ACKNOWLEDGEMENTS

This plan was prepared with the benefit of contributions from University of Minnesota Staff in the following offices:

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  Finance
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  Facilities Management
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May 15, 2009
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EXECUTIVE SUMMARY

INTRODUCTION
The East Gateway District of the Twin Cