University Medical Center (UMC) on the opposite side of Claiborne Avenue. Cleveland Avenue will remain open to vehicles, but will receive pedestrian-level enhancements and traffic calming modifications emphasizing its use as a major spine within the downtown Tulane University complex.



In addition to providing passive and active recreational space, public parks can serve as signature civic centerpieces.

### Parks & Public Realm

Two new parks will act as the central organizing feature of Tulane's academic expansion. Facing each other across the new Cleveland Avenue pedestrian spine, the parks will provide much-needed public open space within this area of increased urban density. Each park will be approximately a half-acre in size, and will be designed specifically with the needs of students (of both Tulane University and the math & science high school), staff and faculty in mind. The parks may include hardscape/plaza elements, but should be designed primarily as passive 'gardens' within the dense, hardscape urban core.



Even existing parking structures can be retrofit with public art and other facade treatments to improve the street facade.

### Parking & Circulation

Two significant changes in vehicular circulation in this area are the removal of the I-10 on- and off-ramps on either side of Claiborne, at Tulane and Cleveland Avenues, respectively. The removal of these ramps allows a much larger portion of the adjacent land to become available for development; the Action Plan recommends the removal of these ramps regardless of the ultimate decision to eliminate or retain the I-10 overpass.

This Action Plan emphasizes the importance of maintaining the existing street grid, in order to maximize multi-modal connectivity and urban character and scale. On this point, the Action Plan differs from the Tulane University Master Plan, which recommends the closure of Cleveland Avenue as a pedestrian promenade. This Action Plan focuses instead on public realm enhancements to create a more balanced multi-modal environment.

In order to promote increased density, no surface parking is provided in the Action Plan. Residential buildings are self-parked, while office, academic and medical users will park in existing or new parking structures. Location for two new parking structures, one on each side of Canal Street, have been identified and will need to be verified with a comprehensive parking utilization and demand study.

### Utilities

Concerns within the academic-heavy Tulane Avenue/ Canal Street area are similar to those in the Galvez Research Neighborhood. With 550-600 new residential units, many expected to be used by students, traffic on existing fiber optic lines will increase significantly, possibly reducing transmission speeds. Additional lines may be necessary, but would be installed by the service provider based on demand.

Academic and medical uses will require ultra-high speed internet connection. Like residential service, this commercial connection will be driven by demand and installed by the service provider.

### Sustainability

#### Social

The new Math and Science High School will provide focused learning opportunities for students interested in entering the biosciences and digital media fields, both of which are identified as major initiatives of the City and the BioDistrict. The school's location adjacent to Tulane University will provide additional opportunities for advanced classes and learning opportunities.

#### Economic

Mixed-use commercial redevelopment along Claiborne Avenue will bring additional businesses, restaurants and shopping to one of the District's main spines.

#### Environmental

New development and adaptive redevelopment within the Tulane Avenue/Canal Street area should seek a minimum of LEED Silver certification for all non-residential buildings. Multi-building development should also explore the principles of LEED neighborhood design (LEED ND).

A 15 percent tree canopy target and rainwater harvest and reuse should be encouraged to also help manage stormwater. LEED certification and/or energy efficiency measures in buildings are encouraged and rooftop solar should also be considered.



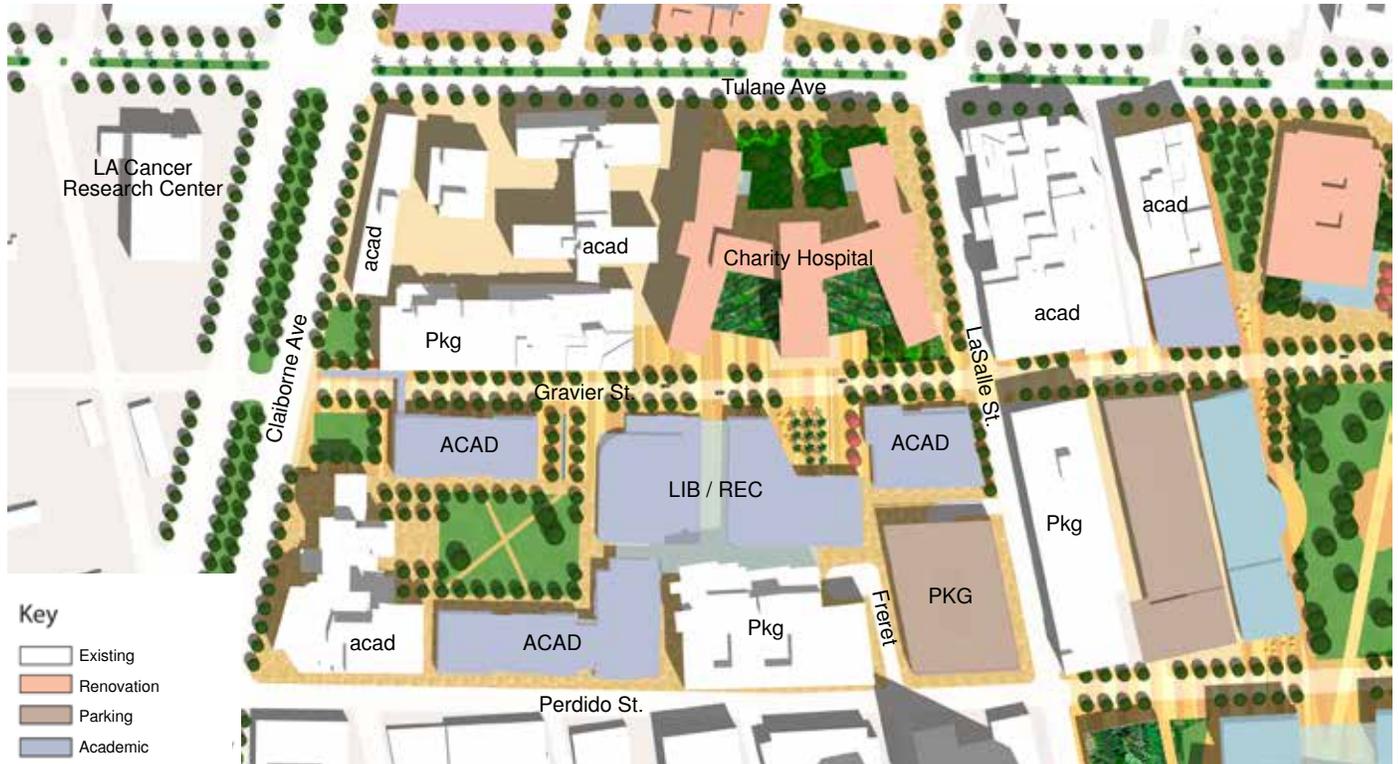
Downtown Health Campus, street-level view at Charity Hospital, looking lakeside up Gravier Street

## Downtown Health Campus

The City of New Orleans boasts nine colleges and universities that together offer a spectrum of comprehensive health and medical programs that culminate in associate, bachelor and post graduate academic degrees. The Downtown Health Campus development node is envisioned as a nexus for southern Louisiana's health and medical training, education and research; an inter-institutional, cross-disciplinary environment with cutting-edge classrooms, simulation laboratories, and technology made possible through development by individual institutions and/or the pooled resources of multiple colleges and universities. The Downtown Health Campus is not meant to supplant individual institutions, but rather create a 21st Century learning landscape that maximizes real estate and facility assets, and creates opportunities for development of typically cost-prohibitive support and administrative facilities, such as learning commons/libraries, recreation and student centers, auditoriums and student housing.

Individual institutions will have the choice and ability to structure their presence on the campus, using it to complement their primary learning spaces or as the main base for entire programs. While this cutting edge campus would benefit all participating institutions, the shared-facility concept will be especially helpful in training the region's critical supply of allied health care professional, which are essential to any thriving 21st Century urban center: In the U.S. over 60% of health care is provided by allied health care professionals. With two new state-of-the-art medical centers (hospitals) coming on-line within the next 4 to 6 years, it is essential that the New Orleans region meet this workforce demand from within, rather than import the needed professionals from Houston, Atlanta, or other major metropolitan areas.

BioDistrict New Orleans would act as a facilitating agency to assist in the formation of institutional partnerships, but actual development would be guided and undertaken by the institutions themselves. A model for this type of



Downtown Health Campus, plan view.

cooperative, multi-institutional campus development is the 127-acre Auraria Higher Education Campus in downtown Denver, Colorado, home to the University of Colorado at Denver, Community College of Denver and Metropolitan State College of Denver, with a combined student population of over 64,000.

Lastly, the creation of a shared campus, such as Auraria, will have a dramatic cultural and economic short- and long-term impact on the City and especially its Downtown Business District. The addition of numerous students, faculty and staff will increase activity and retail opportunities in the urban core and create a critical educational destination and anchor for New Orleans, accessible to all citizens by transit.

#### Summary of Key Projects within the Downtown Health Campus

- Expand Delgado facilities around a new urban quad along Gravier and Perdido Street
- Create shared academic recreation and research amenities for all downtown academic institutions
- Develop Gravier as a special events street that can regularly be closed for community and academic events

#### Proposed Redevelopment: Catalytic Project Charity Hospital

The renovation of Charity Hospital will become a reality only through inter-institutional cooperation and commitment over many years. The Downtown Health Campus development node proposes the renovation and re-use of one of the City's downtown icons, Charity Hospital. Charity Hospital was declared structurally sound after Hurricane Katrina, although significant environmental remediation will be necessary before the facility can be occupied. Currently vacant and with no definitive plans for reuse by the State, and only preliminary interest by the city to use as City Hall, the Action Plan envisions the building as a new mixed-use hub, with shared education facilities such as auditoriums, conference and meeting rooms, cultural centers, retail and restaurants on the first two floors, several floors of offices and classrooms above, and top floors occupied by residential life housing, support services, kitchens and computer labs. Although the building's floor-to-floor height would not accommodate state-of-the-art wet laboratories, other uses such as speech, physical therapy,



Downtown Health Campus, bird's-eye view, looking lakeside up Gravier Street.

and computer laboratories can be accommodated without compromising quality of the learning experience and environment.

In order to better address Gravier Street, the existing ramping at the building's south façade would be removed and the ground-level street interface redesigned as a pedestrian-friendly connection to other Downtown Health buildings across the street. The low two-story buildings between the Hospital's three central towers could become atriums or developed as 'green' rooftop gardens; depending upon structural loads, these spaces could be occupiable gardens or simple visual amenities.

Charity's main entrance on Tulane Avenue would be opened to the street through the removal of the covered walkways connecting the original gatehouse structures to the side towers. The gatehouses would remain and become central features of a new public plaza linking the new Charity to the public realm.

In addition, later additions to the building would be evaluated, with non-essential elements removed and essential additions—such as the external fire stairs—redesigned to better compliment this iconic, important piece of New Orleans' architectural and cultural history.



An atrium like this one at Bellsouth Lindbergh Center in Atlanta provides covered pedestrian circulation and doubles as a gathering space.

Photo: Atlanta. www.aisc.org

## Proposed Redevelopment: Other New Buildings

### Delgado Classroom & Laboratory Building

Delgado Community College has identified an immediate need and funding for physical expansion of its Charity School of Nursing facilities. In order to maximize interface with their existing building on the corner of Claiborne Avenue and Perdido Street, the Action Plan shows two potential locations for a new classroom and lab building. The Claiborne Avenue/Gravier Street intersection location could be built without significant demolition of the former VA Medical Center facilities, although some lands would need to be acquired, or deeded to Delgado. The Perdido Street location would require demolition of the existing, vacant VA Medical Center, but would offer the opportunity to create a central outdoor space linking existing and future buildings. This outdoor space could also serve as an occupiable outdoor campus quad, a much-needed amenity within the urban environment.



Downtown Health Campus, bird's-eye view, looking riverside side up Perdido Street.

### Student Union, Recreation Center & Library

Located in the center of the new Downtown Health Campus, two new buildings will house student support services such as a learning commons/library, student union/center, bookstore, multi-screen cinema, auditorium/performance venue and recreation center. The buildings will be joined by a central atrium gathering space connecting them to each other and to the existing, re-used VA parking structure. It is envisioned that these modern facilities would be accessible to all students, faculty, staff and alumni of participating institutions.

### Additional Classroom/Laboratory Building

An additional building site may be available on the corner of Gravier and LaSalle Streets, currently the site of Charity's physical plant. If this function is relocated or reconfigured to require less space, this site would likely be used as laboratory, classroom and 'flex' space.

### Parking Deck

Depending upon a complete parking study, including current utilization and anticipated mode split for the new Downtown Health Campus, a new parking structure may be required. This Action Plan locates a new deck on the corner of Perdido and LaSalle Streets, in order to consolidate this non-active, auto-oriented use with other already-existing parking uses.



Reuse of existing buildings, often in very different formats, lends richness and interest to the urban environment.

## Land Use, Aggregation & Zoning

### Land Use & Zoning

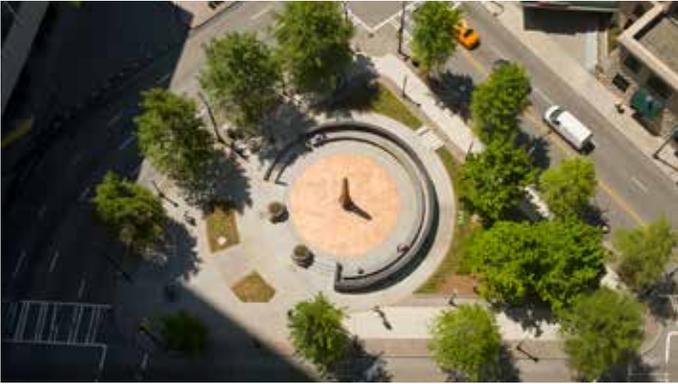
The City is currently in process of drafting a new, user-friendly place-based Comprehensive Zoning Ordinance (CZO). As of the writing of this document, future land use maps are complete and were adopted in August 2010. These maps will be the basis for the new zone districts, which are still under review at this time by City Council and the broader public.

The Downtown Health Campus redevelopment node falls wholly within existing CBD-2 zoning. Proposed redevelopment is consistent with this zone district.

On the future land use map, the entire Downtown Health Campus area is designated as 'Mixed-Use Health/Life Sciences Neighborhood,' which is consistent with the proposed uses.

### Land Aggregation

All land within the proposed Downtown Health Campus is owned by federal, state or City government, and for this reason, aggregation of land should not pose a barrier to redevelopment. The BioDistrict should lead the three government entities in achieving consensus on the importance of creating a downtown higher educational hub that can serve all New Orleans. These entities should also designate the BioDistrict, with its unique P3 capabilities, as the lead agency to facilitate the development, construction and management of the concept.



Small urban spaces can act as visual amenities, when viewed from building interiors, as well as on-the-ground gathering places.

### Urban Design

Gravier Street will act as the campus’s central pedestrian spine, and will be redesigned with pedestrian-level enhancements that might include special paving, widened sidewalks, street trees, special plantings, furnishings such as benches and trash receptacles, and pedestrian-scale lighting. Removable bollards will allow street closure from mid-block (entrances to the existing LSU parking structure would remain accessible) to LaSalle Street. Plaza and public spaces adjacent to Charity Hospital and the new student union will be designed a cohesive whole, in order to stitch the two ‘sides’ of the campus together.

As an urban campus, buildings should be sited with minimum front setback, in order to approach the public realm and provide ‘walls’ to the public space. Parks and plazas interior to the block should be visually and physically accessible from the street, without gates or other barriers, in order to emphasize their function as public open space.



Even small spaces can provide valuable spaces for students to meet, chat and study on urban campuses.

### Parks & Public Realm

The design of the public realm is critical in creating a cohesive character throughout the campus. It should communicate to visitor and daily user that this is an academic, campus environment, but also an integrated part of the urban context. The campus uses public space as both an organizing feature, as in the Delgado/Student Union park and plaza, as well as a gateway statement, as at the Tulane Avenue façade of Charity Hospital. In addition to these occupiable public spaces, students, staff and faculty will also enjoy enhanced pedestrian corridors connecting parking, academics and services.

Downtown Health Campus: Summary	
Academic, SF	855,000
Retail, SF	5,000
<b>TOTAL, SF</b>	<b>860,000</b>



With innovative architecture and surface treatments, even parking structures can add interest to the public realm.

### Parking & Circulation

All parking for the Downtown Health Campus will be contained within parking structures. The existing VA Medical Center parking deck will be reused and will provide enclosed, at-grade connection to adjacent student services and academic buildings.

If additional parking is needed, it is recommended that a new structure be sited at LaSalle and Perdido Streets, in order to minimize vehicular traffic along Gravier Street, envisioned as the Campus's central pedestrian-oriented spine and anticipated to have a high level of pedestrian flow back-and-forth between both sides of the street.

Gravier Street will be redesigned to allow for periodic special-event closures such as book and street fairs; vehicles could be restricted from mid-block to LaSalle Street, in order to ensure uninterrupted access to the existing parking structure at the corner of Gravier Street and Claiborne Avenue.

At campus build-out and in order to create a more pedestrian-friendly, cohesive environment, Freret Street will be closed and act solely as access to the VA and Perdido parking structures.

### Utilities

There are no outstanding utility concerns with the Downtown Health Campus, although uses of the Charity Hospital renovation may require upgrades to fiber optic and ultra high-speed internet.



In a pedestrian-focused environment, parking structures should have active, pedestrian scale design at the ground floor.

### Sustainability

#### Social

The Downtown Health Campus seeks to fill a pressing social need for technically-oriented workforce development within the biosciences sector and the City at large. Graduates can expect to find desirable, well-paying employment upon graduation.

By creating new life and purpose for the Charity Hospital conflict, a New Orleans landmark with emotional significance to a large number of City residents, the Downtown Health Campus will be a key element of downtown revitalization and a strong signal that the city is moving forward.

#### Economic

The development of the Downtown Health Campus will assist in business recruitment by ensuring companies considering relocation to the BioDistrict that an educated workforce is available to support their activities.

#### Environmental

Sustainability strategies within the Downtown Health Campus focuses on high performance measures including encouraging a minimum of LEED Silver certification for all non-residential buildings.

Anticipating a higher density of development, the Downtown Health Campus is an excellent candidate for green roofs and greenery on building facades. A 15 percent tree canopy target applies to this area, and future detailed planning should explore possibilities for rainwater capture, reuse, and other Low Impact Design (LID) features (see Appendix E).



Civic Center, street-level view from Loyola Ave looking toward expanded City Hall.

## Civic Center

Both City Hall and the City of New Orleans Civil District Courts are in need of additional space. The Civic Center redevelopment area seeks to retain the synergy and critical mass of having these two civic functions close to each other, and to capitalize on their expansion as a catalyst for redevelopment in and around Duncan Plaza. The redevelopment of the Civic Center while not directly tied to the enhancement of the healthcare/bioscience industry is a critical part of the District Planning. The appropriate siting of these civic facilities serves as an important anchor while allowing for enough remaining area to fully develop the Downtown Health Campus that is so critical to the underlining mission of economic development.

There exists an immediate need to accomplish this goal from an operational standpoint as both of the existing buildings require a major renovation or update. Additionally this needs to be done within a capital and operating cost structure that the City can manage. Currently the City does not pay rent and has indicated that it is unlikely to incur any rent expense in

the foreseeable future. While some argue the costs could be offset by the sale of leasing of the current Civic Complex there doesn't exist a favorable market for new construction.

### Summary of Key Projects within the Civic Center Area:

- Expand and renovate City Hall in its current location.
- Relocate Civil District Courts to a new location on Duncan Park.
- Redesign Duncan Park for the TriCentennial as a new 21st century gathering spot for New Orleanians and the World demonstrating stormwater management design and functionality.
- The State and BioDistrict should seek an open RFP for the redevelopment of Charity Hospital.



Civic Center, plan view.

## Proposed Redevelopment: Catalytic Projects

### City Hall

The current City Hall/Courts site is not large enough to accommodate horizontal expansion of both facilities. When it was built, City Hall was very intentionally sited to serve as an important view terminus as Loyola Avenue turns and comes into the downtown core while maintaining a prestigious Poydras Street business location. For this reason, City Hall is expanded on its current site, while the municipal courts building moves to a new, adjacent site on Duncan Plaza.

The Action Plan preserves and enhances the important linear relationship between City Hall and Loyola Avenue by creating a grand atrium as the building's new downtown façade. This atrium will provide an enclosed connection between the existing and future wings of City Hall, while also mitigating the need to exactly mirror the architecture or orientation of the existing building. Occupying approximately the same footprint as the existing City Hall, the height of the new wings can be adjusted to provide varying amounts of square footage; built to the same height as the current building, the new wings would approximately double existing space.

### Civil District Courts Building

The Civil District courts are moved to a new building on the lakeside edge of Duncan Plaza, with a public structure for both the courts and the City Hall directly behind the new courts building. This development site is critical to revitalization of the park, which currently suffers from a lack of activity and sense of enclosure. The courts' primary entry will be on Duncan Plaza, with secondary access from the parking structure.

## Proposed Redevelopment: Other New Buildings

### Cultural, Flex Commercial

The construction of a new Civil District courts building and public parking deck makes the sites on either side of City Hall available for redevelopment. A new iconic civic or cultural building occupies the riverside portion of the site; a museum, cultural center, or complementary civic use would be a good match for this site. The lakeside portion of the block is occupied by a new flexible-use tower, with active ground floor uses. An attached parking structure provides space for rooftop amenities such as a small private park green roof or even alternative energy farming.



Civic Center, bird's-eye view, looking downtown across Duncan Plaza.



An atrium can join old and new buildings as well as historic and contemporary architecture, as at the Denver City Hall.

### University Expansion, Library Renovation

On the downtown side of the Civic Center node, Tulane University's Health & Environmental Research facility, the J. Bennett Johnston Building, is also in need of expansion. The vacant, damaged Warwick Hotel is removed to make way for this addition, bringing another institutional presence to the park's edge. With the removal of the Warwick, the New Orleans public library is no longer partially 'hidden' behind the building, and can now establish a park-edge presence via a new main entry remodel/addition.

Civic Center:		Summary
Academic, SF		60,000
Retail, SF		10,000
Civic, SF		392,500
<b>TOTAL, SF</b>		<b>462,500</b>

### Land Use, Aggregation & Zoning

The City is currently in process of drafting a new, user-friendly Comprehensive Zoning Ordinance (CZO). As of the writing of this document, future land use maps are complete and were adopted in August 2010. These maps will be the basis for the new zone districts, which are still under review at this time by City Council.

The Civic Center redevelopment node falls wholly within existing CBD-2 zoning. Proposed redevelopment is consistent with this zone district.

On the future land use map, the City Hall and the Civil District courts block is designated as 'Downtown Mixed Use', the Duncan Plaza and library sites are designated 'Parkland and Open Space', and the rest of the area is 'Mixed-Use Health/Life Sciences Neighborhood.'

Some parcel subdivision and aggregation may be necessary for redevelopment of the area. The City Hall block, owned in its entirety by the City of New Orleans, may require subdivision in order to allow private development. Expansion of Tulane's J. Bennett Johnston Building will require portions of two parcels, one owned by the City (the land between the existing Tulane building and the Warwick hotel) and one owned by the Warwick Corporation (hotel site). The site of the new public parking structure and municipal courts building are not City-owned, and would also need to be acquired.



Civic Center, bird's eye view, looking uptown across Duncan Plaza to the new City Hall atrium and wings.

### Urban Design

As noted, the revitalization of Duncan Plaza is a primary goal of the Civic Center redevelopment node. Building placement and design should support this goal by promoting pedestrian scale, interest and activity in and around the park. Existing large mature trees on site should be relocated to provide shade and frame important views. Buildings should be set close to the street, providing a sense of enclosure and a defined edge to the park. New structure and renovations such as the library should also site primary entrances on the park.

As a node of civic activities, the redevelopment area will act in many ways as a 'front door' to the City. In place of surface parking lots, buildings should showcase entry plazas and features appropriate to a city of New Orleans' stature. A new half-block plaza on Poydras anchors City Hall as well as the adjacent redevelopment projects; surface parking is relocated and consolidated in the public parking deck at the rear of the new municipal courts building. Parking decks should be designed with active ground floor uses, or with enhanced façade design features (such as murals, artwork, pedestrian-scale detailing, street tree plantings) on the bottom 20-30 feet, minimum.



Duncan Plaza should be designed to provide space for both large (photo center) and small group (photo right) activities.

### Parks & Public Realm

Although it is beyond the scope of this planning study to provide detailed redesign of Duncan Plaza, the park should be redesigned to meet some general aesthetic and functional parameters. The park should be a flexible, multi-use space that can accommodate both small and large public gatherings. Topography and plantings should be carefully considered in supporting the multi-purpose nature of the space. The park should also maintain the important visual connection between Loyola Avenue and City Hall, with the city building as a formal view terminus. Design should also seek to provide some sense of enclosure at the park's riverside edge, the only side of the park without direct building frontage. Formal plantings, even permanent or semi-permanent shelters, follies or park structures are examples of how this goal might be achieved.



'Festival' streets can be closed for special events, and create a continuous pedestrian environment from sidewalk to street.

### Parking & Circulation

Surface parking is completely removed from the Civic Center node and is replaced in a public parking structure. The existing City Hall parking structure, although designed with a degree of architectural interest on its street face, is not an appropriate frontage for Poydras Street, the City's main business address. This structure is also removed. Dedicated, private parking for the new commercial tower is provided in a new parking structure fronting LaSalle and Perdido Streets.

Perdido and Gravier Streets are reconstructed to act as festival outflow for Duncan Plaza, with removable bollards at LaSalle Street and Loyola Avenue offering the ability to close the streets to vehicular circulation for special events. Reconstructed with enhanced and/or unit paving, surface materials emphasize the pedestrian-mall character of these two streets.

### Utilities

There are no key area specific utility concerns for the Civic Center area.



Flexibility is key to great public spaces. Here, a programmable, at-grade fountain can turn into a dry, public plaza.

### Sustainability

#### Social

The Civic Center targets social sustainability by providing a flexible public gathering space that can be used for public gatherings, both formal and informal.

The Civic Center also promotes reinvestment in public resources such as the library and productive expansion of public-institutions providing public benefit such as Tulane University.

#### Economic

The Civic Center invites the integration of new economic activity into the civic core. Introduction of new cultural institutions or commercial buildings will provide additional patrons for local businesses.

#### Environmental

Sustainability strategies within the Civic Center focus on high performance measures including encouraging a minimum of LEED Silver certification for all new municipal buildings. Whether through the LEED system or not, all new buildings and renovations should focus on energy and water use efficiency and Low Impact Design (LID) measures should be incorporated to building and site design.

Tree canopy target within this development area is 15 percent, as are bike and pedestrian friendly streetscapes.

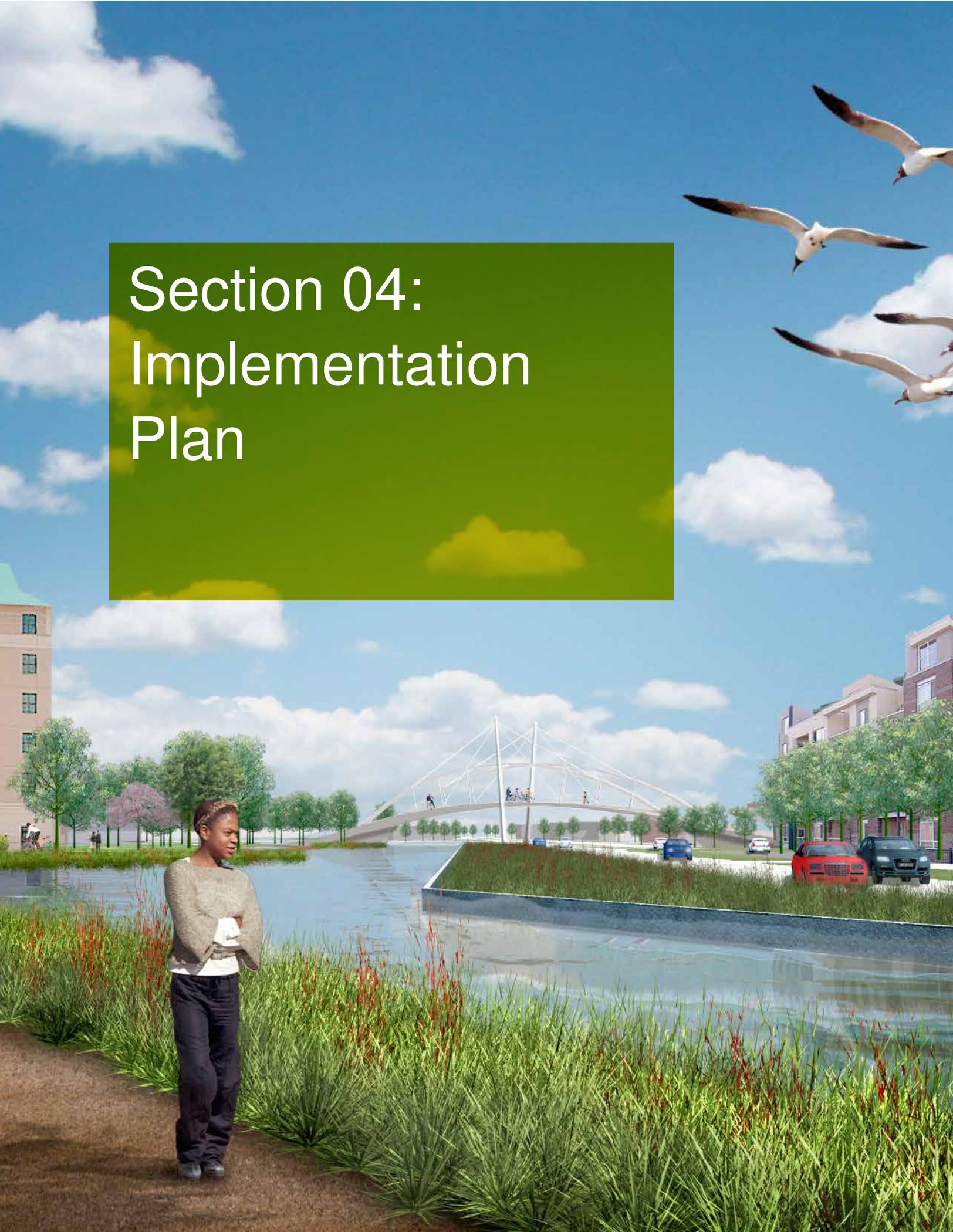
Key	Key Development Area	Land Use, SF							
		Hospital, SF	Acad, SF	Res, DU	Ret, SF	R&D, SF	Ofc, SF	Lt Ind, SF	Civic, SF
A	Galvez Research Neighborhood	3,598,000	722,000	1,057	65,000	750,000	100,000	0	0
	<i>Residential Mixed-Use</i>								
Key Elements	<i>R &amp; D / Incubator Space</i> <i>Stormwater Park / Nursery</i>								
B	Xavier / Gert Town	0	978,000	115	25,000	0	0	750,000	0
	<i>Community Infill</i>								
Key Elements	<i>Shared Institutional/Neighborhood Resources</i> <i>Light Industrial</i>								
C	Tulane Avenue / Canal Street	0	1,100,000	853	115,000	0	0	0	0
	<i>Math and Science High School</i>								
Key Elements	<i>Academic Expansion</i> <i>Residential Mixed-Use</i>								
D	Downtown Health Campus	0	855,000	0	5,000	0	0	0	0
	<i>Academic Expansion</i>								
Key Elements	<i>Multi-Institutional Shared Services</i> <i>Renovated Charity Hospital</i>								
E	Civic Center	0	60,000	0	10,000	0	0	0	392,500
	<i>New City Hall and Municipal Courts</i>								
Key Elements	<i>Renovated Park and Festival Street</i> <i>Museum / Cultural Facility Sites</i>								
<b>Development Totals</b>		<b>3,598,000</b>	<b>3,715,000</b>	<b>2,025</b>	<b>220,000</b>	<b>750,000</b>	<b>100,000</b>	<b>750,000</b>	<b>392,500</b>

### Summary Development Numbers

In total, the proposed BioDistrict New Orleans Action Plan plan contains over 2000 new housing units and almost 11.2 million Sq. Ft. of new development. Additional office, retail and residential space will come on line through adaptive re-use of existing structures, most notably the Charity Hospital structure.

Implementation will be developer-driven and largely privately financed, responding to general market demand or to the specifications of a particular anchor tenant or user. The BioDistrict will seek to facilitate catalytic relationships between and to match potential investors with properties that suit their needs. The BioDistrict will also seek to direct development, wherever and whenever it does occur, to concentrated areas in order to create critical mass and energy within discrete areas of the District.

# Section 04: Implementation Plan





## Action Plan Implementation

A plan is only a paper document, until committed and visionary individuals embrace the plan and transform it into built reality. The implementation strategy summarized in this section is designed to help BioDistrict New Orleans turn strategic vision into built projects bringing new jobs, new economic vitality, new residents and new buildings into the heart of New Orleans. This Action Plan outlines a clear, step-by-step route to economic and physical implementation of the BioDistrict.

The BioDistrict faces many challenges, chief among them the still-evident physical and psychological impacts of Hurricane Katrina. Significant portions of the BioDistrict's physical infrastructure are in need of renovation to bring them up to minimum standards, while other portions of the system need to be upgraded to accommodate the type and scope of development envisioned for the District. Another significant challenge is the fierce competition in the biosciences field, with cities, states and nations vying against each other to attract a critical mass of these economic engine-type industries. Lastly, stronger collaboration, and communication between the BioDistrict, the City of New Orleans, leaders of the city's higher education institutions and the business community must occur.

The BioDistrict must capitalize on its strong advantages, among them a consortium of strongly established medical institutions and hospitals, a rich and distinct culture, rail adjacency, and a recovering, highly educated and entrepreneurial population. Significant reinvestment is currently occurring or has recently been completed for the BioDistrict, including the VA Medical complex, the University Medical Center (UMC), the new Cancer Center, the BioInnovation Center and a new Justice Complex.



New Orleans BioInnovation Center: architectural rendering (top), under construction (middle) and completed (bottom). This R&D incubator space in the Tulane Avenue / Canal Street development area opened in 2011.

## Laying the Groundwork

The actions outlined in this Strategic Action Plan will be carried out over the next 20 years by a variety of public and private entities. Some of these action items are clear and straight-forward, while others will require multiple agency and public private partnerships- as well as a great deal of time - to implement. Regardless of these factors, however, all of these actions are realistic and achievable if the right parties work together.

The BioDistrict, its partner agencies, organizations and institutions must all work together to share the responsibility and implementation of this plan. Moving forward, the BioDistrict and its partners must continue to:

- Include and engage leadership from a full spectrum of public agencies and entities. These groups include, but are not limited to: the City of New Orleans, the State of Louisiana, the Federal Government, higher education institutions, the RPC, philanthropic organizations and key downtown civic organizations.
- Forge successful partnerships with private and non-profit organizations, including GNO Inc, DDD, the New Orleans Business Alliance, and the business community.
- Hold monthly BioDistrict Board meetings, and ensure active, engaged participation from all Board members.
- Continue to encourage public and neighborhood involvement in the implementation of this Action Plan.
- Update and review the Action Plan annually.
- Celebrate and promote achievements and successes within the BioDistrict.

The following key steps are essential for the BioDistrict’s ultimate success, and must be undertaken in the initial groundwork phase of the Action Plan. These following critical steps are also related back to the four key component ‘building blocks’ of the plan that focus on people, place, industry, and process.

## Critical Step 1: BioDistrict New Orleans Organization Structure (Process)

As a state-enabled economic development entity charged with growing the biosciences industry at the city, regional and state levels, BioDistrict New Orleans will be the lead administrative body guiding BioDistrict development and Action Plan implementation.

### Administration/Staffing

The Board of Commissioners hired a President/CEO, who will be the BioDistrict’s primary employee until funds are available to recruit additional support staff. As the organization grows, personnel will expand to include: In-House Counsel, Development Director, Director of Business Development, Director of Operations, Director of Policy and Legislative Affairs, Chief Science Officer, Director of Small Business, Workforce and Community Engagement, Director of Finance.

### Annual Budget Projections

Five-year budget projections, including both revenue and costs, are shown below.

BioDistrict General 5 Year Budget Projection – Combined State and Tax Funding

Category	2012	2013	2014	2015	2016
<b>Revenue</b>					
State Appropriation	\$ 900,000	\$ 700,000	\$ 350,000	\$ 350,000	\$ -
Foundation Grants	\$ 150,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000
Impact Fee 1.5% on Ne	\$ 1,500,000	\$ 1,300,000	\$ 1,300,000	\$ 1,300,000	\$ 1,300,000
Partner Match (Univ&	\$ -	\$ -	\$ -	\$ -	\$ -
Rental Income	\$ -	\$ 50,000	\$ 75,000	\$ 75,000	\$ 100,000
Recurring Fees for Serv	\$ 30,000	\$ 50,000	\$ 75,000	\$ 75,000	\$ 150,000
Non Recurring Reven	\$ 400,000	\$ 200,000	\$ 200,000	\$ 200,000	\$ 200,000
Reserves	\$ -	\$ 64,690	\$ 130,877	\$ 117,000	\$ 421,802
<b>Total Program Revenue</b>	<b>\$ 2,980,000</b>	<b>\$ 2,564,690</b>	<b>\$ 2,330,877</b>	<b>\$ 2,317,000</b>	<b>\$ 2,371,802</b>
<b>Costs</b>					
Salaries	\$ 957,000	\$ 1,076,100	\$ 1,129,905	\$ 1,186,400	\$ 1,245,720
Fringes & Benefits	\$ 315,810	\$ 355,113	\$ 372,869	\$ 391,512	\$ 411,088
Legal	\$ 10,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000
Auditing	\$ 7,500	\$ 7,500	\$ 10,000	\$ 10,000	\$ 10,000
Insurance	\$ 25,000	\$ 25,000	\$ 25,750	\$ 26,523	\$ 27,318
Marketing	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000
Consultants Tech  Assi	\$ 400,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000
Programming Subsidy	\$ 1,000,000	\$ 700,000	\$ 400,000	\$ -	\$ -
Rent, Utilities, Equipm	\$ 120,000	\$ 123,600	\$ 127,308	\$ 131,127	\$ 135,061
Travel, Memberships &	\$ 50,000	\$ 51,500	\$ 53,045	\$ 54,636	\$ 56,275
<b>Total Program Costs</b>	<b>\$ 2,915,310</b>	<b>\$ 2,433,813</b>	<b>\$ 2,213,877</b>	<b>\$ 1,895,198</b>	<b>\$ 1,980,463</b>
<b>Program Balance</b>	<b>\$ 64,690</b>	<b>\$ 130,877</b>	<b>\$ 117,000</b>	<b>\$ 421,802</b>	<b>\$ 391,339</b>

## Critical Step 2: Seed Money (Process)

The BioDistrict will require substantial funding to cover the myriad costs required to establish a new, world-class medical and research hub. Needs will be greatest within the first five years, to cover the background studies, physical upgrades, planning, marketing, business recruitment and other activities needed to make the District 'development-ready' and to attract new business. The BioDistrict will need to pursue a variety of potential sources for this 'seed money', including: the City; local universities and institutions which stand to benefit from the growth and success of the District; local, regional, state and federal grants programs; charitable foundations and trusts.

This type of initial seed funding of BioDistrict New Orleans is critical to guide the implementation efforts so that the ultimate 3.3 billion in local economic development will be realized. Similar cities such as San Francisco, Miami, St. Louis, and Cleveland have set up and founded like organizations to drive the success of their medical and institutional areas.

## Non-Profit Organization

As a state agency, the BioDistrict may not be in an advantageous position to apply for many of these potential funding sources. Private foundations and organizations, in particular, may not be able or may not be disposed to, in essence, give money to the State. The BioDistrict should set up a parallel, non-profit organization or foundation in advance of these requests and applications for funding.

## Planning & Monitoring Process

The BioDistrict and its affiliated non-profit entity must be transparent and accountable, in order to maintain both financial and political support. This Action Plan identifies specific phased activities, but as with all plans, is based on a snapshot in time. In order to ensure successful implementation, BioDistrict New Orleans should plan for a formal Action Plan review and update every five years. This update should include a comprehensive review of current market trends and conditions, in particular an analysis of changes and new directions within the biosciences industry.



### Critical Step 3: Additional Studies (Place) Utility Assessment

The Action Plan determined that most of the District's utilities, including water, sanitary sewer, electric and gas, have excess capacity capable of accommodating increased demand on the order of magnitude shown in this plan. Capacity, however, is only half of the equation; a pipe may theoretically have sufficient capacity, but in reality is leaking 50% of the water it conveys.

There are known issues with the condition of many of the systems currently in place within the District. The extent and severity of these issues, however, is beyond the scope of the Action Plan and will require further, detailed technical analysis. There is also the potential to seek alternate or supplemental utility provisions; the Entergy Thermal Plant is one such opportunity which could supply low-cost, environmentally-friendly power within the BioDistrict. Additionally continued discussions with Entergy, the City, LSU, UMC and Tulane institutional users should focus on the potential of shared CHP (Combined Heating and Power) for the District.

In 2010, the Federal Emergency Management Agency (FEMA) allocated grant funding for complete reconstruction of the City of New Orleans' water, stormwater and wastewater network. It is imperative that BioDistrict New Orleans work with City agencies to ensure that planning, design and reconstruction move forward as expediently as possible, and that the BioDistrict is prioritized within these processes. It is unclear at this time whether these critical utility upgrades will be undertaken at a City-wide or District-wide scale; if projects are phased, the BioDistrict should be included in the very earliest phase of work, particularly the area including the Downtown Health Campus. In particular the "Great Streets" and Blue/Green Boulevards identified within the framework plan should be high priority backbone streets for infrastructure and streetscape improvements.

### Downtown Health Campus Programming Study

The first step in moving forward with the Downtown Health Campus is to understand the needs and desires of potential institutional partners. This study should identify institutional interest in the establishment of the campus, and how each entity sees its near- and long-term use of the facilities. The study should result in a strategic vision to meet institutional and shared programmatic and space needs for short, mid- and long-range. It should establish 5-, 10- and 20-year programs; in addition there should be an emphasis on identifying opportunities to promote synergies, multidisciplinary and shared services between partner institutions. The strategic study should provide a detailed accounting of guideline and proposed allocation for each type of space, including academic space (classrooms, laboratories, academic offices), support space (administration, library, physical plant, assembly and exhibit space) and auxiliary space (recreation, athletics, student center, dining, residential).

This study is a critical first step in establishing the planning parameters for the Downtown Health Campus. It is a critical path item and should be included in the District's earliest budget allocations.

### Parking Utilization & Demand

The Action Plan assumes that all new private residential development will be self-parked within its own footprint or parcel and meet City parking requirements. Commercial, retail and institutional development, however, is often better served by shared parking reservoirs with a coordinated plan to manage these parking resources.

Some areas of the District, such as the Galvez Research Neighborhood, have little or no existing structured public parking, and will build at densities greater than can be accommodated in surface or on-street parking. In these areas, it is expected that parking commensurate with proposed density will be provided as part of development. In these areas the plan recommends putting in parking caps, possibly as a trade off for increased project density. This type of new policy approach will encourage more pedestrian, multi modal, and transit usage within the BioDistrict.

In other areas, such as the Downtown Health Campus, Tulane Avenue/Canal Street and Civic Center, a significant reservoir of both public and private parking already exists. The utilization of these resources, and the disposition of private owners to create contract or shared parking agreements, is unknown.

A detailed parking utilization and demand study should evaluate both existing and projected conditions, and should assess opportunities for shared parking and a potential parking management system. The results of this study will be a critical element of master planning efforts in all three of these three key areas, and will be used to locate and size additional parking facilities. As noted with the Downtown Health Campus programming study, this parking utilization and demand study is considered a critical-path item to moving the Health Campus forward.

### Claiborne/I-10 Feasibility Study

Previous studies recommended the removal of the I-10 viaduct downtown of Canal Street, but specifically made no recommendations regarding the structure within the bounds of the BioDistrict itself. This absence of study was not an omission, but an intentional deferral dependent upon recommendations of the current BioDistrict planning process.

The Action Plan identifies Claiborne Avenue, with the current I-10 structure, as a significant divider within the BioDistrict and supports removal of the structure and construction of a more pedestrian- and retail-friendly Claiborne Avenue. This modification would offer significant urban design and economic benefits to the District, as detailed in the 'Framework' section of this document. The next step is to determine the technical feasibility of this proposal, particularly as it relates to traffic impacts within the BioDistrict. Traffic volume, modified circulation patterns, and potential dispersion onto parallel routes are areas of particular interest that will need to be considered if I-10 is lowered.

It should be noted that the lowering of I-10 is a 'severable' recommendation within the Action Plan; removal of the viaduct is preferred, but retention of the structure does not negate other parts of the Action Plan.



## Critical Step 4: Policy Actions (People)

### Comprehensive Zoning Ordinance (CZO)

As stated in the preceding Key Development Areas section, the City of New Orleans is in the process of formulating a new Comprehensive Zoning Ordinance (CZO). The draft CZO is now available for public review, the BioDistrict should identify areas of opportunity, such as tools to further incentivize investment, or challenges that the new zoning may present to the BioDistrict vision.

### Community Benefits Agreement (CBA)

BioDistrict-specific legislation enabling the use of Community Benefits Agreements (CBAs) has already been adopted at the state level. The legislation does not, however, define the threshold (project size or type) at which CBAs will be required, or the menu of benefits that may be offered. The BioDistrict will need to work with community stakeholders to establish these more specific elements of the CBA regulations.

A second important zoning-related element is the Community Benefit Agreement (CBA). CBA's are a relatively new development tool intended to balance the impacts of new development with community enhancements, and have already been discussed in general terms with residents of the BioDistrict. More focused effort is needed in this area, to define what areas will be subject to such agreements, what level or type of development will trigger the agreements, and what benefits are desired by the community. This effort should result in adopted zoning or overlay language.

As a binding part of the entitlement process, it is important that CBA parameters be established in the earliest phase of BioDistrict planning and programming, so that potential developers have a clear understanding of the process and requirements that will apply to their projects.

BioDistrict New Orleans should not be a named party with contractual obligations in any CBA, but may serve as the monitoring entity to ensure the contracted parties are in compliance with the agreement.

### Public Private Partnerships

The City has established guiding Public Private Partnership (P3, or PPP) legislation as does the BioDistrict. Following is language that should be emphasized in the BioDistrict legislation and charter to strengthen it's PPP authority. These two issues will impact the financeability of projects and should be included in continuing appropriations and performance bonding.

There are several potential options for public-private-partnership organizational structures. Alternative options may enable stronger fund-raising efforts and greater private sector participation. Relationships with public or quasi-public agencies can be accomplished in a number of ways – “friends of” groups, business committees, action groups, etc. Generally the legal underpinnings for such groups are 501c3 or 501c6 status, depending on the ultimate amount of organizational structure, process, and size of the constituency required for the agency. Draft language for section 9039.59 A (2) of the BioDistrict enabling legislation regarding special powers should read as follows:

To contract with other public bodies within or without the boundaries of the District, for multiyear funding commitments for any purpose of the District upon a showing of benefit to such public body who may incur debt thereby with the prior approval of the State Bond Commission. These public bodies, entering into multiyear contracts with the BioDistrict, may enter into alternative project delivery contracts that provide for annual or other periodic or extended payment procedures, such as availability payment contracts, and may commit to make payments under such alternative project delivery contracts, subject to appropriation, in the event of early termination. To the extent such payments are subject to annual appropriations, the payments under these alternative project delivery contracts shall be included in the eligible public entity's tentative work program and long-range plan. The public body that is contracting with the BioDistrict shall ensure that such payments are prioritized ahead of new capacity projects in the development and updating of the tentative work program.

Language relating to performance bonds could read as follows:

The alternative project delivery contract shall require the developer and/or specified contractors with the developer's team to provide performance and payment security. This security may take one or more of the following forms: surety bonds; letters of credit; parent company guarantees; lender and equity partner guarantees; or other forms of security. The penal sum or amount of such security may be less than the price of the alternative project delivery contract involved, based upon the eligible public entity's determination, made in its sole discretion and on a project-by-project basis, of what is required to adequately protect the eligible public entity and adequately assure payment of persons who furnish labor, services or materials to the eligible project.

### Critical Step 5: Code Enforcement & Blight Strategy (Place)

Six years after the devastating impacts of Hurricane Katrina, much of the residential and commercial areas with the BioDistrict remain in significant disrepair. This lack of care and recovery is due in almost all cases to lack of funding. Whether the owners of these properties simply do not have the funds, did not have insurance, did not have access to the multitude of federal economic assistance programs, or simply walked away from these properties after the extensive damage caused by Katrina is irrelevant; the effect on the community and the larger BioDistrict is the same. Large parts of the District remain blighted, with conditions worsening as damaged properties continue to deteriorate. Reinvestment is difficult to attract, and developers are disinclined to pump money into an area with such large block-by-block differences and no program to mitigate risk.

The City and the District must work together to implement an effective blight strategy that will assist current owners in accessing available funding, and streamline the process of gaining title to properties whose owners are unknown or unlocated. A declaration of blight may be assessed on a building-by-building, parcel-by-parcel, or block-by-block basis, and while the City of New Orleans Office of Code Enforcement already provides a definition of blight, enforcement has been erratic and difficult. An effective blight strategy must take an aggressive, proactive approach to prioritizing and eliminating blight within the BioDistrict, including the definition of specific timelines for possession (if a property is to be surrendered), demolition and/or renovation.

A summary of City code specifies that a property can be considered blighted if:

- It is chronically vacant.
- There are unresolved code violations for unsafe, unsanitary or unhealthy conditions.
- It has been declared a fire hazard.
- It is lacking in facilities or equipment required by the Housing Code of the City of New Orleans.
- It has been deemed "demolition by neglect" pursuant to section 84-108 or 84-208 of the City Code.
- It has a substantial negative impact on the health, safety, or economic vitality of a neighborhood.
- It is a vacant lot that is abandoned, does not meet the requirements of the City Code or has been adjudicated.
- There is a vermin infestation.

### Critical Step 6:

#### Academic Alliance Shared Research Information Database System (Industry)

The BioDistrict must take the lead in developing and hosting an online biosciences research database system. This electronic resource would connect the field's top scientists, researchers and academics, as well as students, to colleagues and peers across the nation and around the world. Preliminary discussions relative to developing and hosting such a system have taken place with IBM, and this partnership should be actively pursued. Another possible partner for shared medical and research oriented data is the Louisiana Public Health Institute (LPHI). Continued sharing of their data along with the academic medical community is key to expanding the BioDistrict information data base.

### Critical Step 7:

#### Economic Development (Industry)

##### Business Development & Job Creation

The BioDistrict has already identified the types of commercial and research interests it hopes to attract. The next step is to make a compelling case for these businesses to choose New Orleans, either to start a business, to relocate, or to expand. The BioDistrict must be able to 'sell' itself on two fronts: as a profitable, cutting-edge bioscience business and research institution environment, and as a lively, desirable place to live that will attract the best in medical and scientific talent.

One of the most critical elements for the BioDistrict to position itself on is their ability to compete with other established bioscience nodes are to ensure an educated workforce with sufficient depth to support all aspects of the medical and technological industries is readily available. This element underlines the need for early action on the Downtown Health Campus. Critical path elements for the campus include:

- Programming study, including identification of institutions interested in participating
- Health Campus/Civic Center/Tulane Ave-Canal Street Parking Utilization and Demand Study
- Utilities Assessment, specific to the campus area
- Downtown Health Campus long range Master Plan

Already underway efforts within the BioDistrict and throughout the city have lead to the following notable accomplishments:

- # 1 - **Metro area in the U.S. in Economic Recovery**  
- Brookings
- # 2 - **Big City for Jobs**  
- Forbes
- # 2 - **“Boomtown” in the Nation**  
- Bloomberg
- # 1 - **Metro Area for overall economic recovery**  
- Brookings Institute
- # 1 - **Growing Metro Area for Employment**  
- Brookings Institute
- # 1 - **Louisiana: Top State in Economic Growth Potential**  
- Business Facilities, August 2012
- # 1 - **New Orleans is America’s Fastest Growing City**  
- Bloomberg  
- U.S. Census Bureau
- # 1 - **Louisiana Most Improved State on Business Friendly**  
- CEO Magazine
- # 1 - **Xavier University graduates more pre-med students that actually attend medical school than any other university in the country**
- # 1 - **Brain Magnet in America**  
- New Geography
- # 1 - **IT Job Growth**  
- Forbes
- # 1 - **Coollest Start-Up City in America**  
- Inc.
- # 1 - **Hospital Project in the World**  
- Combined UMC/VA under construction in the BioDistrict

The BioDistrict should work with partner agencies to identify and promote new employment opportunities that will be generated as a result of the new facilities within the District. An online job posting, recruitment and application tool should be developed and linked appropriately so that these new jobs can be filled.

Other actions important to developing a medically-oriented work force include:

- Establishment of math and science magnet schools, at the elementary, middle and high school levels
- Creation of a GED testing center
- Development of a peer to peer mentoring network for high school and advanced studies students
- Job placement assistance for recent advanced training graduates
- Continuing education opportunities for the general public and for supplemental registration requirements

### Marketing & Business Recruitment

New Orleans has a number of established organizations charged with different types of marketing and promotion. Since businesses or professionals considering relocation to the BioDistrict might first find any of these information outlets, and is critical that BioDistrict New Orleans coordinate with other existing agencies to ensure that information is consistent, easy to find, and cross-linked across websites and hard-copy materials. It is often said that there is 'only one chance to make a first impression', and it is critical that potential business or residents are not lost because information was obscure, incomplete, unclear, or just plain hard to find.

The BioDistrict should work with partner agencies to develop:

- Database of properties available for development
- Clearinghouse of information regarding business incentives and partnerships
- Regular articles local region and nation trade magazines and media outlets
- Resource for international companies seeking potential investment in local university technology

It will also be important for the BioDistrict to maintain a high profile and solicit support with local, regional, state and federal agencies. This action plan and its associated illustrative graphics will be important tools in expressing the vision of the district to potential funders, investors, and businesses.

BioDistrict offices should be located within the District and portray a professional, creative and technical appearance in order to establish the correct physical message.

### Critical Step 8: Community Relations (Process)

The BioDistrict includes one predominantly residential neighborhood, Gert Town and is adjacent to MidCity and New City. The residents have expressed a strong connection to their communities' existing character, scale and history. It is important that the BioDistrict support residents' desire for 'organic' redevelopment and revitalization, assisting with identification of potential sources of neighborhood funding. It is also important to maintain open, transparent relationships with the community, and to ensure an open-door policy as regards proposed development and its potential impacts. Neighborhood support will be vital in ensuring the long-term success of the BioDistrict.

An important first step will be an assessment and inventory of structures within the Gert Town, Mid City and New City neighborhoods, to identify structures of historic value. This activity should be closely coordinated with the State Historic Preservation Office (SHPO). These structures should be prioritized for revitalization, and the BioDistrict should work with owners to identify potential funding sources for renovation.

Similarly, it is incumbent on the City to work with neighborhoods to fight blight by expediting the removal of unsafe and non-salvageable structures.

An effective, proactive community outreach strategy should include regular updates and human interest articles in local newspapers and websites, a task that can be carried out by BioDistrict and local neighborhood group staff.

### Critical Step 9: Incentives and Funding (Process)

While the BioDistrict will assume a large part of the effort in marketing and promoting the BioDistrict, a considerable part of 'closing the deal' will fall to the City of New Orleans. It will be incumbent upon the City to ensure a development-friendly entitlement and approvals process, and to seek innovative instruments to assist in project financing. The City should specifically evaluate the following policies and potential development incentives:

- Building code
- Zoning and variances
- Building permit and utility fee reductions and deferrals
- Historic preservation easements
- Relocation assistance
- Property tax abatement

Some tools might include:

- Public private partnerships
- Public improvement districts
- General bond issue
- City/parish venue tax
- Community development block grants
- EDA/EPA grants and loans

The State of Louisiana also has a number of statewide incentive programs that will be helpful in the promotion of the BioDistrict. These include:

- Enterprise Zones
- Quality Jobs Program
- Restoration Tax Abatement program
- Industrial Tax Incentive Program
- Research and Development Tax Credit
- Industry Assistance Program
- Tax Equalization Program
- Small and Emerging Business Development Program (SEBD)
- Microenterprise Development Program
- Matching Grants Program

BioDistrict should supplement these incentives with additional incentives that would be project specific. By combining the tax exemption and bond authority significant value can be created that adds to making the transaction occur.

### Critical Step 10: Design Guidelines (Place) Design Guidelines

Design Guidelines will be key to establishing and maintaining the look and feel of the BioDistrict through its extended 20+ year buildout. While the BioDistrict may have a set of overarching 'umbrella' guidelines applying to all parts of the District, more detailed area-specific policies will be the true drivers of character. BioDistrict guidelines will not replace or compete with the City's place-based guidelines, which will still apply. BioDistrict guidelines should provide more detailed guidance for District-specific issues, and should be developed cooperatively with the City, the District and the local community. The Design Guideline document should provide both standards (required) and guidelines (recommended) for the following elements, at a minimum, where District standards are expected to be more stringent than existing City requirements:

- Circulation & Access
  - o vehicles
  - o bicycles
  - o pedestrians
  - o transit
- Buildings
  - o massing and orientation
  - o materials and transparency
  - o build-to and setback lines
  - o service & utility areas
- Parking
  - o location & screening
- Open Space
  - o layout & programming
  - o streetscape
  - o furnishings
  - o landscaping
- Lighting
- Signage & Wayfinding
- Sustainable practices and green building

The BioDistrict should also work with the City Planning Commission to create a Design Review Committee (DRC) charged with administering the design guidelines.

Entities of this type are typically composed of a group of qualified design professionals, such as architects, landscape architects and planners, and may or may not include local residents or stakeholders as well. The DRC should meet on a regular basis, often monthly, and all meetings are typically open to the public and provide time for public input. The DRC may approve, approve with conditions, or reject a proposal, and all development proposals, including signage, must receive approval from the DRC prior to submitting for City Approvals. The relationship between the City and the DRC--so that projects cannot bypass the DRC process--is critical to ensuring that the District's Design Guidelines have 'teeth' and can be enforced.

### Critical Step 11: Land Assembly and Holding (Place)

Unlike some similar development efforts, the Action Plan does not recommend the immediate demolition of existing structures or elimination of existing uses. All development within the BioDistrict will be market- and developer-driven, and no demolition should take place until an approved site-specific plan is in place. This said, there are a large number of strategic parcels throughout the District's key development areas that should be acquired or assembled and held in a land bank as a pre-cursor to development. Some parcels may be purchased opportunistically as they come on the market, while the most strategic parcels should be actively solicited for sale.

Examples of key parcels include:

- Property within the Illinois Central Railroad right-of-way, in Gert Town.
- Existing structures at Tulane Ave and Villere St., for creation of Math & Science high school.
- Warwick Hotel and property.
- Existing light industrial sites in the Galvez Research Neighborhood.

### Critical Step 12: Urban Design (Place) Streetscape

The BioDistrict's highest priority within the public realm is to promote a walkable, pedestrian-scaled environment. Streetscape is an important part of this goal, and street trees are perhaps the most important scale-giving element within the street envelope. Regular street tree plantings offer significant aesthetic and environmental benefits, including reduction in ambient temperature and absorption of greenhouse gases, and the Action Plan recommends that the District strive to increase tree canopy to 25 percent within residential areas and 15 percent in non-residential areas. To assist in realization of this goal and make available a ready supply of appropriately sized tree species, two locations for non-profit urban nurseries, where trees are grown in containers, have been identified in the BioDistrict. These nurseries would be long-term uses which would eventually transition to public open space or stormwater amenities once the District has attained the desired level of tree canopy.

Enhanced streetscape will be an important first, visible step in changing the 'face' of the BioDistrict. Priority streets should include Tulane Avenue, Canal Street, Galvez Avenue through the proposed Galvez Research Neighborhood, and Gravier Street within the Downtown Health Campus.

Other streetscape improvements should include reduction or mitigation of blank facades at the street level, a goal linked to the previously-discussed development of design guidelines.

### Parks & Open Space

Like streetscape, parks and open spaces are another example of visible, early-term results that build community support and show potential developers and investors that the BioDistrict is real, serious and moving forward. While some of the spaces recommended in the Action Plan, such as the Galvez Research Neighborhood park, will be planned and built as part of larger planned developments, some spaces, such as the proposed Railroad R.O.W. Greenway in Gert Town, offer near-term opportunities to build community support and increase District connectivity. In the case of the Gert Town linear park, this public amenities should be developed in partnership with the City, the neighborhood and Xavier University.

Enhanced park maintenance should also be considered an element of this early-action demonstration of change,

and BioDistrict New Orleans should work with the City, the community and local institutions to identify ways in which this could be accomplished, including identifying federal and foundation parks and open space grant monies. One priority area within the BioDistrict that could have immediate high impact benefits is the area controlled by the city south of the main train line. This property is ideally situated for both an Urban Tree Farm nursery and Urban Storm Water Park. The Urban Tree Nursery should be developed as an educational opportunity with Delgado University and or the Tulane School of Horticulture to raise nursery stock for redevelopment projects within the BioDistrict. The Urban Storm Water Park will provide the largest continuous area within the BioDistrict for storm water retention. The park can also serve as a living demonstration and educational model for storm water retention best practices techniques.



Claiborne Avenue Streetscape

## Catalytic Projects & Development

### New Development

As noted under 'Business Development', the BioDistrict's highest priority should be the actions associated with developing a new Downtown Health Campus that includes the Math and Science High School and a potential facility for Pre K to 10th grade students similar to the Centre of the Cell concept--an interactive science education center located within a medical research laboratory in London.

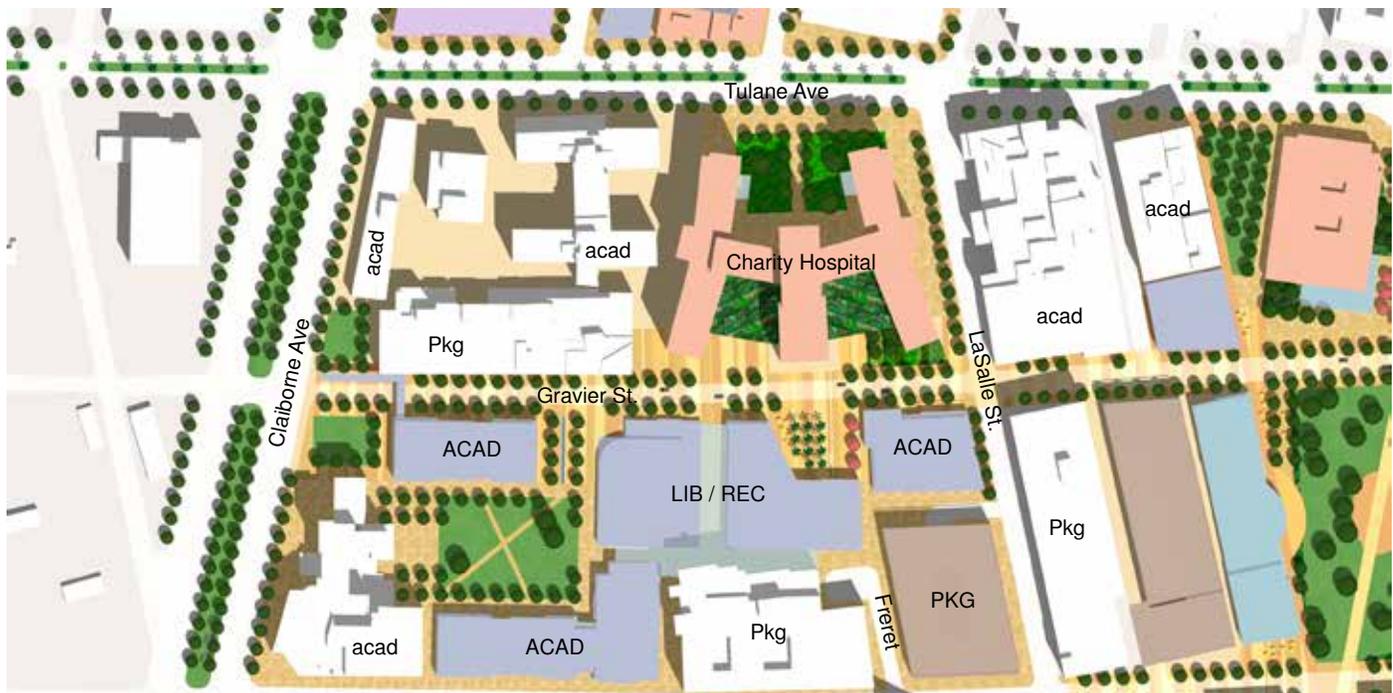
Other important early action projects important to building community support and demonstrating real action within the BioDistrict include:

- Reconstruction of the Gert Town pool
- Attracting a grocery store (new construction) on Tulane Avenue in Mid-City, both for existing residents and as the foundation of a Creative Class live/work urban neighborhood
- Attracting medium-density, mixed-use residential development to the VA/UMC area, in order to begin to build the sense of place that will help sell the BioDistrict as a place to attract top-notch development
- Private side redevelopment including the Paramont and Jung Hotel Projects

### Renovation & Re-Use

A critical, third piece (in addition to the programming study and master plan) of making the Downtown Health Campus a reality is an academic feasibility and programming study of the existing Charity Hospital site and building. BioDistrict New Orleans should commission this study as soon as the initial campus programming study is complete. Once feasibility analysis of the hospital is complete, the State and City as "Owners" of the property will convey the property to the BioDistrict to issue an RFP for site redevelopment. The RFP should allow both traditional (ie, developer-led) or public-private partnership (PPP) proposals. It should be noted that properties to be redeveloped will remain on the tax rolls for some or all of the assessed value similar to how all other properties are assessed and taxed.

Other priority renovation/re-use projects include an evaluation of the Gert Town elementary school, to be carried out under the auspices of New Orleans Public Schools. Based on the results of this study, NOPS should commit to renovation or reconstruction, or make a final decision on sending local students to neighboring schools.



Downtown Health Campus, plan view.

## Transportation

### Roadways

As a cutting-edge live/work environment, the BioDistrict should be a national model for Complete Streets, a transportation philosophy emphasizing highly connected transportation networks that accommodate and balance the needs of pedestrians, cyclists, motorists and transit riders. Shifting the District's roadways from their current automobile-focus to one that accommodates all users is a long-term, incremental prospect. Streets and roadways will be upgraded and reconstructed as funds become available from the City and from adjacent development projects.

The BioDistrict should seek first to ensure a minimum standard of pedestrian amenity within the district, including a complete sidewalk network with no gaps or missing segments, ADA-accessible ramps and pedestrian signals and crosswalks at all signalized intersections. Once this standard has been met, and sometimes in tandem with it, the District should seek to promote additional roadway enhancements and upgrades that include on-street bike lanes and modified, traffic-calming cross-sections as detailed in Section Two of this report.

Similar to the District's potential to be a leader in Complete Streets, the BioDistrict has the opportunity to be a national demonstration for 'Smart Streets.' Already included in the Regional Planning Commission's plans for Tulane Avenue, this approach to street design includes electronically connected and remotely monitored infrastructure systems both above- and below-grade. BioDistrict New Orleans should work with the RPC to move these plans forward for Tulane Avenue, and to identify additional streets within the District that should be considered for Smart Street upgrades.

The BioDistrict plan calls for the development of Tulane, Galvez, and the extension of Poydras as "Great Streets." This classification is meant to designate a street that is iconic and memorable through the use of amenity features such as special lighting, special paving, signage, and wayfinding unique street furnishings, more dense plantings, and building setback requirements.

The potential removal of the elevated I-10 structure over Claiborne Avenue is another important issue for the BioDistrict, offering the opportunity to re-connect a part of the City now divided, physically and perceptually, by this piece of infrastructure. The District should request that this study, similar to the federally-funded study just completed for the Napoleon Avenue-Elysian Fields segment of I-10, be undertaken in a near-term time frame. BioDistrict New Orleans should assist the City and other relevant agencies in identifying funding for this effort.

### Parking

Increased density means increased parking demand. As noted in the 'Critical Steps' portion of this report, some key development areas will include parking as part of a larger planned development. Other areas, such as the Downtown Health Campus, Tulane Avenue/Canal Street and Civic Center, will accommodate parking through a combination of existing and new parking structures. A parking demand & utilization study will be key in determining how much new parking will be needed, and will impact the overall financial feasibility and funding of these projects. The BioDistrict should work with the City and the owners/operators of existing parking facilities to carry out this necessary analysis.

### Bikes

Bicycle facilities are an integral parts of the Complete Streets approach to infrastructure mentioned in the preceding 'Roadways' section. The Action Plan recommends that dedicated, on-street bike lanes be introduced on the following streets:

- Banks Street
- Tulane Avenue
- Broad Street
- Galvez Street
- Claiborne Avenue
- Canal Street
- Cleveland Avenue

Additional, off-street multi-use paths are recommended on Poydras Street (from Broad to Claiborne) and the former railroad right-of-way (from Carrollton to Broad, in Gert Town).

In many cases, introduction of bike lanes does not require changes to the roadway cross-section, only restriping and re-allocation of the existing curb-to-curb right-of-way. In cases where a vehicle travel lane is dropped in order to provide the horizontal space necessary for a bike lane, traffic impact analysis may be necessary. Shared lane designation and pavement markings, also referred to as a 'sharrow', are in use in the City and may be considered as an alternative to dedicated bicycle lanes, if traffic levels and right-of-way are judged insufficient to accommodate a full bicycle lane.

All bicycle improvements should be in compliance with LADOT's Complete Streets Policy (July 2010) and seek to align with and further the goals outlined in the New Orleans Metropolitan Bicycle and Pedestrian Plan (September 2006).

### Transit

The District's top transit priority is the creation of a rubber-tired circulator service connecting major destinations and origins within the BioDistrict. Although this service will not be provided by the District itself, BioDistrict New Orleans should take the initiative in establishing the need and coordinating the introduction of this service. While the circulator could be run by the Regional Transit Authority, running it as a private service would afford more control over branding, scheduling and frequency. In this case, it will be necessary to identify the appropriate entity to fund the shuttle, whether that entity is a business improvement district, a private consortium (of universities and medical facilities, for example), or some other formulation. A number of BioDistrict institutions, including LSU and Tulane, already run their own private shuttles; this new District shuttle could be a combination-expansion of these services.

Long-term transit recommendations include three additional streetcar corridors on Loyola Avenue, MLK Boulevard, and Carrollton Avenue. Already in planning stages, the Loyola streetcar is the highest priority of the three lines. The other two lines would be long-term improvements, and should be studied for feasibility and ridership once the BioDistrict has experienced significant redevelopment.

### Utilities

The District has two classes of utility needs: mandatory evaluation and preparatory upgrades. In the first category is a comprehensive evaluation of the condition (not capacity) of existing utility systems, as described in the preceding 'Critical Actions' section of this report. Less pressing but equally important to creating attracting new, high-tech businesses is the ready availability of high-speed, high-capacity telecommunications. The BioDistrict can create a development-friendly environment by having early-action discussions with telecommunication providers to determine current capacities, costing and potential catalysts for upgrades. Once this basic information has been outlined, the BioDistrict can determine whether it is necessary to seek pre-development seed money to invest in upgrading these systems in advance of concrete development.

### Storm Water Retention

The BioDistrict plan identifies the following backbone north/south streets as Blue/Green Boulevards. These streets are intended to provide open space connections to Lafitte Greenway to the north as well as convey and retain water through the widest median section possible to natural drainage area to the south. Carrollton, Jeff Davis, Broad, and Claiborne are designated as Blue/Green Boulevards.



New Orleans City Council groundbreaking.

## Prioritized Action List

This plan utilizes a 20-year planning horizon, recognizing that project phasing is a fluid construct impacted by a host of factors, among them local, regional and national market conditions, long term recurring funding, bioscience competition and the success of early-phase development. This section outlines the projects and actions described in the preceding Recommendations section, and identifies the key areas, the specific action item, the entity or agency responsible for leading the effort and the phase in which the specific action is to occur.

The Strategic Action Plan is organized around the following key areas of focus:

- Economic Development
- Policy & Land Use
- Urban Design
- Catalytic Projects and Development
- Transportation
- Utilities

The following abbreviations are used to note responsible parties/agencies:

City	City of New Orleans
BDNO:	BioDistrict New Orleans
CDC	Civil District Court
CPC	City Planning Commission
DDD	Downtown Development District
DPW	Department of Public Works
GNO	Greater New Orleans, Inc.
GNOF	Greater New Orleans Foundation
LADOTD	Louisiana Department of Transportation and Development
LCRC	Louisiana Cancer Research Consortium
LED	Louisiana Economic Development
LPHI	
MCC	Morial Convention Center
NOBIC	New Orleans BioInnovation Center
NOLABA	New Orleans Business Alliance
NOVCB	New Orleans Visitors Convention Bureau
NOPS	New Orleans Public Schools
NORD	New Orleans Recreation District
NOTMC	New Orleans Tourist and Marketing Corporation
Pk&PkwY	Parks and Parkways
PPP	Public Private Partnership
RPC	New Orleans Regional Planning Commission
RTA	New Orleans Regional Transit Authority
State	State of Louisiana
SHPO	State Historic Preservation Office
SWB	Sewerage & Water Board
WTCNO	World Trade Center New Orleans

The following phases are used to note the following timeframes:

Groundwork:	Immediate
Phase 1:	0-5 years
Phase 2:	6-10 years
Phase 3:	11-20 years

Economic Development			
Key Area	Action	Responsible	Phase
<b>Business Development, Job Creation &amp; Capital Funding</b>			
DISTRICT	Continue to coordinate a community-focused discussion of labor force and workforce development needs and the timing for those needs. Coordinate with appropriate educational and training institution to develop initiatives to meet these needs.	BDNO	Groundwork
DISTRICT	Establish a professional-student mentor program between the BioDistrict's major research and educational institutions and employers.	BDNO	Groundwork
DISTRICT	Support the 'additional transportation links' as a means of increasing the attractiveness of the New Orleans metro area as a desirable place to live, work and do business.	BDNO, City, RPC, RTA	Groundwork
DISTRICT	Support the 'brain train' connection between New Orleans and Baton Rouge as a means of increasing the attractiveness of the New Orleans metro area as an attractive place to live, work and do business.	BDNO, City, RPC, RTA, LADOTD	Groundwork
DISTRICT	Update the BioDistrict Action Plan every 5 years, to ensure flexibility and market responsiveness.	BDNO	1, 2, 3
DISTRICT	Establish a proactive planning process to mitigate adverse impacts of construction on existing businesses, including streetscape and roadway improvements as well as new development projects.	City	1
TC	Work with the New Orleans BioInnovation Center (NOBIC) to explore working together to attract start-up businesses and generate leasing activity in the building. Such concessions should be re-evaluated once the building has reached more than 50% occupancy.	NOBIC, BDNO, LED, City	Groundwork, 1
TC	Develop a transition lab facility, often called an 'Accelerator' building, for start-up businesses (particularly those already in the New Orleans BioInnovation Center (NOBIC)) requiring room to grow. This facility will also allow new start-ups to back fill small incubator spaces.	BDNO, City, State, GNO, LED, PPP	1
GRN/HC	Create a Soft Landing Center consisting of a collection of furnished offices with early-stage technology commercialization in mind. This Center should provide start-up companies with the professional platform necessary to begin business activities almost immediately.	BDNO, WTCNO, NOLABA, LED	1
GRN	Work with the Louisiana Cancer Research Consortium (LCRC) to ensure allocated per square foot costs, and future asking rent, of their new research building are set at appropriate levels, particularly during the initial leasing period, as capital costs are covered by state funding.	BDNO, State	Groundwork
DISTRICT	Leverage the City's newly renovated Convention Center as an additional asset and companion facility to the BioDistrict, in order to attract new business and promote expansion of existing events such as conferences, symposiums and the like.	BDNO, GNO, NOLABA, City, NOVCB, MCC, NOTMC	1, 2
DISTRICT	Pursue and develop the region's existing academic research strengths, with particular focus on translational medicine applications. The following five areas are existing regional strengths, and should continue to be so in the future and become drivers for the BioDistrict: cancer research, HIV/AIDS research, BioDefense, Diabetes and cardiovascular disease, Neuro-protection & rehabilitation.	BDNO, Institutions, LPHI	1, 2, 3
DISTRICT	Promote coordination between high-impact catalytic projects through the establishment of defined partnerships between the BioDistrict, the State and the academic originators of local catalytic projects. Utilize these relationships to maximize research synergy and economic opportunity.	BDNO	1,2
DISTRICT	Create a WIFI database of local research to track research trends, initiatives and assets on a regional scale that is HIPPA compliant and encrypted	BDNO/LPHI	1

GRN: Galvez Research Neighborhood XG: Xavier/Gert Town TC: Tulane/Canal HC: Downtown Health Campus CC: Civic Center

Economic Development			
Key Area	Action	Responsible	Phase
<b>Incentives &amp; Funding</b>			
GRN	Explore PPP, grants and other funding sources for adaptive re-use of the historic high school building at Gravier and Miro Streets.	City, BDNO	1
DISTRICT	Review and update established economic incentive policies in context of BioDistrict goals and the new CZO. Potential areas include:	see below	see below
	flexible building codes	City	Groundwork
	expedited approval process	City	Groundwork
	zoning variances	City	Groundwork
	building permit and utility fee reductions and deferrals	City	Groundwork
	historic preservation easements	City	Groundwork
	relocation assistance	City	Groundwork
	site clearing/demolition	City	Groundwork
	property tax abatement	City, NOLABA	Groundwork
DISTRICT	Evaluate feasibility for alternative transportation modes, stormwater management, and application requirements/process for various financing options, such as:	see below	see below
	public/private partnerships	City, BDNO	1
	property tax abatement	BDNO	1
	City/Parish venue tax	City	1
	general obligation bond issue	City	1
	construction impact fee assessment	BDNO, City	1
	community development block grants	City	1
	tax increment financing (TIF)	City, BDNO	1
	Community Benefits Agreement (CBA)	State, City, BDNO	1
	EDA grants and loans	City, RPC, BDNO	1
DISTRICT	Continue applications to federal grant programs such as HUD Livable Cities and Tiger II. Hire grant writer and identify critical windows for Grant Applications.	BDNO, City, RPC	Groundwork
DISTRICT	Identify key foundations and sources of potential funding whose missions align with urban revitalization, job creation and community support such as the New Orleans Foundation, Ford Foundation, Kellogg Foundation, Kresge.	BDNO, City, GNOF	Groundwork
DISTRICT	Investigate potential application of the Louisiana Digital Media Incentive Program to existing BioDistrict institutions, businesses and programs. Provide information to and work with potential new BioDistrict tenants to maximize their use of the incentive program.	BDNO	1, 2, 3
DISTRICT	Promote use of and help potential new BioDistrict businesses explore their qualifications for the Louisiana State Angel Tax Credit.	BDNO	1, 2, 3
DISTRICT	Develop a state-sponsored Louisiana Economic Development (LED) bioscience Tax refund for biotech industry manufacturing of pharmaceuticals and medical devices.	State, City, BDNO, GNO, DDD, NOLABA	Groundwork
DISTRICT	Develop a state-sponsored Louisiana Economic Development (LED) bioscience recruitment fund for high profile researchers and industry candidates.	State, City, BDNO, GNO, DDD, NOLABA	Groundwork
DISTRICT	Develop a state-sponsored Medifund	State, BDNO	Groundwork
DISTRICT	Create non-profit entity to apply for, receive and administer funding from grants, foundations, and like sources.	BDNO	Groundwork

<b>Economic Development</b>			
<b>Key Area</b>	<b>Action</b>	<b>Responsible</b>	<b>Phase</b>
<b>Community Relations</b>			
XG	Strengthen relationships between Xavier University and Gert Town. Joint open space projects, particularly the Central Illinois Railroad Greenway proposed in this plan, could be used as catalytic projects to forge and improve this relationship.	City, BDNO	Groundwork
DISTRICT	Conduct an assessment and inventory of structures within the Gert Town, Mid-City and New City neighborhoods in order to identify structures of historic value and create prioritization for renovation.	City, SHPO	1
DISTRICT	Increase enforcement of City's blight policy. Create a BioDistrict specific blight strategy with specific timeframes for possession, demolition, renovation and disposition of blighted properties.	City, BDNO	Groundwork
XG	Consider creation of an artist-in-residence program to link the Gert Town/Xavier University communities.	BDNO	1
DISTRICT	Undertake a community outreach program to address neighborhood concerns and generate support for neighborhood infill and BioDistrict development.	City, BDNO	Groundwork

GRN: Galvez Research Neighborhood XG: Xavier/Gert Town TC: Tulane/Canal HC: Downtown Health Campus CC: Civic Center

Policy & Land Use				
Key Area	Action		Responsible	Phase
<b>Zoning</b>				
XG / GRN	Initiate public outreach to determine types of amenities desired within potential Community Benefit Agreement (CBA) areas in Xavier/Gert Town and the Galvez Research Neighborhood. Initiate Developer Panel to determine acceptable level of requirements.		BDNO	1
DISTRICT	Review City's new Comprehensive Zoning Ordinance (CZO) to ensure that designations within the BioDistrict's five Key Areas align with land use recommendations in this plan. Parcels of concern include areas immediately south and east of the Xavier's existing campus, and the block currently occupied by LaFarge operations at the neighborhood's southern edge.		BDNO, City	Groundwork
DISTRICT	Formally adopt the BioDistrict New Orleans Action Plan.		CPC	Groundwork
DISTRICT	Identify a key point of contact within the City's Planning and Economic Development Departments to work closely with the BioDistrict in implementation of the Action Plan.		City, BDNO, NOLABA	Groundwork
DISTRICT	Create design standards and guidelines for each key area identified in the plan: Galvez Research Neighborhood, Xavier/Gert Town, Tulane/Canal Street, Downtown Health Campus, and Civic Center. Criteria should pay special attention to the establishment of a higher, pedestrian-oriented environment in the following areas:		CPC, BDNO	1
GRN		Tulane Avenue and Galvez Street	RPC	Groundwork
XG		2 blocks in each direction from intersection of Pine and Edinburgh Streets.	City	1
TC		Canal Street and Cleveland Avenue	DDD	2
HC		Gravier Street	BDNO, City	2
CC		Duncan Plaza and all facing properties	DDD	2
DISTRICT	Establish and promote a 'Green Building' policy that requires all new construction to meet any state established green building standards and/or, at a minimum, the National LEED Green Building Rating System.		BDNO	1

GRN: Galvez Research Neighborhood XG: Xavier/Gert Town TC: Tulane/Canal HC: Downtown Health Campus CC: Civic Center

Policy & Land Use			
Key Area	Action	Responsible	Phase
<b>Land Assembly &amp; Holding</b>			
XG	Work with Xavier University and Gert Town residents to identify an acceptable southern 'limit' to academic expansion. Explore potential land swaps to promote contiguity of University holdings.	City	1
	Acquire the following parcels for the creation of public amenities or roadway changes:		
XG	Property within the former Illinois Central Railroad right-of-way in Gert Town, from Carrollton Ave to Earhart Blvd, for the creation of a greenway.	RPC	1
GRN	Parcels within the three block area bounded by Rocheblave, Galvez, Perdido and Poydras for reintroduction of street grid and transition to residential development.	City	2
TC	Two existing structures at Tulane Ave and Villere St for the creation of a magnet high school.	City	1
CC	All parcels between existing Tulane University parking structure and Duncan Plaza, between Perdido and Gravier Streets, for construction of new parking structure and Civil Courts Building.	BDNO	2
	Assemble the following parcels to facilitate large-scale redevelopment.		
GRN	Parcels (one block deep) on blocks immediately east and west of Galvez street, from Tulane Ave to Poydras Street, for commercial development.	BDNO	1
GRN	Parcels within the area bounded by Tulane, Broad, Miro and Perdido (Galvez Research Neighborhood) for mixed-use and residential development.	BDNO	1
TC	Cleveland Avenue-facing parcels (including historic fire station building) between Robertson and Villiere Streets for creation of public university park. Minimum acquisition depth, half-block north and south of Cleveland Ave.	BDNO	1
TC	Any parcels within the Tulane-Canal redevelopment area, (as they become available, in order to assemble larger properties for development of any type).	BDNO	1
HC	Work with the City and higher education institutions to determine interest in participating in and proposed structure (Board/Organization/District/City/etc) of the Health Campus.	BDNO	1
HC	Work with city government to purchase/transfer VA property to new Health Campus entity.	BDNO, City	1
CC	Acquire the Warwick Hotel and property, for Tulane University expansion.	BDNO	2
CC	Subdivide City Hall block to allow for private development on both sides of City Hall.	City	2

GRN: Galvez Research Neighborhood XG: Xavier/Gert Town TC: Tulane/Canal HC: Downtown Health Campus CC: Civic Center

Catalytic Projects & Development			
Key Area	Action	Responsible	Phase
<b>New Development</b>			
DISTRICT	Investigate the feasibility of, and identify potential partners for, early-stage catalytic projects which could fill a specific niche and assist in attracting new business to the BioDistrict. Potential projects that could be developed by Year 5 include:	BDNO	1
	pharmaceutical packaging and manufacturing facility: 50-200,000 SF, within the industrially zoned land riverside of Xavier University		
	generic drug manufacturing center		
XG	Construct new public pool in Gert Town. Demolish existing pool (community eyesore) and build new pool on southwest corner of Pine and Olive Streets (demolish abandoned nursing home structure).	NORD	1
XG	Explore potential/demand for artists' live/work studio spaces as a tool for community revitalization in Gert Town.	City	3
GRN	Promote new grocery store on corner of Tulane & Broad.	BDNO	1
GRN	Promote complementary small-format retail strip adjacent to grocery, facing Tulane and Dourgenois.	CPC NOLABA	2
GRN	Promote medium-density mixed-use, with ground-floor retail, on Tulane Ave from Broad St to Miro St.	City	1
HC	Work with Delgado Community College to identify preferred site of new academic building.	BDNO	2
HC	Create master plan for the health campus. Plan should include phasing, parking need assessment, and early-phase planning for the old VA block bounded by Claiborne, Gravier, Perdido and LaSalle.	BDNO	1
CC	Construct new Civil District Courts facility adjacent to Duncan Plaza.	CDC, BDNO	3
CC	Construct new public parking structure behind new Civil District Courts facility. Structure	CDC, BDNO	3
<b>Renovation &amp; Re-Use</b>			
XG	Evaluate Gert Town school for structural and environmental integrity. Renovate or demolish and rebuild on same site.	NOPS	1
XG	Expand existing Xavier Arts facility on the corner of Pine and Edinburgh to include additional space for community-based arts initiatives.	Xavier	1
XG	Identify new location outside of Gert Town for LaFarge cement facility. Identify funding for relocation.	City, BDNO	1
GRN	Work with SHPO and qualified engineers/architect to evaluate residential structures within the Galvez Research Neighborhood (bounded by Broad, Galvez, Perdido and Tulane) for structural integrity and historic value. Work with owners to relocate viable structures to vacant lots within Gert Town and Mid-City.	BDNO	1
TC	Create a Math and Science Magnet School in the existing buildings at Tulane Ave and Villere St.	NOPS, BDNO,	1
TC	Create 4-season indoor/outdoor 'City Market' on block bounded by Claiborne, Canal, Robertson and Iberville. Reuse existing former dealership building.	BDNO	1
HC	Commission academic feasibility and programming study for re-use of Charity Hospital. Study should also evaluate need for/potential decommissioning of existing power plant on LaSalle St.	STATE, CITY, BDNO, DDD, RPC	1
HC	Write RFQ/RFP for redevelopment of the old Charity Hospital building and site.	BDNO, City	1
CC	Expand the J Bennett Johnston Building (Tulane Univ.)	Tulane Univ.	2
CC	Expand the public library.	City	2
CC	Expand City Hall toward Perdido Street.	City	2

GRN: Galvez Research Neighborhood XG: Xavier/Gert Town TC: Tulane/Canal HC: Downtown Health Campus CC: Civic Center

Urban Design			
Key Area	Action	Responsible	Phase
<b>Streetscape</b>			
DISTRICT	Work with City, property owners and private developer to increase overall tree canopy cover within the BioDistrict to 20%. Goal is 15% (non-residential) to 25% (residential). Coordinate with City on roadway and public realm projects (beyond those identified in this Action Plan) to include street tree plantings. Investigate potential sources of outside funding that can be added to City funds for these types of projects.	PK & Pkwy, BDNO	2
DISTRICT	Explore teaming opportunities with the Landscape Architecture program at LSU Baton Rouge, the Tulane architecture program and the MURP Program at UNO to utilize BioDistrict sites as 'problems' for student design studios. This design work may act as a starting point for large- or small-scale renovation and revitalization efforts.	CPC, BDNO, LSU, City, Tulane City Center, UNO, Pk&Pwy	1
GRN	Enhance Galvez median and back-of-curb streetscape as spine for R&D development.	City	1
DISTRICT	Reduce the number of blank walls on buildings, particularly parking structures in the Health Campus and Civic Center areas, replacing them with appropriate art or murals.	DDD, BDNO	1
<b>Parks &amp; Open Space</b>			
DISTRICT	Create a parks & open space maintenance plan. Investigate the potential for public-private maintenance agreements with adjacent entities and with developers of new master-planned areas.	BDNO, City, PK, & Pkwy	1
XG	Construct new greenway for pedestrian and vehicular travel and recreation on former Central Illinois Railroad Greenway between Carrollton Ave and Earhart Blvd, including elevated non-vehicular bridge across Washington Ave and adjacent canal. Establish maintenance agreement between City and Xavier University.	City	2
XG	Enhance the Washington Avenue canal to act as a visual and physical amenity.	S&WB, City, DPW, GNO	2
XG / GRN	Create long-term temporary tree and plant material container nurseries in Gert Town (on 2 'Cement Plant' blocks) and the Galvez Research Neighborhood (immediately south of Poydras St). Once nursery usage is complete, develop this site into a stormwater park.	BDNO	1
GRN	Create centrally-located, passive-use community park within the Galvez Research Neighborhood. Half-block, minimum size.	City	1
TC	Identify appropriate park-related amenity or use for existing historic fire station at corner of Cleveland Ave and Robertson St.	City	1
HC	Identify central quad location within the old VA block. Create passive-use, softscape park as early catalytic project to promote Health Campus.	BDNO	2
CC	Create new City Hall Welcome Plaza fronting on Poydras St	City	2
CC	Redesign and renovate Duncan Plaza to accommodate for large outdoor civic gatherings.	City	2

GRN: Galvez Research Neighborhood XG: Xavier/Gert Town TC: Tulane/Canal HC: Downtown Health Campus CC: Civic Center

Transportation			
Key Area	Action	Responsible	Phase
<b>Roadways</b>			
DISTRICT	Bring all streets within the BioDistrict to a minimum standard of pedestrian amenities. All streets should have level and even sidewalks, ADA-accessible curb ramps, pedestrian signals at signalized intersections and street trees.	City, LADOTD, RPC	1
DISTRICT	Include "Smart Street" upgrades in the design and construction of Tulane Avenue upgrades.	RPC, City, SWB and DPW	1
	Modify street sections as indicated in this plan.		
DISTRICT	Claiborne Ave	RPC	3
DISTRICT	Poydras St	City	2
DISTRICT	Tulane Ave	RPC	1
DISTRICT	Broad St	RPC	1
DISTRICT	Broad St Bridge	RPC	2
DISTRICT	Earhart Blvd	LADOTD	3
DISTRICT	Banks St	City	2
DISTRICT	Galvez St	City	1
DISTRICT	Cleveland Ave, Neighborhood Streets, Mid-City & Gert Town	City	2
GRN	Extend Rocheblave, Tonti and Miro Streets from Perdido St to northern alignment of Poydras St.	City	1
XG	(Xavier University): Extend Howard Ave to connect Pine and Short Streets.	City	2
	Redesign designated roadways as limited-vehicular use pedestrian malls, with ability to close to vehicular traffic for special events.		
TC	Cleveland Ave, from Claiborne to Marais	City	2
CC	Perdido St, from LaSalle to Loyola	City	2
HC	Gravier St, from Claiborne to LaSalle	City	2
CC	Gravier St, from LaSalle to Loyola	City	2
TC	Remove I-10 on- and off-ramps at Tulane and Cleveland Avenues. Vacate right-of-way and re-assemble blocks.	LADOTD, RPC	1
TC / HC	On eastbound Tulane Ave, eliminate left-turn pocket at Villere St. Expand median and introduce pedestrian refuge.	RPC	1
Mid-City	Vacate Banks Street from Rocheblave Street to Tulane Avenue. Assess signal warrant at Rocheblave Street/Tulane Avenue intersection to accommodate mobility lost due Banks Street vacation.	City	1
<b>Parking</b>			
XG	(Xavier University): Transition from surface to structured parking, in order to free land for institutional expansion.	BDNO	1
XG	(Xavier University): Connect Howard Ave between Pine and Short Streets.	City	1
CC	Commission a parking demand and utilization study for the Civic Center area. Study should assess utilization of the existing Tulane University parking structure, the potential for shared or district parking, and the need/sizing for a new Civic Center district structure to accommodate an enlarged City Hall and a new, larger Civil District Courts building.	BDNO	1

GRN: Galvez Research Neighborhood XG: Xavier/Gert Town TC: Tulane/Canal HC: Downtown Health Campus CC: Civic Center

Transportation			
Key Area	Action	Responsible	Phase
<b>Bikes</b>			
	Introduced marked, on-street bike lanes on the following streets:		
DISTRICT	Banks St	City	1
DISTRICT	Tulane Ave	City	2
DISTRICT	Broad St	RPC	1
DISTRICT	Galvez St	City	1
DISTRICT	Claiborne Ave	RPC	1
DISTRICT	Canal St	City	1
	Introduce off-street bike lanes/multi-use paths on the following corridors:		
DISTRICT	Poydras St (Broad to Claiborne)	City	1
DISTRICT	former railroad ROW (Carrollton to Broad, in Gert Town)	City	1
DISTRICT	Update New Orleans Metropolitan Bicycle and Pedestrian Plan (September 2006) with proposed BioDistrict bike facilities.	RPC, City	1
DISTRICT	Introduce permanent Bike Share programs with corporate sponsorship	City, BDNO, DDD	1
<b>Transit</b>			
DISTRICT	Provide rubber-tired circulator service, as shown in the Plan, between Claiborne, Tulane, Carrollton and Washington	BDNO, RTA	1
	Introduce streetcar along the following corridors:		
TC / CC	Loyola Ave	LADOTD, RTA	1
XG	MLK Blvd/Washington Ave	LADOTD, RTA	2
XG	Carrollton Ave	LADOTD, RTA	3
DISTRICT	Implement District wide and Downtown Car Share Program	City, BDNO, DDD	2

GRN: Galvez Research Neighborhood XG: Xavier/Gert Town TC: Tulane/Canal HC: Downtown Health Campus CC: Civic Center

<b>Utilities</b>			
<b>Key Area</b>	<b>Action</b>	<b>Responsible</b>	<b>Phase</b>
DISTRICT	Initiate discussions with telecommunications providers regarding commercial and residential upgrades. Determine potential timing, and order of magnitude costing.	City	1
DISTRICT	Enter into discussions with Entergy to provide BioDistrict related projects with connections to the Entergy Thermal power generation system	BDNO, City	1
DISTRICT	Prepare a comprehensive capital improvements plan and program to anticipate and fund necessary public infrastructure. Plan should evaluate capacity and condition of existing utilities, and prioritize upgrades/replacements with respect to anticipated areas of development focus (upgrade) and urgency of condition (repair/replace). Special focus and interface should occur with Entergy relative to power supplied by their 'thermal plant.' Plan should include: water, sewer, electric, telecommunications.	City	1
DISTRICT	Provide access and connections to dark fiber network connecting to the 100 gigabyte connection at 1515 Poydras	BDNO	1

GRN: Galvez Research Neighborhood XG: Xavier/Gert Town TC: Tulane/Canal HC: Downtown Health Campus CC: Civic Center

## Costing Buildings

### Research

2010 order of magnitude construction costs for research buildings are in the \$375/GSF range, exclusive of land and soft costs. Soft costs are typically estimated at an additional 25-35 percent (\$95 - \$130/GSF), bringing the total estimated cost to \$470 - \$505/GSF. Soft costs may include consultant fees, owner management fees, permits, insurance, project communications, bonding or borrowing costs, or other location-specific expenses. (Costing Source, Cannon Design 2011)

The Action Plan assumes an average R&D building of approximately 100,000 Sq. Ft.; using the rough numbers cited above, 2010 costs for such a building would be approximately \$50 million. In total, the 1.4 million square feet of research space envisioned by the Action Plan would have a value of over \$678 million.

### Academic

At the time of writing, academic construction is estimated at approximately \$300/GSF, exclusive of land and soft costs. As with research buildings, soft costs add 25-35 percent (\$75 - \$105/GSF) to this estimate, for a total cost of \$375 - \$405/GSF. (Costing Source, Cannon Design 2011)

Although the size of proposed academic building in the plan vary widely, the likely Delgado Community College expansion can be used as an example of cost. The two new academic buildings immediately east of their existing structure have footprints of approximately 21,000 GSF. At five floors, such a building would be in the range of \$40 - \$43 million dollars (exclusive of land and demolition of existing structure.)

At 3.2 million GSF, the Action Plan's institutional expansion, in 2010 dollars, would cost over \$1.2 billion.

### Mixed-Use Residential

Mixed-use residential, with apartments or condominiums over ground-floor retail, is recommended in both Galvez Research Neighborhood and the Tulane Ave/Canal St. development area. Rough costs for these components, in a mixed-use building, are as follows: residential \$190-225/GSF, retail \$250-270/GSF, structured parking \$20,000/space. Soft costs would be an additional 15 percent on top of these costs. (costing source, AECOM Economics)

As an example, a typical mixed-use residential building facing Tulane Avenue in Galvez Research Neighborhood offers 22,000 Sq. Ft. of ground floor retail, and 123 dwelling units (148,000 GSF, with each unit at 1200 GSF). Structured parking is provided at 1.5 space/DU, and 4/1000 GSF retail, for a total of 296 spaces (184 residential, 89 retail). The approximate cost of this project would range between \$39 and \$52 million.

### Retail

The Plan includes very limited stand-alone retail, typically costing \$80 - \$90/GSF plus 15 percent soft costs for single-story construction. The 40,000 GSF retail on the corner of Tulane Avenue and Dorgenois Street in the Galvez Research Neighborhood would be estimated at approximately \$3.9 million. (cost source: AECOM Economics)

## Transit Infrastructure

### Streetcar

New Orleans' three existing streetcar lines use historic vehicles running in dedicated median rights-of-way. The Action Plan supports the planned introduction of streetcar on Loyola Avenue, and recommends two additional lines on MLK Boulevard/Washington Avenue, and on Carrollton Avenue.

Headway: 8 - 15 minutes  
 Route length: 1 - 7 miles  
 Right of way: dedicated or shared  
 Costs: \$15 - 20 million/mile, depending on utilities, streetscape, and right-of-way

These two additional lines recommended in the Action Plan would be part of a larger city system extending beyond the BioDistrict. The segments within the boundaries of the BioDistrict would be approximately 1.25 (Carrollton) and 4.10 (MLK/Washington) miles, at an approximate construction cost of \$19 - 25 million and \$62 - 82 million, respectively.

### Circulator

A District circulator may be a full- or half-size bus, often with specialized graphics or branding. Circulator service uses existing city streets for scheduled, fixed-route operations and stop at bus shelters and street corners either in a predetermined manner or according to requests made by passengers. Because they are integrated into existing vehicular traffic, speed and reliability of circulator service depends upon the capacity and efficiency of the existing street network.

Headway: 15 minute peak  
 30 minute non peak  
 Route length: varies  
 Right of way: shared  
 Costs: \$340 (half-size) - \$380 (full-size) per vehicle, total system cost minimal as buses use existing roadway infrastructure

The circulator recommended in the Action Plan would run an approximately 5-mile loop. Planning for bi-directional service, a minimum of 3 (including 'spare') buses would

# Section 05: Appendices





# Appendix A

## Summary of Working Papers

### Working Paper 1: Stakeholder Interviews

Working Paper 1 (WP1) summarizes the results of the project's first series of stakeholder interviews. Outreach sessions were held over the course of three weeks in March and April 2010, and included both one-on-one and small group interviews. In total, this effort included over 75 meetings and 160 individual stakeholders.

Participants at these sessions discussed both existing conditions, including needs and opportunities, as well as future conditions, in the form of desires, expectations and visions. WP1 organizes these comments into several broad categories, including: Branding & Messaging, Urban Design, Funding, Processes & Procedures, Education & Workforce Development, Biosciences Industry, Economic Development, Transportation and Utilities.

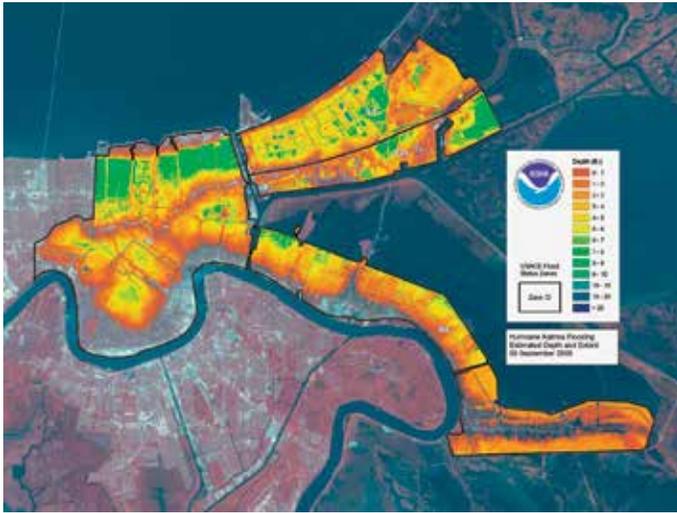
From these categories, the consultant team distilled nine key elements of success for the BioDistrict master planning process. These elements are reproduced here in their entirety:

1. "Creating a Place" - Developing creative concepts and ideas for the plan and its implementation that define the BioDistrict as a distinct place reflecting the unique character and quality of New Orleans;
2. "Public and Civic Leadership" - Using public-private partnerships with strong business leadership that align with the new administration's strategic goals;
3. "Acting as One" - Funding and incentives for the BioDistrict's continuing operations, as well as for business attraction and community revitalization;
4. "Enhanced Review Procedures" - Establishing processes and procedures that expedite the City's approval process for developments within the BioDistrict;



Stakeholder interviews identified adaptive reuse and historic preservation as a community priority.

5. "Creating an Industry" - Developing a strategy to encourage key stakeholders, public agencies, research institutions and private companies to work together for the successful establishment of a biosciences industry;
6. "Historic Context" - Adaptive reuse of some of the buildings, with a focus on Charity Hospital and VA complexes;
7. "Employment Opportunities" - Job training programs and policies to ensure a workforce that is ready to accommodate the emerging needs of the biosciences industry;
8. "Public Engagement" - An effective and engaging public participation and outreach program that is an integral and ongoing part of this planning effort; and,
9. "Getting the Word Out" - A marketing strategy that is backed by media programs that creates strong community awareness.



Data gathering examined physical and policy-based information relating to redevelopment and revitalization efforts in and around the BioDistrict.

### Working Paper 2: Data Gathering

Working Paper 2 (WP2) inventories and summarizes physical and policy-based background data relevant to the BioDistrict Master Planning Effort. The document includes a brief synopsis of policies, studies, reports, plans and projects dealing with all or portions of the District. Materials surveyed come from a variety of sources and jurisdictional levels, including BioDistrict, City/Regional/State/Federal agencies and Institutions/Communities/Private Developers. WP2 also reviews market and economic-specific studies from a variety of sources, as well as a small number of more broad-based analyses of historic preservation, national broadband capability and Hurricane Katrina related documents.

Working Paper 2 also identifies existing data gaps, both physical and policy-related, where the consultant team needs additional information. WP2 Appendix includes the full text of the Biotechnology Parks case study carried out by one of the consultant team members as part of the preliminary data gathering effort.

### Working Paper 3: Existing Conditions Assessment & Context Mapping

Working Paper 3 (WP3) contains comprehensive mapping and analysis of existing conditions within the BioDistrict Master Planning area. The analysis is divided into eight sections, summarized below.

#### BioDistrict Overview

The bulk of topics covered in this section are covered in more detail in subsequent sections. Background information presented in this section does note that the majority of land within the BioDistrict is under private ownership, with most parcels impacted by one or more overlay districts. Overlays include cultural districts, specific city land use overlays, as well as Enterprise Zones.

#### Community and Social Context

This section offers a comprehensive list of institutional and jurisdictional stakeholders, including a matrix of each organization's mission, BioDistrict involvement or interest and contact persons. The section also makes recommendations regarding how to most appropriately involve each entity.

#### Urban Design

This section identifies eight sub-districts within the larger BioDistrict project area: Urban Medical, Utilitarian and Emergency Access, Light Industrial, Vacant Land, Historic Residential, Business/Office/Sports Complex, Public Use Theater District/Visitor & Quasi-Downtown.

This section also notes that land use throughout the BioDistrict falls into eight general categories: residential, commercial, industrial/manufacturing/waste-related, social/institutional/infrastructure, parking, religious/cultural, leisure/recreational, and vacant/unused. Of these general categories, almost three-quarters of the land in the BioDistrict is institutional, medical/industrial, parking or vacant.

### Traffic Analysis

Congestion within the BioDistrict is very low, with the majority of roadways operating at Level of Service (LOS) C (described as at or near free-flow traffic operation, although maneuverability, including lane changes, is noticeably restricted) or better. LOS C is the targeted LOS for many urban roadways. Traffic Impact Analysis has already been completed for the UMC and VA projects; additional traffic generated by these projects will not have significant adverse effects on area roadways, and will not exceed the current capacity for Tulane Avenue or Canal Street. Both of these roadways currently operate at LOS B (described as 'reasonable free flow operations', with traffic flowing at or above posted speeds) in the VA and UMC area, with a drop to LOS C at the Broad and Claiborne intersections.

The Regional Planning Commission (RPC) has completed the planning portion of the Tulane Avenue improvement project. These plans call for a reduction in vehicular travel lanes, from six to two, with an addition of dedicated bicycle lanes and a center median; curblines would remain in their current location. While this new cross section reduces roadway capacity, existing traffic volumes would still be maintained. Construction of this project is not funded at this time.

Transit service in the area is provided by RTA (bus and streetcar) and by LSU, Tulane University and the VA (private shuttle). Public transit is expected to evolve and change in response to District redevelopment. The VA plans to discontinue shuttle service once its new facilities are complete, although walk/bicycle distance between the new facilities and other existing medical destinations will be longer once the new VA facility is in place.

### Utilities

Every address location within the BioDistrict has access to all basic utilities: water, wastewater, stormwater, electricity, gas and telecommunications. While

availability is not an issue, adequate supply may pose a problem depending on the functional demands of future development beyond that of existing facility use.

### Sustainability

This section identifies a series of sustainability themes applicable to the BioDistrict: green infrastructure and natural systems, transportation and urban design, energy water supply and waste, economic and social sustainability, and comprehensive sustainability programming. A matrix of opportunities and constraints associated with each element of sustainability is provided.

### Strengths, Weaknesses, Opportunities & Threats

This section provides a synthesized assessment of what is necessary to move the BioDistrict from concept to reality. Primary threats include significant competition from other states to create similar development nodes, and the large up-front funding and long development time frame required for such an undertaking. Weaknesses within the existing New Orleans context include the city and state's less educated workforce and below-average per capita income, making it difficult to attract and retain the talent necessary to create the District. It may also prove challenging that the BioDistrict has no eminent domain authority for economic development.

The District's strengths, however, include a strong base of science- and health-oriented institutions, competitive industrial and commercial land prices, and a higher-than-national-average growth rate within the city of New Orleans. From these strengths come a number of opportunities including potential synergies between institutions and local organizations and the development of translational medicine based on the research being performed by the institutions. The institutions also have the potential to position themselves as leaders in emerging therapies.

## Working Paper 4 Appendices: Real Estate, Biosciences and Educational/Hospital Programming

Working Paper 4 (WP4) summarizes the findings of the preceding three tasks, documented in Working Papers 1, 2 and 3. WP4 also includes a summary of study the market and economic impacts and opportunities of the BioDistrict area, focussing on

- identification of medical / bioscience conditions and trends in New Orleans, Louisiana, and the United States
- evaluation of local universities and institutions' areas of expertise in medical research and bioscience
- identification of potential public / private partnerships
- setting the stage for the essential dialogue among participating institutions that will be needed to build the scientific foundation for BioDistrict New Orleans moving forward.

During the course of Task 4, representatives from the AECOM Team met with a broad array of stakeholder groups, including representatives of universities, businesses, and civic and community organizations. The input of these individuals was invaluable in describing the current strengths, needs, and opportunities of the biomedical community in New Orleans and the complex issues that will have to be considered in creating the BioDistrict. Issues and opportunities raised in these discussions are central to the content of this report and are presented as a starting point for dialogue among the key medical, academic, government, corporate, and scientific institutions whose participation and vision will be essential to the development of the BioDistrict project.



Bioscience research and development will be a major economic driver of the BioDistrict.

This analysis concludes that in 20 years, the BioDistrict has the potential to generate:

- 17,200 new or saved jobs,
- \$2.5 Billion in Economic Activity,
- \$850 Million in Personal Earnings.
- \$25 Million in Annual Sales Tax Generated.
- \$22 Million in Annual Local Tax Generated.
- 1.6 Million SFt of Absorbed or New Space.



Visioning workshops asked the public what they hoped to see, physically and policy-wise, in the BioDistrict..

### Working Paper 5: Visioning Workshops

In September 2010, four stakeholder workshops were held to solicit community input on the following specific topics: workforce development, Community Benefits Agreements (CBAs) and community vision (2 workshops). Working Paper 5 (WP5) summarizes participant input on these topics, and uses this feedback to create a draft BioDistrict Vision Statement, supported by eight specific community goals.

Community members identified action items related to each of the three workshop topics. For workforce development, the creation of a unified task force and the development of a comprehensive workforce development strategy topped the list. There is also a pressing need to establish a GED testing center in New Orleans. The CBA workshop identified the need to create a CBA Task Force, identify appropriate community leaders to act as point people for developers interested in the neighborhood, and develop a slide show to educate the community about CBA's. Community Visioning Workshops identified the following action items for the BioDistrict consultant team: establish ongoing dialogue with community and stakeholder groups, provide better notification of future public meetings and present findings from visioning workshops at future public meetings.

### BioDistrict Vision Statement

In 2030, BioDistrict New Orleans is a thriving cultural, business, science and health destination, regarded throughout the city as a district of choice: a walkable community with excellent schools and services, vibrant commercial areas, rich historic neighborhoods and accessible open space and transit.

A mix of existing, new and affordable single-family and higher-density housing retains and attracts a diverse community, including many institutional faculty and staff who choose to live and work in the BioDistrict.

The presence of excellent colleges, universities and hospitals is leveraged into resources for improving the area: technical assistance for job training and small businesses; institutional research translated into successful businesses; improved K-12 schools; and supporting families living in the BioDistrict.

The vision statement will be realized through the accomplishment of eight goals:

- Training for and creation of jobs
- First-rate schools
- Protected and strengthened neighborhood character and quality
- Vibrant, community-serving business and retail
- New and renovated sustainable developments
- Safe, attractive, walkable neighborhoods
- Abundant, accessible parks and recreation
- Excellent roadways, utilities and infrastructure
- Safe, abundant, accessible transportation

A small number of constituents called for an "Opt Out" option. It was soundly defeated and failed to gain any traction among the stakeholders that participated in the visioning sessions.

### Working Paper 6: Alternative Plan Exploration

Working Paper 6 (WP6) summarizes the results of a series of five physical planning workshops held in November 2010. Workshops focused on small-group brainstorming in which participants discussed and mapped their ideas and priorities for the BioDistrict; this exercise resulted in the 10 alternative plan concepts included in WP6. It should be noted that these plan concepts are not complete plans, but rather compilations of the brainstorming process, intended to be used as the framework for three to four full alternative plans at the next step of the planning process. A graphic of each plan, with bulleted 'big ideas' is included in the working paper.

Certain themes were common among many of the alternatives. Among these points were the importance of neighborhood preservation and an appropriate distribution of density, with most participants wishing to focus density in the area immediately adjacent to the VA

and UMC complexes. Participants desire preservation of lower building heights and smaller footprints within the core Mid-City neighborhood, as well as strengthening of existing or historic neighborhood retail. Broad Street was identified as a desired location for smaller retail interests, with larger, more intense retail directed to Tulane Avenue. There was a strong desire for either a grocery store, small mom-and-pop grocers, or both.

Stakeholders were also very vocal regarding the need for enhanced bicycle and pedestrian facilities, underlining a desire for on-street bike lanes and safe, non-vehicular connection across I-10. Community members also spoke of the importance of redevelopment and revitalization in Gert Town in particular, and are looking for ways to better integrate the justice center into the overall neighborhood fabric. Much discussion also centered around the need for improved transit and for a greater number of neighborhood and community parks.

Although not as frequently heard, the workshops also



At physical planning workshops, the public were asked to identify elements they liked, disliked, or weren't sure about by marking up alternative plans.

gave rise to a number of additional, physical-planning suggestions, a sampling of which are included below:

- Regional TOD hub at Carrollton Ave and I-10/Tulane Ave
- Reconnect streetcar or LRT along Carrollton Ave
- Streetcar on Tulane Ave
- Remove concrete plant in Gert Town
- Identify sub-district within the BioDistrict
- Remove elevated portion of I-10 on Claiborne Ave
- TOD node at Canal St. & Claiborne Ave
- BioDistrict gateways at Loyola & Tulane Aves and at Carrollton & Tulane Aves
- Civic node at Jeff Davis Blvd. & Tulane Ave
- Reinvest in historic retail on Galvez St. between Canal St. and Tulane Ave
- Renovate, reuse and infill Charity Hospital and former VA hospital
- Shared student recreation center
- Urban agriculture, community gardens, pedicabs
- Pedestrian connection over I-10 to connect to Xavier University
- Open-air water features throughout the BioDistrict
- Steam baths, saunas and spas near medical district
- Farmers' Market
- Maintain pockets of historic buildings
- Keep and enhance industrial area
- Opting out of the BioDistrict
- Potential inclusion of Zion City in the BioDistrict
- Public parking near the criminal court complex

## Working Paper 7: Refined Alternative Plans

Working Paper 7 (WP7) summarizes the four alternative plans which were developed from the 10 alternative plan concepts described in Working Paper 6. Each of the four alternative plans has a different development focus, as described below. The four plans were presented at a public meeting in January 2011 to obtain stakeholder feedback on the plans; WP6 includes public comment on each of the four plans, divided into key topics, as well as sign-in sheets from the public meeting.

### Alternative A: Civic/Institutional Development Focus

Alternative A focuses development energy in the riverside portion of the BioDistrict, emphasizing civic and institutional expansion as a catalyst for downtown revitalization. A new health sciences campus located in the Charity Hospital complex anchors the plan. The campus would be shared by UNO, SUNO, LSU, Dillard, Xavier, Tulane and other institutions related to biotechnology/biomedical fields of study. The plan also calls for a math and science high school, a healthcare magnet school, and a renovated and expanded City Hall and Duncan Plaza. The plan works toward increased daytime activity in this area, promoting additional complementary retail and commercial development to serve this expanding pool of consumers.

The plan also shows growth of LSU and Tulane Medical Schools, focusing this expansion on Tulane Avenue and Canal Street in order to reinforce the urban feel of the school and the adjacent neighborhood. Institutional growth includes a central park space, consistent with the central greenway/pedestrian mall proposed in Tulane's master plan.

### Alternative B: Neighborhood Development Focus

Alternative B seeks to leverage public investment in the form of neighborhood-scale amenities as a means to community revitalization. LSU, Tulane, UMC and other institutions will develop according to their own planning efforts.

Main development on this plan focuses on renovation of City Hall and Duncan Plaza, as well as a large regional park along I-10. Existing neighborhood retail within Mid-City is enhanced to create two blocks of 'Main Street' character, while a new park, town homes and duplexes between Rocheblave and Broad Streets serve to ease transition height and scale between the VA and the adjacent neighborhood.

### Alternative C: Strategic Node Development Focus

Alternative C directs redevelopment to a number of highly active, pedestrian-oriented nodes. These nodes are located at key intersections within the BioDistrict, and are defined by a five-minute walking radius. This system of nodes offers the opportunity to create distinct character areas within the larger BioDistrict, and to create gateways and identity features specific to these new micro-neighborhoods.

The I-10 overhead structure is removed, and new roundabouts introduced on Claiborne Avenue at Canal Street and at Poydras Street. These roundabouts emphasize adjacent development nodes, focused on institutional development and the Superdome/new neuroscience facility, respectively. Additional development nodes are located on Tulane Avenue at Jeff Davis Parkway and at Broad Street, and at Carrollton and Washington Avenues.



Refined Alternative Plans considered the pros and cons of different development schemes. Here, Alternative C looks at clustering development into nodes.

### Alternative D: Baseline Development Focus

Alternative D offers a conservative development approach, with limited redevelopment in the riverside and uptown portions of the BioDistrict. This alternative is also distinct in that it does not propose the redesign of I-10 and Claiborne Avenue.

Institutional expansion at Tulane and LSU is arranged around public green spaces, providing amenity to the public realm. As in the other three alternatives, City Hall is redesigned and revitalized. The I-10 ramp configuration is retained, limiting new research and development buildings between Broad and Galvez Streets, just downriver of I-10. The bulk of remaining development in this scheme is limited to strategic infill parcels along key arterials, with the heart of Mid-City and Gert Town intended to redevelop organically as market demands.

## Working Paper 8: Preferred Plan

Working Paper 8 (WP8) summarizes the final preferred plan that emerged from the four refined alternatives described in Working Paper 7. Stakeholder feedback resulted in two significant directives for the Preferred Plan. First, community stakeholders felt strongly that large-scale, planned development should be directed to non-neighborhood areas of the district, and that existing, largely residential areas be left to redevelop organically. Secondly, residents indicated that there is no need or interest in a large, regional open space or park as represented in several of the alternatives. Concerns regarding the lack of maintenance in existing parks, and the proximity of the Lafitte Greenway as a significant regional recreational resource were the driving factors behind this sentiment.

With these two key factors in mind, the Preferred Plan seeks to strengthen the 'key development areas' concept on which previous alternatives were built. The Plan identifies five key areas largely outside of the District's core residential areas in Gert Town, Mid-City and New City. The plan focuses instead on the following five areas: Xavier / Gert Town (emphasizing the interface between institution and community, more than intervention within the neighborhood), Galvez Research Neighborhood, Tulane Avenue/ Canal Street, Downtown Health Campus, Civic Center.

### Key Elements: carried forward

A number of elements from prior alternatives have been carried forward into the preferred plan. These elements, along with the alternatives in which they were included, are listed below:

- City Hall Revitalization and associated redevelopment of Duncan Plaza. (A, B, C, D)
- A new health sciences campus around the former Charity Hospital complex. (A)
- Expansion of Tulane Medical School. (A)
- Reconfiguration of I-10/Claiborne Avenue interchange. (B, C)
- Claiborne Avenue at grade. (A, B, C, D)

### Key Elements: new

Recombination of the plan 'pieces' found in the alternatives highlighted new opportunities and issues to be addressed in the preferred plan. New elements not shown in prior alternatives are listed below:

- Linear park redevelopment of retired railroad ROW in Gert Town. (new)
- Internal BioDistrict shuttle loop.
- Bicycle connections on 1/2-mile grid.
- Long-term 'temporary' container nurseries to source BioDistrict street trees and plant materials.
- Close-able, pedestrian-oriented streets.

# Appendix B

## Cost Estimates: Roadway Reconstruction

### Claiborne Avenue

DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT	NOTES
Clearing and Grubbing	2960	LF	\$ 16.67	\$ 49,343.20	
Demolition At-Grade	2960	LF	\$ 217.52	\$ 643,865.78	
Roadway	40783	SY	\$ 198.61	\$ 8,099,986.27	
Sidewalks	2960	LF	\$ 169.69	\$ 502,279.11	
Utility Relocations	2960	LF	\$ 49.65	\$ 146,972.75	
Lighting	2960	LF	\$ 245.00	\$ 725,200.00	25% increase for special lighting
Landscaping	2960	LF	\$ 100.00	\$ 296,000.00	trees, planter boxes @ 150' o.c.
Remove and Replace Covered Canal	2960	LF	\$ 14,760.00	\$ 43,689,600.00	
I-10 Demolition (structure)	1	LS	\$ 38,780,551.00	\$ 38,780,551.00	
Construct US 90 Structure	99400	SF	\$ 85.00	\$ 8,449,000.00	
				Subtotal	\$ 101,382,798.11
Mobilization			10% of Subtotal Cost	\$ 10,138,279.81	signif. Demo
Traffic Control			10% of Subtotal Cost	\$ 10,138,279.81	signif. Demo in high traffic areas
				Subtotal	\$ 121,659,357.73
Contingency			20% of above Subtotal	\$ 24,331,871.55	
				Total Construction Cost	\$ 145,991,229.28 \$ 49,321.36 per LF
Environmental (3% of Total)				\$ 4,379,736.88	
Design (8% of Total)				\$ 11,679,298.34	
CE&I (10% of Total)				\$ 14,599,122.93	
				TOTAL BUDGET	\$ 176,649,387.43

#### Assumptions

1. Structural Demolition includes the removal of portions of the structures listed below necessary to complete the project as proposed. The item does not include full demolition of the structures or improvements to other structures or roadways necessary to complete the full deconstruction of the Claiborne Avenue elevated expressway.

I-10 Demolition (structure) (Tulane to Iberville)	207760	sf	\$ 38.00	\$ 7,894,880.00
Tulane Ave. & Canal St. Ramp Demolition (structure)	37500	sf	\$ 38.00	\$ 1,425,000.00
I-10 WB	170620	sf	\$ 48.00	\$ 8,189,760.00
I-10 WB to US 90B	151250	sf	\$ 48.00	\$ 7,260,000.00
I-10 EB	174132	sf	\$ 48.00	\$ 8,358,336.00
US 90B to I-10 EB	32125	sf	\$ 43.00	\$ 1,381,375.00
US 90 to I-10 EB	13000	sf	\$ 38.00	\$ 494,000.00
US 90	99400	sf	\$ 38.00	\$ 3,777,200.00
			TOTAL	\$ 38,780,551.00

2. Cost is for total reconstruction of roadway within the project limits stated above.
3. Replacement of covered canal costs include replacement of canal within the project limits including dewatering.
4. Lighting Cost includes lighting every 150 feet.

## Poydras Street (Broad to Galvez)

DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Clearing and Grubbing	2000	LF	\$ 16.67	\$ 33,340.00
Demolition	16444	SY	\$ 32.93	\$ 541,564.28
Roadway	11444	SY	\$ 198.61	\$ 2,273,002.06
Sidewalks	2000	LF of road	\$ 169.69	\$ 339,377.78
Utility Relocations	11444	SY	\$ 49.65	\$ 568,250.51
Lighting	2000	LF	\$ 196.00	\$ 392,000.00
Landscaping	2444	SY	\$ 25.17	\$ 61,531.25
			Subtotal	\$ 4,209,065.88
Mobilization			5% of Subtotal Cost	\$ 210,453.29
Traffic Control			5% of Subtotal Cost	\$ 210,453.29
			Subtotal	\$ 4,629,972.47
Contingency			20% of above Subtotal	\$ 925,994.49
			Total Construction Cost	\$ 5,555,966.96 \$ 2,777.98 per LF
Environmental (3% of Total)				\$ 166,679.01
Design (8% of Total)				\$ 444,477.36
CE&I (10% of Total)				\$ 555,596.70
			TOTAL BUDGET	\$ 6,722,720.03

Assumptions:

1. Lighting Cost includes lighting every 150 feet.
2. Utility relocations are considered to be 25% of the cost of the roadway improvement.  
Unknown major utility items may increase the costs of this item.
3. Cost is for total reconstruction of roadway within the project limits stated above.
4. Assumes no improvements to the Broad Street ramp.

## Poydras Street (Galvez to Claiborne)

DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Clearing and Grubbing	1800	LF	\$ 16.67	\$ 30,006.00
Demolition	9600	SY	\$ 32.93	\$ 316,156.45
Roadway	9600	SY	\$ 198.61	\$ 1,906,673.57
Sidewalks	1800	LF of road	\$ 169.69	\$ 305,440.00
Utility Relocations	9600	SY of road	\$ 49.65	\$ 476,668.39
Lighting	1800	LF of road	\$ 196.00	\$ 352,800.00
Landscaping	6400	SY	\$ 25.17	\$ 161,100.00
Traffic Signals	2	intersection	\$ 100,000.00	\$ 200,000.00
Ramp Demolition (structure)	33500	SF	\$ 30.00	\$ 1,005,000.00
Ramp Demolition (at grade)	680	LF	\$ 22.05	\$ 14,994.00
Structure Rehab	6000	SF	\$ 45.60	\$ 273,600.00
			Subtotal	\$ 5,042,438.41
Mobilization			8% of Subtotal Cost	\$ 403,395.07 due to demolition
Traffic Control			5% of Subtotal Cost	\$ 252,121.92
			Subtotal	\$ 5,697,955.40
Contingency			20% of above Subtotal	\$ 1,139,591.08
			Total Construction Cost	\$ 6,837,546.48 \$ 3,798.64 per LF
Environmental (3% of Total)				\$ 205,126.39
Design (8% of Total)				\$ 547,003.72
CE&I (10% of Total)				\$ 683,754.65
			TOTAL BUDGET	\$ 8,273,431.24

### Assumptions:

1. Ramp Demolition includes removal of the I-10 on-ramp from Poydras Street.
2. Lighting Cost includes lighting every 150 feet.
3. Utility relocations are considered to be 25% of the cost of the roadway improvement. Unknown major utility items may increase the costs of this item.
4. Cost is for total reconstruction of roadway within the project limits stated above.

## Tulane Avenue (Carrollton to Claiborne)

DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Clearing and Grubbing	9430	LF	\$ 16.67	\$ 157,198.10
Demolition	111064	SY	\$ 32.93	\$ 3,657,681.27
Roadway	73651	SY	\$ 198.61	\$ 14,627,981.97
Sidewalks	9430	LF of road	\$ 296.96	\$ 2,800,290.89
Utility Relocations	73651	SY	\$ 49.65	\$ 3,656,995.49
Lighting	9430	LF	\$ 196.00	\$ 1,848,280.00
Landscaping	15717	SY	\$ 25.17	\$ 395,617.97
			Subtotal	\$ 27,144,045.69
Mobilization			5% of Subtotal Cost	\$ 1,357,202.28
Traffic Control			5% of Subtotal Cost	\$ 1,357,202.28
			Subtotal	\$ 29,858,450.26
Contingency			20% of above Subtotal	\$ 5,971,690.05
			Total Construction Cost	\$ 35,830,140.31
				\$ 3,799.59 per LF
Environmental (3% of Total)				\$ 1,074,904.21
Design (8% of Total)				\$ 2,866,411.22
CE&I (10% of Total)				\$ 3,583,014.03
			TOTAL BUDGET	\$ 43,354,469.77

Assumptions:

1. Lighting Cost includes lighting every 150 feet.
2. Utility relocations are considered to be 25% of the cost of the roadway cost.  
Unknown major utility items may increase the costs of this item.
3. Cost is for total reconstruction of roadway within the project limits stated above.
4. Cost for sidewalks increase due to 12 foot wide sidewalks.

## Tulane Avenue (Claiborne to Loyola)

DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Clearing and Grubbing	1750	LF	\$ 16.67	\$ 29,172.50
Demolition	20611	SY	\$ 32.93	\$ 678,784.96
Roadway	14078	SY	\$ 198.61	\$ 2,796,013.21
Sidewalks	1750	LF of road	\$ 296.96	\$ 519,672.22
Utility Relocations	14078	SY	\$ 49.65	\$ 699,003.30
Lighting	1750	LF	\$ 196.00	\$ 343,000.00
Landscaping	2917	SY	\$ 25.17	\$ 73,417.97
			Subtotal	\$ 5,139,064.17
Mobilization			5% of Subtotal Cost	\$ 256,953.21
Traffic Control			5% of Subtotal Cost	\$ 256,953.21
			Subtotal	\$ 5,652,970.58
Contingency			20% of above Subtotal	\$ 1,130,594.12
			Total Construction Cost	\$ 6,783,564.70 \$ 3,876.32 per LF
Environmental (3% of Total)				\$ 203,506.94
Design (8% of Total)				\$ 542,685.18
CE&I (10% of Total)				\$ 678,356.47
			TOTAL BUDGET	\$ 8,208,113.29

### Assumptions:

1. Lighting Cost includes lighting every 150 feet.
2. Utility relocations are considered to be 25% of the cost of the roadway improvement. Unknown major utility items may increase the costs of this item.
3. Cost is for total reconstruction of roadway within the project limits stated above.
4. Cost for sidewalks increase due to 12 foot wide sidewalks.

## Galvez Street (Poydras to Iberville)

DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Clearing and Grubbing	44089	LF	\$ 16.67	\$ 734,961.78
Demolition	44089	SY	\$ 32.93	\$ 1,451,977.76
Roadway	28924	SY	\$ 198.61	\$ 5,744,736.85
Sidewalks	5689	SY	\$ 169.69	\$ 965,341.23
Utility Relocations	28924	SY	\$ 49.65	\$ 1,436,184.21
Lighting	3200	LF	\$ 196.00	\$ 627,200.00
Landscaping	9956	SY	\$ 25.17	\$ 250,600.00
			Subtotal	\$ 11,211,001.83
Mobilization			5% of Subtotal Cost	\$ 560,550.09
Traffic Control			5% of Subtotal Cost	\$ 560,550.09
			Subtotal	\$ 12,332,102.01
Contingency			20% of above Subtotal	\$ 2,466,420.40
			Total Construction Cost	\$ 14,798,522.41
Environmental (3% of Total)				\$ 443,955.67
Design (8% of Total)				\$ 1,183,881.79
CE&I (10% of Total)				\$ 1,479,852.24
			TOTAL BUDGET	\$ 17,906,212.12

Assumptions:

1. Lighting Cost includes lighting every 150 feet.
2. Demolition item includes the demolition of roadway pavement within the limits of the roadway s
3. Utility relocations are considered to be 25% of the cost of the roadway improvement.  
Unknown major utility items may increase the costs of this item.
4. Cost is for total reconstruction of roadway within the project limits stated above.
5. The length of project is 3200 feet.

## Earhart Boulevard (Carrollton to Claiborne)

DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Clearing and Grubbing	10400	LF	\$ 16.67	\$ 173,368.00
Demolition	78809	SY	\$ 32.93	\$ 2,595,410.24
Roadway	70404	SY	\$ 198.61	\$ 13,983,155.56
Sidewalks	10400	LF of road	\$ 169.69	\$ 1,764,764.44
Utility Relocations	70404	SY	\$ 49.65	\$ 3,495,766.82
Lighting	10400	LF	\$ 196.00	\$ 2,038,400.00
Landscaping	33511	SY	\$ 25.17	\$ 843,537.50
Bridges over canal at Washington Stree	2	LS	\$ 2,000,000.00	\$ 4,000,000.00
			Subtotal	\$ 28,894,402.57
Mobilization			5% of Subtotal Cost	\$ 1,444,720.13
Traffic Control			5% of Subtotal Cost	\$ 1,444,720.13
			Subtotal	\$ 31,783,842.83
Contingency			20% of above Subtotal	\$ 6,356,768.57
			Total Construction Cost	\$ 38,140,611.39 \$ 3,667.37 per LF
Environmental (5% of Total)				\$ 1,907,030.57
Design (8% of Total)				\$ 3,051,248.91
CE&I (10% of Total)				\$ 3,814,061.14
			TOTAL BUDGET	\$ 46,912,952.01

### Assumptions:

1. Lighting Cost includes lighting every 150 feet.
2. Utility relocations are considered to be 25% of the cost of the roadway improvement. Unknown major utility items may increase the costs of this item.
3. Cost is for total reconstruction of roadway within the project limits stated above.
4. Environmental cost increased for possible mitigation required due to known RECs.
5. Cost does not include any modifications to the ramps to Broad St.

## Broad Street (Gravier to Iberville)

DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT	NOTES
Clearing and Grubbing	2200	LF	\$ 16.67	\$ 36,674.00	
Demolition	19075	SY	\$ 32.93	\$ 628,196.27	
Roadway	19075	SY	\$ 198.61	\$ 3,788,520.66	
Sidewalks	2200	LF of road	\$ 169.69	\$ 373,315.56	
Utility Relocations	19075	SY	\$ 49.65	\$ 947,130.16	
Lighting	2200	LF	\$ 196.00	\$ 431,200.00	
Landscaping	6844	SY	\$ 27.69	\$ 189,516.25	10% for palm trees
			Subtotal	\$ 6,394,552.90	
Mobilization			5% of Subtotal Cost	\$ 319,727.65	
Traffic Control			5% of Subtotal Cost	\$ 319,727.65	
			Subtotal	\$ 7,034,008.19	
Contingency			20% of above Subtotal	\$ 1,406,801.64	
			Total Construction Cost	\$ 8,440,809.83	\$ 3,836.73 per LF
Environmental (3% of Total)				\$ 253,224.30	
Design (8% of Total)				\$ 675,264.79	
CE&I (10% of Total)				\$ 844,080.98	
			TOTAL BUDGET	\$ 10,213,379.90	

Assumptions:

1. Lighting Cost includes lighting every 150 feet.
2. Utility relocations are considered to be 25% of the cost of the roadway improvement. Unknown major utility items may increase the costs of this item.
3. Cost is for total reconstruction of roadway within the project limits stated above.

## Broad Street Bridge

DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT	NOTES
Clearing and Grubbing	800	LF	\$ 20.00	\$ 16,000.00	
Demolition	10044	SY	\$ 32.93	\$ 330,778.68	
Roadway	6400	SY	\$ 198.61	\$ 1,271,115.71	
Sidewalks	800	LF of road	\$ 169.69	\$ 135,751.11	
Utility Relocations	6400	SY	\$ 49.65	\$ 317,778.93	
Lighting (At Grade)	800	LF	\$ 196.00	\$ 156,800.00	
Lighting (On Structure)	2450	LF	\$ 392.00	\$ 960,400.00	lighting on structure
Landscaping	2500	SY	\$ 32.72	\$ 81,808.59	10% for palm trees
Bridge Deck Demo	48860	SF	\$ 35.00	\$ 1,710,100.00	
Bridge	48860	SF	\$ 85.00	\$ 4,153,100.00	
Bridge Modifications	48860	SF	\$ 38.00	\$ 1,856,680.00	deck mods. for widened sidewalk
Existing Deck Rehab/Overlay	106575	sf	\$ 6.75	\$ 719,381.25	overlay deck remains; striping.
			Subtotal	\$ 11,709,694.28	
Mobilization			5% of Subtotal Cost	\$ 585,484.71	
Traffic Control			5% of Subtotal Cost	\$ 585,484.71	
			Subtotal	\$ 12,880,663.71	
Contingency			20% of above Subtotal	\$ 2,576,132.74	
			Total Construction Cost	\$ 15,456,796.45	\$ 7,025.82 per LF
Environmental (3% of Total)				\$ 463,703.89	
Design (8% of Total)				\$ 1,236,543.72	
CE&I (10% of Total)				\$ 1,545,679.64	
			TOTAL BUDGET	\$ 18,702,723.70	

### Assumptions:

1. Lighting Cost includes lighting every 150 feet.
2. Utility relocations are considered to be 25% of the cost of the roadway improvement. Unknown major utility items may increase the costs of this item.
3. Cost is for total reconstruction of roadway within the project limits stated above.

## Banks Street (Carrollton to Rocheblave)

DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Clearing and Grubbing	6400	LF	\$ 16.67	\$ 106,688.00
Demolition	46222	SY	\$ 32.93	\$ 1,522,234.75
Roadway	36800	SY	\$ 198.61	\$ 7,308,915.35
Sidewalks	6400	LF of road	\$ 169.69	\$ 1,086,008.89
Utility Relocations	36800	SY	\$ 49.65	\$ 1,827,228.84
Lighting	6400	LF	\$ 196.00	\$ 1,254,400.00
Landscaping	14222	SY	\$ 25.17	\$ 358,000.00
			Subtotal	\$ 13,463,475.82
Mobilization			5% of Subtotal Cost	\$ 673,173.79
Traffic Control			5% of Subtotal Cost	\$ 673,173.79
			Subtotal	\$ 14,809,823.40
Contingency			20% of above Subtotal	\$ 2,961,964.68
			Total Construction Cost	\$ 17,771,788.08
				\$ 2,776.84 per LF
Environmental (3% of Total)				\$ 533,153.64
Design (8% of Total)				\$ 1,421,743.05
CE&I (10% of Total)				\$ 1,777,178.81
			TOTAL BUDGET	\$ 21,503,863.58

Assumptions:

1. Lighting Cost includes lighting every 150 feet.
2. Utility relocations are considered to be 25% of the cost of the roadway improvement.  
Unknown major utility items may increase the costs of this item.
3. Cost is for total reconstruction of roadway within the project limits stated above.

## Gravier Street (Broad to Loyola) sample neighborhood street

DESCRIPTION	QUANTITY	UNIT	UNIT COST	AMOUNT
Clearing and Grubbing	31556	SY	\$ 2.00	\$ 63,111.11
Demolition	30293	SY	\$ 30.10	\$ 911,852.52
Roadway	19342	SY	\$ 195.77	\$ 3,786,646.97
Sidewalks	10098	SY	\$ 93.33	\$ 942,459.26
Utility Relocations	19342	SY	\$ 48.94	\$ 946,661.74
Lighting	5680	LF	\$ 196.00	\$ 1,113,280.00
Landscaping	8836	SY	\$ 24.09	\$ 212,881.67
			Subtotal	\$ 7,976,893.27 \$ 1,404.38
Mobilization			5% of Subtotal Cost	\$ 398,844.66
Traffic Control			5% of Subtotal Cost	\$ 398,844.66
			Subtotal	\$ 8,774,582.60
Contingency			20% of above Subtotal	\$ 1,754,916.52
			Total Construction Cost	\$ 10,529,499.12 \$ 1,853.79 per LF
Environmental (3% of Total)				\$ 315,884.97
Design (8% of Total)				\$ 842,359.93
CE&I (10% of Total)				\$ 1,052,949.91
			TOTAL BUDGET	\$ 12,740,693.94

### Assumptions:

1. Lighting Cost includes lighting every 150 feet.
2. Demolition item includes the demolition of roadway pavement within the limits of the roadway segment.
3. Utility relocations are considered to be 25% of the cost of the roadway improvement.  
Unknown major utility items may increase the costs of this item.
4. Cost is for total reconstruction of roadway within the project limits stated above.
5. The length of project is 5680 feet.

# Appendix C

## LEED ND Feasibility Analysis

### Overview

The US Green Building Council’s LEED for Neighborhood Development (LEED ND) rating system was evaluated to determine feasibility for application within the BioDistrict. Achieving a level of certification under this popular rating system would help to ensure that the BioDistrict achieves key benchmarks for environmental and social sustainability and would also help to “brand” the BioDistrict as a sustainable community which could help attract world class businesses and future employees. Overall, the BioDistrict is very suitable for achieving many of the LEED ND credits and prerequisites for the following reasons:

Inherent Urban Form Strengths (most credits achievable):

- BioDistrict is entirely previously developed
- Good transit service with several lines in close proximity
- Good street, block density (although VA and UMC will significantly reduce block density)
- Mixed income, mixed use, jobs/housing balance in place

The feasibility analysis revealed that while the entire BioDistrict planning area would not be suitable as a certified LEED ND development in itself due to incompatibility of the LEED ND system for district scale master plans. However, smaller areas and projects within the District could be highly suitable and the LEED ND framework can act as a general guide for district master planning. The most suitable projects to achieve LEED ND certification would be those that are less than contiguous 320 acres, the land is controlled by one or a small number of land owners, and at least 98% of the land is slated for development. Therefore, it was decided that for this master planning effort, key credits and prerequisites that may be planned for at the master planning level would be evaluated and included in the master plan for the BioDistrict in the most suitable areas and that these areas would be designed as LEED ND “Ready”.



## Sample Analysis: Galvez Research Neighborhood

While many areas within the BioDistrict would likely be suitable for LEED ND projects, one area in particular that is planned for significant re-development became the focus for LEED ND “Ready” master planning. This area, the Galvez Research Neighborhood, is the area between the I-10, Broad, Tulane and Johnson Street. The other key development areas identified in this Action Plan will also achieve many of the credits and prerequisites mentioned here, but only the Galvez Research Neighborhood area was evaluated in detail.

This approximately 90 acre Galvez Research Neighborhood has been master planned to include key LEED ND prerequisites and credits that were feasible at the master planning stage, as identified in the tables on the following pages. In most cases these credits are fully achieved by nature of the master plan. In other cases, some additional design measures may be necessary at the more detailed planning stage to achieve the credit. Full credit details are available via the USGBC’s LEED ND website at: <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=148>.

The Galvez Research Neighborhood also has the potential to benefit from the Entergy Thermal Plant, a source of low-cost, environmentally-friendly power.

Other “low-hanging-fruit” and the most locally relevant credits have also been identified but were not appropriate to be addressed at the master planning level due to the nature of the credit requirements. Future developers interested in LEED ND certification should consider these credits as priorities when performing more detailed planning and design.

LEED ND Credit	Title	Credit/ Prerequisite Achieved or Supported in Master Plan
<b>Smart Location and Linkage</b>		
<b>SLLp1</b>	<b>Smart Location</b>	<b>Required/Yes</b>
<b>SLLp2</b>	<b>Imperiled Species and Ecological Communities</b>	<b>Required/Yes</b>
<b>SLLp3</b>	<b>Wetland and Water Body Conservation</b>	<b>Required/Yes</b>
<b>SLLp4</b>	<b>Agricultural Land Conservation</b>	<b>Required/Yes</b>
<b>SLLp5</b>	<b>Floodplain Avoidance</b>	<b>Required/Yes</b>
SLLc1	Preferred Locations	Yes
SLLc3	Locations with Reduced Automobile Dependence	Yes
SLLc5	Housing and Jobs Proximity	Yes
SLLc7	Site Design for Habitat or Wetland and Water Body Conservation	Yes
<b>Neighborhood Pattern and Design</b>		
<b>NPDp1</b>	<b>Walkable Streets</b>	<b>Required/Yes</b>
<b>NPDp2</b>	<b>Compact Development</b>	<b>Required/Yes</b>
<b>NPDp3</b>	<b>Connected and Open Community</b>	<b>Required/Yes</b>
NPDC1	Walkable Streets	Yes
NPDC2	Compact Development	Yes
NPDC3	Mixed Neighborhood Centers	Yes
NPDC4	Mixed-Income Diverse Communities	Yes
NPDC5	Reduced Parking Footprint	Yes
NPDC6	Street Network	Yes
NPDC9	Access to Civic and Public Spaces	Yes
NPDC10	Access to Recreation Facilities	Yes
NPDC12	Community Outreach and Involvement	Yes
NPDC14	Tree-Lined and Shaded Streets	Yes
NPDC15	Neighborhood Schools	Yes
<b>Green Infrastructure and Buildings</b>		
GIBc8	Stormwater Management	Yes

The chart above identifies LEED ND credits for which the Galvez Research Neighborhood, as described and master planned in this Action Plan, could qualify.

Credit	Title	Future developers encouraged to achieve the following credits
<b>Smart Location and Linkage</b>		
SLLc4	Bicycle Network and Storage	Recommended
<b>Neighborhood Pattern and Design</b>		
NPDC7	Transit Facilities	Recommended
NPDC8	Transportation Demand Management	Recommended
NPDC11	Visibility and Universal Design	Recommended
NPDC13	Local Food Production	Recommended
<b>Green Infrastructure and Buildings</b>		
<b>GIBp1</b>	<b>Certified Green Building</b>	Required
<b>GIBp2</b>	<b>Minimum Building Energy Efficiency</b>	Required
<b>GIBp3</b>	<b>Minimum Building Water Efficiency</b>	Required
<b>GIBp4</b>	<b>Construction Activity Pollution Prevention</b>	Required
GIBc1	Certified Green Building	Recommended
GIBc2	Building Energy Efficiency	Recommended
GIBc3	Building Water Efficiency	Recommended
GIBc4	Water-Efficient Landscaping	Recommended
GIBc5	Existing Building Reuse	Recommended
GIBc6	Historic Resource Preservation and Adaptive Reuse	Recommended
GIBc7	Minimum Site Disturbance in Design and Construction	Recommended
GIBc9	Heat Island Reduction	Recommended
GIBc10	Solar Orientation	Recommended
GIBc11	On-Site Renewable Energy Sources	Recommended
GIBc15	Recycled Content in Infrastructure	Recommended
GIBc16	Solid Waste Management Infrastructure	Recommended
GIBc17	Light Pollution Reduction	Recommended

The chart above identifies LEED ND credits for which the Galvez Research Neighborhood, as described and master planned in this Action Plan, could qualify.

# Appendix D

## Social Infrastructure Framework Analysis

Following is a discussion of methodology and results used in the Social Infrastructure Framework (SIF) model of the BioDistrict Plan. The SIF model is a quantitative approach to identify educational, child care, health care, leisure and recreation, and emergency service resources that would potentially serve the projected 3,587 future residents projected by 2030, and to identify any current gaps in social infrastructure serving the current population. In order to account for social infrastructure outside of the BioDistrict that maybe serve residents within the BioDistrict, the analysis included facilities within a ¼ mile walking distance of the boundary.

The following five types of social resources were analyzed to determine current and future needs for the BioDistrict. In general, the district is well served in terms of the presence of resources; however, in many cases the condition of resources is less than optimal.

### Education Data

There are three unique factors that informed the SIF analysis for education. First and most importantly, in 2008 the Orleans Parish School Board (OPSB) and the Recovery School District (RSD) adopted the Facilities Master Plan.<sup>1</sup> This document provided a blueprint for an immense school construction program to help the city's education system recover from Hurricane Katrina, which inflicted millions of dollars worth of damage to public schools. The Plan is broken into four phases, the first phase of which is currently underway.

The Facilities Master Plan proposed a number of changes that will affect the BioDistrict. Two new schools were recommended: Fisk-Howard Elementary School at 211 South Lopez Street and the Citywide Medical Laboratory School at the New Orleans Center for Health Careers (NOCHC) Site (McDonogh 11 at 2009 Palmyra).

The Action Plan also recommended that three existing but vacant school be land banked. Another land bank recommendation was Mary Church Terrell Elementary School, located at 3411 Broadway. The facility suffered from three feet of flooding and is in poor condition; a complete replacement of the structure was recommended. The third land bank recommendation was for LE Rabouin Career Magnet School at 727 Carondelet Street, located in the ¼ mile buffer zone of the BioDistrict neighborhood. Physically the school is in better shape than others in the parish, and a moderate renovation of the facility is recommended for future community use.

<sup>1</sup> The RSD/OPSB plan was updated in the summer of 2011 to reflect demographic changes. Due to the project timeline, base data from the 2008 master plan was used in the SIF calculations, which was current at the time of analysis. Although it is recommended that SIF analysis be revisited on a regular basis to more accurately reflect demographic changes, it is estimated that the most recent plan amendments would not fundamentally change SIF recommendations due to the relatively small school-aged population projected to reside within the BioDistrict. See below for additional footnotes on 2011 master plan amendments in relation to SIF recommendations.

Because of this extensive and recent planning effort—and the excess capacity already in the schools—we do not recommend proposing new school facilities beyond those which are already in the Facilities Master Plan. If, however, the project team wishes to explore alternatives, the following acreages are recommended by the Master Plan:

Pre-K – Grade 8	3.0 - 4.5 acres
Grades 9-12	10 or more acres

The second unique factor in education data in the BioDistrict is that public schools in Orleans Parish do not have catchment areas, meaning that students are not assigned to a specific school based on geography. It is our understanding that students can enroll in any school on a first-come, first-serve basis. This makes results from the SIF model potentially less relevant, as all schools in the region could potentially serve residents of the BioDistrict and vice versa. According to the School Facilities Master Plan (see below), primary schools should have an enrollment that is about 50 percent neighborhood children. Secondary schools have no goals for neighborhood children enrollment.

And third, it should be noted that the New Orleans public schools had been in a steady decline even before Hurricane Katrina—the district has been operating with a surplus of seats for over two decades. On a related note, private schools play a major role in New Orleans. To identify private schools within the BioDistrict, an online search was conducted for schools in the neighborhood. These schools were then all contacted to confirm their location and operation, and to determine their enrollments and capacities. Some of the private schools listed within the neighborhood are no longer in operation and were removed from the inventory. It should be noted that most of the private schools in the neighborhood have students that come from beyond the neighborhood.

There are few technical schools currently within the study area. Schools were identified through an internet search and follow-up phone calls to verify their locations, programs of study, and enrollment. Therefore the development of the Math and Science High School in close proximity to the higher educational and medical facilities is key.

## Standards

There are many sources to pull from in determining goals of service in the BioDistrict. For the baseline of provision, the State of Louisiana maximums were used, which can be found in Bulletin 741: Louisiana Handbook for School Administrators. Title 28, Part CXV. §913. page 23. This represents a minimum standard that BioDistrict schools should achieve. The higher standards were adopted from the National Center for Education Statistics, and represent the Louisiana averages by school type. Curriculum at these schools should also be upgraded to include a Biotech Career Pathway.

## Child Care Data

The inventory of child care facilities was created by searching for licensed child care providers in Orleans Parish on the State of Louisiana Department of Health website. The providers were mapped, and those outside the BioDistrict boundary and buffer were eliminated. The remaining child care providers were then examined in more detail.

In researching the enrollments at existing childcare facilities, the team asked providers to estimate the percentage of their enrolled children who came from the neighborhood. It ranged from 0% (Kidopolis at Tulane) to 80% (Martin Luther King Head Start Center). Although there is current excess capacity at child care facilities, the anticipated residential growth used in the SIF model may not capture the future demand for child care facilities. This would be due to the likely increase of workers coming into the neighborhood from outside that will use child care facilities near their places of work. In identifying locations for new child care facilities, the team may want to concentrate new facilities near the blocks expected to see the greatest increase of jobs.

## Standards

To determine a minimum standard of provision for child care, the team used the Pre-Katrina ratio for New Orleans from the Agenda for Children data. The high standard represents the best ratio found in urban parishes in Louisiana (East and West Baton Rouge) from Agenda for Children report, located online at <http://www.agendaforchildren.org/documents/childcarereport.pdf>.

Using a ratio of children per child care seat however is not useful from a physical planning perspective. To translate this into a more applicable measure, the team first calculated the average size of day care facilities within the neighborhood. The Kidopolis facility was an anomaly with a capacity of 230 children; because it is a major outlier, this facility was not included in calculating the average facility size to avoid a skewed result. The other 12 facilities had an average capacity of 55 seats. This was then applied to the number of facilities that would be needed to meet the Agenda for Children standards.

## Health Care

### Data

Determining healthcare requirements for current and future residents of the BioDistrict is important to ensure basic needs of the population are met, as is accessibility to district clinics and, depending on any special services needed, the entire network of 88 city-wide clinics. The two data types collected were primary care clinics and number of dentists. Originally, the clinic data came from the provided GIS files, but this proved to be outdated and incorrect. A new inventory was created through online searches of public clinics in the area, coupled with research from the Louisiana Department of Health website. These clinics were then contacted for the number of primary care doctors at each facility.

Creating the inventory of dentists was fairly straightforward. The team did online searches for dentists listed in the area, and did further research to determine the number of full-time dentists in each practice.

### Standards

Recognized health care standards are mostly in terms of the number of primary care physicians per 1,000 residents. For the minimum standard of provision, we used the Louisiana average according to [statehealthfacts.org](http://statehealthfacts.org). For the high standard, we used the average ratio of the 12 northeast states, which is the region with the highest ratio in the country, also from [statefacts.org](http://statefacts.org). The challenge is that these ratios include all primary care physicians in the area, and not just the ones at public clinics. To determine the public clinic minimum standard, the planning team calculated the existing ratio of primary

care doctors at public clinics to 1,000 residents of the population. Despite substantial investigation, a high standard for a ratio of public clinic conditions could not be identified.

## Leisure and Recreation

### Data

According to the findings from our GIS analysis, the BioDistrict neighborhood currently meets a fairly rigorous standard of a green space within a 1/3 mile walk of each resident. This is primarily due to the presence of a number of linear parks and boulevards that provide excellent coverage, but have small acreage. However, many of these boulevard spaces do not currently provide a recreation service to the community. Thus, from a realistic perspective, the team decided to remove these spaces from “counting” as recreation space.

Another data challenge was understanding the existing condition of the facilities provided in the GIS inventory. This was particularly apparent with the swimming pool facilities, many of which are not in operating condition but may eventually get restored. Community feedback also revealed that other facilities such as playgrounds were in such bad condition that no one used them. These facilities too were removed from the inventory, and updated through on-the-ground investigations in November.

In terms of library facilities, the New Orleans Public Library Master Plan was completed in 2008. This plan, like the School Facility Master Plan, proposes major changes for libraries within the BioDistrict. The Master Plan proposed closing the existing Main Library (140,000 sq. ft), which existed within the BioDistrict boundaries, and building a new structure (200,000 sq. ft.) at an undetermined location. The old Main Library structure has already been removed. The Plan also proposes closing the existing Mid City Library and replacing it with a larger, new facility called the Carrollton Regional Branch Library. An exact site was not identified, but the plan did specify that the facility should be located on or near Carrollton Avenue.

## Standards

Measuring park standards is not straight-forward because there is no agreed upon standard for “what counts”—some communities only count active park spaces, whereas others will count anything possible such as water, drainage ponds, etc.

Initially, the minimum standard for existing parks space was calculated by simply taking the parks inventory acreage from the GIS data and translating it into a ratio of acres per 1,000 residents in the neighborhood. This resulted in a standard of 4 acres per 1,000, but this figure still included the unusable boulevard space. A second analysis was performed counting only neighborhood parks within total open space provision within the district (each totaling 2-4 acres each, with the exception of Norwood measuring only 1.29 acres in size, also counted due to the facilities provided on site). In addition, Jeff Davis Parkway green space (totaling 19.09 acres) north of I-10 was counted district as contributing open space within the district. All told, 34.14 acres were considered as neighborhood open space in the district. This yielded a standard of 2.7 acres per 1,000 district residents, used as a minimum for future provision.

The high standard is more difficult to determine because of the “apples to apples” issue. Studies have shown that there is a positive correlation between the amount of parks space and how livable a city is. If looking at a city-wide scale, it would be realistic to set a goal of 16.3 acres/1,000 residents, which is the average number of acres per 1,000 residents of the top most livable medium-to low-density cities in the country. However, these ratios account for the large regional parks that exist in most of these cities, and cannot be directly applied to a neighborhood scale.

A different way to measure parks is access. For the minimum standard we used the access goal from the New Orleans 2030 Plan of every resident being within a 1/3 mile of a green space. For the high standard, we used 1/4 mile, which generally considered the most aggressive, yet reasonable, standard in parks and recreation planning.

Fortunately, standards for individual park facilities are more easily defined. The minimum standards for the BioDistrict were adapted from the 2002 City of New Orleans Parks and Recreation Master Plan’s figure of facilities per resident in the Midtown Planning District as the “status quo” prior to Katrina. The high standards for facilities were the NRPA standards of facilities per population. The exception to this was for swimming pools; the 2002 Plan noted that on top of the already high number of pools in the Midtown area, there was still a need for more. Thus, another pool was added to account for this need and translated into an aggressive standard of 13,000 residents per pool.

Library standards were also challenging to determine. Most measures of libraries are in terms of volumes, periodicals and circulation. For physical planning purposes, this had to be translated into library facility size. For the minimum, we used the existing square footage of libraries in the Midtown planning district prior to Katrina. For the high standard, we used the square footage equivalent; we used the standard based on best peer library systems.

## Emergency Services

### Data

GIS data indicates that there are five fire stations within the district; this was confirmed by a fire station Chief .

For fire service, a 4 minute response time was used to calculate station allocations in the district, based on National Fire Protection Agency standards (existing stations provide this coverage).

### Standards

Standards for emergency services are not straight forward. The Department of Justice recommends a minimum of 3.57 officers per 1,000 residents. Additional more localized data was not received from the police department.

### Cumulative Needs by Phase: Summary

Child Care Facility Space	At most, (2) x 3, 135 facilities will be needed by 2020, and an additional 2 similar-sized facilities needed by 2030 (4 total).
Public Primary School (ages 5-13)	Proposed FiskHoward school should be able to accommodate projected need (around 374-424 seats by 2030), considering a proportion of neighborhood residents may choose to send their children to school outside the district. No new construction recommended.
Private Primary School (ages 5-13)	Existing capacity (459 places) should accommodate future need (est. 74-124 seats); no new construction recommended.
Public Secondary School (ages 14-17)	With proposed citywide Medical Laboratory (NOCHC Site) high school (250 places) and renovated Booker T. Washington HS (1100 places), it appears additional provision could be met within and/or outside the district. No new construction recommended.
Private Secondary School (ages 14-17)	Future demand could be in the range of 1-2 classrooms considering existing capacity; could be provided as expansions or class size enlargement at existing facilities.
Playgrounds	1 additional playground needed by 2030 according to Parks and Recreation master Plan standards, up to 3 by 2030 using a more aggressive standard; due to limited number of children expected in the district, only 1-2 additional playgrounds recommended (to be provided in neighborhood parks).
Neighborhood Parks	Under current provision standards, an additional 5.7 acres of park space needed by 2015, 7.5 acres (1.8 acres during phase) by 2020, and 9.7 (2.2 acres during phase) by 2030. Maximum provision of 25 acres by 2015 (to be in line with most livable cities in the country) plus an additional 2 acres by 2020 and 4 acres by 2030. Due to urban condition, recommend at least strategic placement of "minimum" provision, but not full application of maximum standard unless in a regional park.
Recreation Facilities	No new recreation facilities recommended; however increased need is shown for swimming pool and basketball facilities throughout the years, though not justifying a complete new facility. Expanded services or hours could suffice.
Emergency Services	Standards found from Bureau of Justice statistics on provision of police officers in City of New Orleans, yielding the need for additional police officers to accommodate new population; however no facility planning information found. No facility planning information on fire station sizes found.

## Additional Neighborhood Facilities/Services Needed in Biosciences District by 2030<sup>1</sup>

based on projected residential growth

	Minimum <sup>2</sup> Additional Provision	Maximum <sup>2</sup> Additional Provision	Facility Planning	
<b>Child Care</b>				
Class A Child Care Facilities (ages 0-4)	0	4	3,135 sf per facility (1829 sf indoor space, 1306 sf outdoor space)	
Class A Child Care Slots (ages 0-4)	0	209	NA	
<b>Education<sup>3</sup></b>				
Student Places (Seats) Required ( <i>gross</i> )				
Public Primary School (ages 5-13)	374	424	Generally 160 sf (gross) required per student New Fisk-Howard school proposed at 2.3 acres; estimated facility size of 72,000 sf	
Public Secondary School (ages 14-17)	582	659	Generally 180 sf (gross) required per student Typical high school site at least 10 acres; estimated space needed of 126,000-144,000 sf	
Private Primary School (ages 5-13)	74	124	Varies	Existing
Private Secondary School (ages 14-17)	116	194	Varies	Considered
Classrooms Required ( <i>gross</i> )				
Public Primary School (ages 5-13)	14	23	(see above)	Proposed
Public Secondary School (ages 14-17)	17	31	(see above)	
Private Primary School (ages 5-13)	4	6	(see above)	Existing
Private Secondary School (ages 14-17)	5	5	(see above)	Future
<b>Health Care</b>				
Primary Care Doctors	4	6	NA	
Primary Care Public Clinics	4			
Dentists	-3	5	NA	
Dentist Offices	0	4		
<b>Recreation</b>				
Neighborhood Parks	9.7 acres	31 acres	2-4 acres each	
Swimming Pools	0	(fraction)	Varies on size of pool and amenities. Usually ½ to 2 acre site. Service radius: 15 to 30 minutes travel time. Preferred location in community park or school.	

Cumulative Needs by Phase

	Minimum <sup>2</sup> Additional Provision			Maximum <sup>2</sup> Additional Provision		
	Phase 1 (2010-15)	Phase 1-2 (2010-20)	Phase 1-3 (2010-30)	Phase 1 (2010-15)	Phase 1-2 (2010-20)	Phase 1-3 (2010-30)
<b>Child Care</b>						
Class A Child Care Facilities (ages 0-4)	0	0	0	0	2	4
Class A Child Care Slots (ages 0-4)	0	0	0	0	108	209
Child Care Facility Space	0	0	0	0	2 x 3,135 sf facilities	4 x 3,135 sf facilities
<b>Education <sup>3</sup></b>						
<b>Student Places (Seats) Required (gross)</b>						
Public Primary School (ages 5-13)	176	288	374	199	326	424
Public Secondary School (ages 14-17)	282	373	582	319	423	659
Private Primary School (ages 5-13)	58	96	124	35	57	74
Private Secondary School (ages 14-17)	94	124	194	56	74	116
<b>Classrooms Required (gross)</b>						
Public Primary School (ages 5-13)	6	11	14	11	18	23
Public Secondary School (ages 14-17)	8	11	17	15	20	31
Private Primary School (ages 5-13)	2	4	6	1	3	4
Private Secondary School (ages 14-17)	2	3	5	2	3	5
<b>Health Care</b>						
Primary Care Doctors	2	3	4	3	4	6
Primary Care Public Clinics	2	3	4			
Dentists	-4	-3	-3	3	4	5
Dentist Offices	0	0	0	2	3	4
Primay Care Public Clinic Facility Space						
Dentist Office Space						
<b>Recreation</b>						
Neighborhood Parks	5.7 acres	7.5 acres	9.7 acres	25 acres	27 acres	31 acres
Swimming Pools	0	0	0	(fraction)	(fraction)	(fraction)
Baseball/Softball Fields	-4	-4	-4	-3	-2	-2
Soccer/Football Fields	0	0	0	0	0	0
Basketball Facilities	-1	-1	-1	0	(fraction)	(fraction)
Playgrounds	0	0	1	2	3	3
Library square feet	26,664	27,888	29,328	41,478	43,382	45,622
<b>Emergency Services</b>						
Police Officers				7	10	13
Police Stations						
Fire Stations	0	0	0	0	0	1
Firefighters	0	0	0	0	0	8

standard not found/still awaiting data

## SOURCES

### Standards of Provision Used

	Min	Source	Max	Source
<b>Child Care</b>				
Ratio of Children to Childcare Slots	1.6 : 1	Pre-Katrina ratio from Agenda for Children, <a href="http://www.agendaforchildren.org/documents/childcarereport/pdf">http://www.agendaforchildren.org/documents/childcarereport/pdf</a> , page 61	1.1 : 1	best ratio of urban parishes in Louisiana (east and west Baton Rouge) from Agenda for Children Report, <a href="http://www.agendaforchildren.org/documents/childcarereport/pdf">http://www.agendaforchildren.org/documents/childcarereport/pdf</a>
Child Care Facilities per children 0-4	1 per 88	AECOM calculation of facilities needed to meet 1.6 : 1 ratio using average size* of facility currently in neighborhood	1 per 60	AECOM calculation of number facilities (using average facility size* in neighborhood needed to achieve ratio of 1.1 : 1) *Kidopolis excluded as an outlier that would skew the average
<b>Education</b>				
Primary School (Public) Seats per grade	26	Maximum per law. Bulletin 741: Louisiana Handbook for School Administrators. Title 28, Part CXV. 913, page 19.	18.1	National Center for Education Statistics, Louisiana average for self-contained teaching. <a href="http://nces.ed.gov/programs/digest/d09/tables/dt09/tables/dt09_067.asp">Http://nces.ed.gov/programs/digest/d09/tables/dt09/tables/dt09_067.asp</a>
Primary School (Private) Seats per grade	20	Maximum per law. Bulletin 741 (nonpublic): Louisiana Handbook for Non-public School Administrators: Title 28, Part LXXIX. 707, page 8	18.1	National Center for Education Statistics, national average for self-contained teaching. <a href="http://nces.ed.gov/surveys/sass/tables/sass0708_2009324_t2a_08.asp">Http://nces.ed.gov/surveys/sass/tables/sass0708_2009324_t2a_08.asp</a>
Secondary School (Public) Seats per grade	33	Maximum per law. Bulletin 741: Louisiana Handbook for School Administrators. Title 28, Part CXV. 913, page 19.	20.9	National Center for Education Statistics, Louisiana average for departmentalized teaching. <a href="http://nces.ed.gov/programs/digest/d09/tables/dt09_067.asp">Http://nces.ed.gov/programs/digest/d09/tables/dt09_067.asp</a>
Secondary School (Private) Seats per grade	35	Maximum per law. Bulletin 741 (nonpublic): Louisiana Handbook for Non-public School Administrators: Title 28, Part LXXIX. 707, page 8	19.9	National Center for Education Statistics, national average for departmentalized teaching. <a href="http://nces.ed.gov/surveys/sass/tables/sass0708_2009324_t2a_08.asp">Http://nces.ed.gov/surveys/sass/tables/sass0708_2009324_t2a_08.asp</a>
Private School "Leakage"	25%	U.S. census and American Community Survey data from <a href="http://www.ipums.org">http://www.ipums.org</a> , as referenced in "Private Schooling in the U.S.: Expenditures, Supply and Policy Implications" (Baker, July 2009); <a href="http://nepc.colorado.edu/files/PB-BakerPvtFinance.pdf">http://nepc.colorado.edu/files/PB-BakerPvtFinance.pdf</a>		

**Health Care**

Primary Care Doctors per 1,000 residents	1.1	Louisiana average according to statehealthfacts.org: <a href="http://www.statehealthfacts.org/comparemactable.jsp?ind=432&amp;cat=8">http://www.statehealthfacts.org/comparemactable.jsp?ind=432&amp;cat=8</a>	1.7	average of the 12 northeast states (the region with the highest ratio in the country); based on <a href="http://www.statehealthfacts.org/comparemactable.jsp?ind=690&amp;cat=8">http://www.statehealthfacts.org/comparemactable.jsp?ind=690&amp;cat=8</a>
Public Clinic (Primary Care) Facilities per 1,000 residents	1.2	AECOM research of existing facilities		
Dentists per 1,000 residents	1.6	AECOM research of number of dentists at existing facilities	1.5	ratio of dentist per 1,000 residents in Washington DC, the best national ratio
Dentist Offices per 1,000 residents	1.1	AECOM research of number of dentists at existing facilities		

**New Orleans BioDistrict  
Social Infrastructure Framework (SIF)  
Needs Analysis**

**BASELINE ASSUMPTIONS**

Study Period	Phase 1	Phase 2	Phase 3
	2010-2015	2015-2020	2020-2030

Population Growth	2010	2015	2020	2030	Total Change
Total Population	12,707	14,814	15,494	16,294	3,587

Source: GCR, AECOM Economics. NB: Total population excludes prison population of 3,343.

Population Forecast by Age Cohort	2010	2015	2020	2030
<b>Ages</b>				
0-4	603	741	930	1,041
5-13	1,320	1,555	1,704	1,819
14-17	587	963	1,085	1,363
18-24	2,060	2,518	2,789	3,495
25-29	1,010	1,333	1,549	1,820
30-34	942	1,037	1,085	1,172
35-39	942	1,037	930	818
40-44	891	1,037	930	742
45-49	891	1,037	930	737
50-54	756	741	775	715
55-59	756	741	775	640
60-64	756	741	620	531
65+	1,192	1,333	1,394	1,400
<b>Total</b>	<b>12,707</b>	<b>14,814</b>	<b>15,494</b>	<b>16,294</b>

Source: Current population age cohort data: GCR. Forecast age cohort breakdown: AECOM calculation based on Illinois Medical District (IMD) age cohort profile. IMD utilized as comparable analogue based on advice from AECOM Economics that IMD is most similar in character to BioDistrict and thus would mirror population profile most closely. Although there is a greater percentage of youth in the IMD breakdown than is currently present in the BioDistrict, estimated higher future average HH sizes in the BioDistrict could reasonably reflect a higher proportion of youth present in the future. (IMD Source: ESRI Comprehensive Trends Analysis)

# Appendix E

## Water Sensitive Urban Design (WSUD) and Low Impact Development (LID)

### Purpose & Need

There is an increasing trend in communities like New Orleans, where water issues are of great concern, to seek new water management solutions that both reduce water related threats and provide unique water-oriented community amenities. Local initiatives such as the Dutch Dialogues and numerous other urban watershed scale initiatives worldwide are outstanding examples of this trend. Additionally, by leveraging a site's hydrologic capabilities through water sensitive urban design (WSUD), a.k.a. low impact development (LID), measures can provide diverse and often low-cost solutions. Urban design measures such as raingardens, green roofs, bioswales, constructed wetlands, and even an urban forest strategy can all contribute to achieving a more favorable relationship with water at the BioDistrict.

The water context in the BioDistrict consists of two primary themes, hydrology (including issues of rainwater, runoff, flooding, ground water, water table, etc.) and potable water (including water demand, wastewater treatment, water use efficiency, etc.). Most rainwater is conveyed off of the site in concrete lined pipes or canals using conventional engineering techniques designed to remove rainwater from the site as quickly as possible to protect neighborhoods from flooding. However, frequent minor street flooding and occasional extreme flooding still occur in the BioDistrict. An additional hydrology related concern is the issue of "subsidence". The lack of rainwater infiltration into the soil due to conventional

stormwater engineering techniques, combined with other factors, are causing soils to subside (lower) at an annual rate of approximately 1 centimeter per year. This subsidence will increasingly worsen flooding in the BioDistrict over time, and rainwater management strategies designed to allow greater on-site infiltration have been proposed as a solution to reduce subsidence.

Efficient use of potable water and use-reduction are not a priority within the City due to the relatively plentiful and low cost water supply. There is also little focus on water use efficiency within local sustainability plans.

By increasing rainwater retention and infiltration on the site, the BioDistrict can help to reduce the frequent on-site minor street flooding and also contribute to the Army Corps objective of increasing the City's stormwater management system to provide effective management of the 10 year storm event. Additionally, increased infiltration may slow the subsidence problem in the BioDistrict, thus reducing the long term threat of increased flooding associated with ongoing lowering of the site's elevation. More efficient use of potable water could provide cost savings for the BioDistrict by reducing the cost of water conveyance and treatment infrastructure. Additionally, capturing and utilizing rainwater for non-potable uses such as landscape irrigation or toilet flushing could provide some additional minor flood mitigation benefits.

## BioDistrict-Appropriate Tools

A combination of rainwater capture, retention, and infiltration is proposed for both private parcels and in public rights-of-way. It should also be noted that current plans for the VA and UMC hospitals include extensive WSUD measures and should be looked to as precedents for other future projects. The following WSUD measures should be considered throughout the BioDistrict and more detailed proposals for “key development areas” have been identified throughout the main body of the document.

### Bioswales

Bioswales are vegetated or grass swales that intercept runoff from impervious areas en route to a downstream waterway. They are often used in locations adjacent to parking lots, and in medians and landscape strips along roadways. Bioswales reduce flow velocity and volume by retaining, infiltrating, and/or slowly releasing water into the downstream system. They also remove sediments and pollutants.

### Rain Gardens

Raingardens are generally similar to bioswales, but are typically thought of as “garden features” on private parcels. They are depressed areas where runoff, often from roofs, is directed, providing favorable conditions for wetland or flood oriented species. Depending on the level of effort, these features can become beautiful and biologically diverse garden elements, and a source of pride for land owners or stewards.

### Permeable/Porous Pavements

These pavement types promote infiltration into the soil or to an underground conveyance connected to a dedicated water storage reservoir/cistern.

## Detention/Retention Basins

These features can be vegetated or non-vegetated, or may contain some amount of water at all times and are generally used for flood control. They may also be used to provide infiltration and groundwater recharge. Grassy, flood control-oriented basins may be combined with other uses such as sports fields during dry periods. Basins that contain water year around generally provide “freeboard” (ability for water levels to rise) providing increased retention/detention benefits during storms.

## Canal Daylighting

In addition to potential stormwater management benefits, daylighting underground canals in the BioDistrict could provide an amenity water feature that increases community value. A canal daylighting strategy is currently planned for the Lafitte Greenway project. Daylighted canals in many cities, such as Amsterdam, are also some of those cities greatest aesthetic and park amenities. Converting underground canals to unlined (natural bottom instead of concrete), open topped, more natural canals could also reduced subsidence risk, provide retention and infiltration, and improve urban biodiversity/habitat. Medians in Jefferson Davis, Broad, Poydras Lafayette, and Galvez could provide opportunities, and a more detailed strategy for Poydras between Broad and Galvez is outlined in the following section.

Any daylighting strategies should be carefully designed in order to reduce any potential negative impacts such as attracting nuisance species; debris could be a problem without proper maintenance; and safety could be reduced if not well designed/maintained. The existing business as usual infrastructure strategy of capped canals is also well established in New Orleans, and daylighting may be seen as a step backwards since capping has historically been seen as a best practice for safety purposes. Providing retention capacity in canals may also be limited by inlet elevations at pump stations. Lowering inlets at pump stations could increase retention capacity further but would be costly.

## Constructed Wetlands

Constructed wetlands are densely vegetated water bodies that can provide infiltration, retention, and sediment and pollutant removal. Depending on design, they can also act as habitat or can be designed as unique architectural features (as proposed for the Lafitte Greenway).

## Urban Forest/Landscape Coverage

By increasing the amount of forest canopy and overall portion of landscape in the BioDistrict, increased rainwater interception, retention, and infiltration can be achieved. Tree canopies in particular intercept rainwater and reduce runoff volume or velocity by holding water on the extensive tree surfaces (e.g. leaves) and slowing it from entering the storm drainage system or by allowing it to evaporate. A portion of rainwater is also channeled from the canopy down the trunk and infiltrated more directly toward the rood system. Increasing the percentage of landscape area across the BioDistrict allows for infiltration and stormwater retention in those areas and the overall amount of impervious surface is thus reduced.

## Green Roofs

Green roofs can be used to capture and retain rainwater. The amount of water treated depends on the type of green-roof technology, i.e. extensive or intensive green roofs. Extensive green roofs have shallower soils layers and less intensive vegetation (generally sedum species). These roofs may retain less water themselves and are more compatible with rainwater capture/cistern



Green roofs are an innovative way to capture and retain rainwater.

systems. Intensive green roofs have deeper soils and more intensive and diverse plant systems. These roofs can retain more water in soils and reduce runoff through increased vegetation uptake and transpiration.

## Cisterns

Sealed tanks that collect rain and stormwater from roofs or other surfaces allow the re-use and retention of collected water. Cisterns may also collect “graywater” (e.g. wastewater from showers, dish washing, or laundry that does not contain human waste). This water is often re-used either for landscape irrigation or for non-potable in-building uses such as toilet flushing or laundry. Cisterns can be located either above or below ground, or in buildings. The planned VA provides 2 million cubic feet of retention in underground cisterns. NOTE: Graywater must be used only on-site and must have separate pipe systems according to New Orleans City policy.

## Water Use Efficiency

By constructing or retrofitting buildings and landscape irrigation systems with water efficient fixtures, water demand can be reduced, which can reduce water bills, reduce infrastructure costs for conveyance and treatment, and can reduce the negative impacts of wastewater on downstream watersheds.

Many of the WSUD measures discussed above also provide additional environmental benefits not mentioned including: urban heat island reduction and resulting reduced building energy use; increased carbon sequestration/offset in vegetation and soils; and improved community awareness and conservation behavior with regard to water management.

Finally, a more detailed total water balance master plan for the entire BioDistrict and/or for “key development areas” is recommended.

## Implementation & Funding

In order to achieve a water sensitive BioDistrict, all new non-residential buildings required to achieve LEED Silver rating and prioritize stormwater credit LEED NC SS Credits 6.1 and 6.2. Encourage application of WSUD measures for all residential and mixed use areas and buildings through education, outreach, and incentives. For example, credits could be given to a developer on the front end to incorporate bioswales, rain gardens and permeable or porous pavements into their development. Increased stormwater retention and treatment in public right-of-ways should be provided where feasible.

A CBA strategy similar to that outlined for the Poydras Stormwater Park (see Appendix F) could be implemented elsewhere in the BioDistrict to support integration of WSUD elements in public rights-of-way or on private parcels. Additionally, the BioDistrict should explore possible funding for a detailed stormwater strategy as part of \$2M Louisiana Recovery Authority award.

Finally the City and GNO Inc are undertaking a more detailed study city-wide to generate policies and guidelines that will be incorporated into the City's CZO process. The BioDistrict strongly supports this effort and encourages the adoption of ordinances that focus on specific on site detention and storm water management best practices as previously outlines in this section.

# Appendix F

## Plan Elements - Stormwater Park & Tree Nursery

### Stormwater Park Concept

A long-term goal for the 7 acre median area along Poydras between Broad and Galvez in the Galvez Research Neighborhood is the creation of a stormwater management park to treat up to 25% of required retention for the 90+ acre neighborhood to meet LEED ND GIB credit 8. This measure will contribute toward the achievement of the credit for any projects in the neighborhood that wish to achieve any type of LEED certification and can provide a unique sustainable amenity for the BioDistrict. The remaining +/-75% of required retention/capture to meet the credit for the neighborhood could be through cisterns, finer grained bioswales/LID measures, and/or rainwater collection for water demand.

This Poydras median area would be designed as a multi use park that could also include a tree nursery, plazas, community facilities, and/or community gardens. During the early phases of BioDistrict buildout, this site is planned to house a tree nursery to provide trees for the District until a final 2020 tree canopy target has been met. The tree nursery is a good solution because it would not require city funding for implementation or maintenance. A phased strategy for conversion of nursery areas to stormwater park is envisioned over BioDistrict buildout as funding for the park becomes available through a recommended stormwater “offset” program funded by new developments (see below).

We estimate an average retention depth of 4 feet per unit area so retention could range from approximately 8 - 20 acre-feet from park initiation to full build out. Detailed estimates of retention, drainage area, and mix of surface retention, cisterns, and rainwater use in buildings will depend on detailed hydrology and architectural studies within the LEED ND Ready area.

### Next Steps

Funding for construction, operations, and management of the stormwater park could be provided through the CBA for new Biosciences oriented non-residential developments and/or mixed use developments. The CBA would act as a stormwater offset fund for new developments so that they do not need to implement costly, land intensive stormwater retention measures on their own sites. Stormwater retention in public rights-of-way may be a more cost effective approach in lieu of requiring on-parcel retention. An innovative program for payment in lieu of on-site retention currently exists in Los Angeles. The stormwater park approach would also provide greater opportunity to leverage stormwater management features as an amenity (e.g. a more typical approach, as is planned at the LEED certified VA, includes placing stormwater retention facilities underground which is costly and does not provide social value compared to a stormwater “park” approach). Implementation of the CBA would be managed by the BioDistrict. Detailed stormwater offset implementation strategy and design is needed.

Phase 1 5 Years	Phase 2 5-10 Years	Phase 3 10-20 Years
4-8 acre feet (2 acres 2-4 feet deep) of retention provided in Poydras median between Broad and Galvez managed by nursery (see urban forest)., To provide credit for, if applicable, non-residential (R&D) LEED Silver developments or LEED ND projects in the Galvez Research Neighborhood.	14 acre feet of retention (3.5 acres up to 4 feet deep) provided in Poydras median stormwater park between Broad and Galvez funded by, and to provide credit for if applicable, non-residential (R&D) LEED Silver developments or LEED ND projects in the Galvez Research Neighborhood.	20 acre feet of retention (5 acres up to 4 feet deep) provided in Poydras median stormwater park between Broad and Galvez funded by, and to provide credit for if applicable, non-residential (R&D) LEED Silver developments or LEED ND projects in the Galvez Research Neighborhood.

## Tree Nursery Concept

In order provide a supply of trees necessary to meet the tree canopy targets for the BioDistrict and City of New Orleans, the Action Plan includes the construction of two tree nurseries. The recommended nursery locations are the site of the existing LaFarge concrete facility in Gert Town, approximately 3.5 acre, and the 7-acre Poydras median between Broad and Galvez in the Galvez Research Neighborhood. This strategy has the potential to provide an economical advantage to tree planting efforts in the BioDistrict by providing a local supply and potentially reduced materials costs.



The nursery also is envisioned to provide multiple additional community benefits through innovative propagation methods, integrated social programs, employment opportunities, and attractive facility design. An important element of the nursery is that the character of the design and operation must be an enhancing element for the neighborhood. Therefore, contemporary design of nursery operations buildings and architectural fencing strategies are essential. The operations buildings would house community programs, educational sessions, and events. Additionally, aligning the nursery with educational programs at Delgado University is also recommended.

## Advantages

- An on-site tree nursery offers the following advantages:
- Cost-effective implementation and delivery by growing trees in communities where they will be planted
  - Encourages eco-friendly production methods
  - Reduces carbon foot print by eliminating long-distance transport of materials
  - Eliminates the need to outsource labor and skill sets
  - Provides a reliable, single source delivery mechanism
  - Fosters community pride and ownership, ensuring planting success
  - Trains the next generation of environmental stewards

Phase 1 5 Years	Phase 2 5-10 Years	Phase 3 10-20 Years
<b>Galvez Research Village:</b> 4 acre tree nursery produces approximately 2500 trees per year and supplies 100% of BioDistrict Phase 1 tree needs.	<b>Galvez Research Village:</b> Nursery reduced to 1.75 acres to supply 1000 trees per year to the BioDistrict and surrounding region (former nursery area converted to stormwater park – see stormwater).	<b>Galvez Research Village:</b> BioDistrict tree canopy targets met, nursery reduced to 0.5 acre and functions as education/community center (rest of former nursery area converted to stormwater park).
<b>Xavier/Gert Town:</b> Clean up cement plant for future tree nursery location.	<b>Xavier/Gert Town:</b> 3.5 acre tree nursery supplies 2000 trees per year to the City and surrounding region.	<b>Xavier/Gert Town:</b> 3.5 acre tree nursery supplies 2000 trees per year to the City and surrounding region.

The BioDistrict tree nursery concept has been developed in concert with Ecosystem Partners and Restore the Earth Foundation, Inc. based on the EKOgrown Deployable Nursery © model and EKOgrown © tree production method.

## Target Tree Canopy

In the 2002 Urban Ecosystem Analysis report for the New Orleans metropolitan area, American Forests recommends 25% tree canopy coverage in urban residential and 15% tree canopy coverage within the central business district. While these goals may seem ambitious, there are comparable areas within New Orleans that already meet the proposed guidelines. Although a 25% goal is reasonable within low to mid-density residential districts, CBD zones may require additional park land to compensate for the building density. The proposed tree nurseries and campus facilities will also help provide canopy coverage.

The images that follow highlight areas within the city that currently meet American Forests' standards. Even these well-canopied areas are not as densely planted as possible. For each of the six examples there are additional opportunities for tree in-fill.



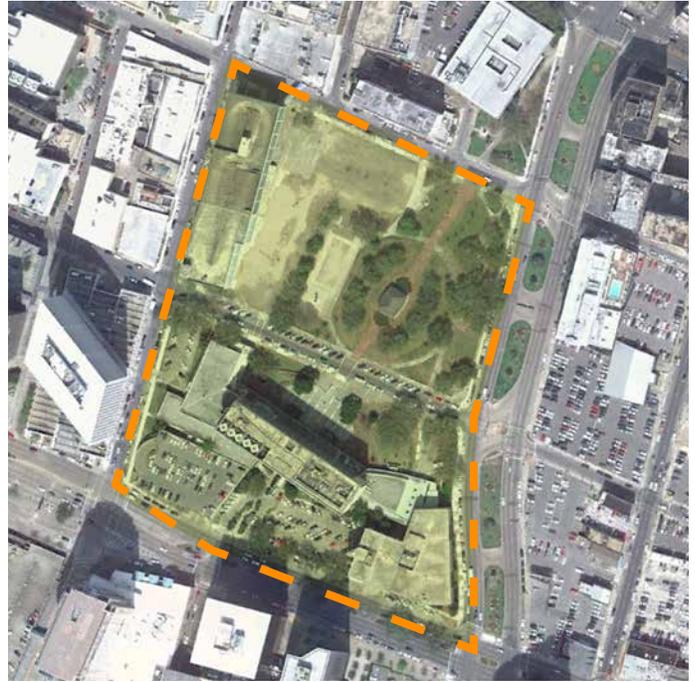
Residential – Garden District  
Between Washington and Second, Chestnut and Prytania  
25% Coverage



Opelousas Avenue – Algiers  
Opelousas Avenue between Verret Street and Atlantic Avenue  
74% Coverage



CBD – Lafayette Square  
 Between Camp and Carondelet Streets, Poydras and Girod Streets.  
 19% Coverage (Lafayette Square, 56%)



Government, CBD – City Hall  
 Between Poydras and Gravier Streets, Loyola Ave and LaSalle Street  
 16% Coverage



Mixed Use (Residential, School) – Bywater  
 Between St. Claude Avenue and Burgundy Street, and Independence  
 and Bartholomew Street  
 13% Coverage



Tulane University Campus – Uptown/Carrollton  
 Campus bounded by Broadway, Zimple, Newcomb Pl, Freret St.,  
 Willow, Audobon and Plum Street  
 17% Coverage

## Assumptions & Phasing

The following assumptions led to the recommended phasing strategy and tree production targets:

- Target: Increase canopy from 3.6% to 20% within the project limits in 20 years.
- Total acreage is 1500 ac., requiring 300 ac of canopy coverage in 20 years
- This equates to about 10,000 trees at a range of 25' to 35' in diameter to reach the goal at the 20 year mark. At maturity, typical canopies are expected to range from 35'-45'.
- Assumes planting most street trees at 1-1.5" caliper. Smaller 15 gallon trees could be planted in lower visibility areas or in areas of more extensive coverage at a lower price point.

## Operations and Set Up Cost Estimate

### Nursery construction

Costs are estimated at Low, Medium, and High difficulty (access, utilities present, former use) not scale.

- Low- \$50K – 70K
- Medium- \$90K – 110K
- High- \$130K- 150K

### Plant Materials

Raw cost of tree by size when removed from nursery (not including any mark up)

- 2 gallon trees \$13.63
- 15 gallon trees \$60.48
- 25 gallon trees \$98.75

### Additional consultant costs and added services:

- 1st year startup (handbook and training services)
- upsizing, shipping, materials, irrigation pruning IPM, horticulture production, maintenance etc.
- Annually- Quarterly Site Visits
- Annual refresher course
- Seed collection & processing
- Nursery Integration with Community
- Workshops, Enviro-Ed and Stewardship

### Programs

- Funding Resource Assistance

## Next Steps

Opportunities for funding first costs of the nursery operation should be considered during the CBA process. Depending on the business model chosen, first costs may be recaptured through tree sales. Additionally, achieving the appropriate canopy targets for new development parcels should be required through design guidelines. Urban forest enhancement programs for Mid City and Gert Town should be developed to achieve canopy targets in those areas of the BioDistrict where significant new developments will not occur and planting might be on an ad hoc basis.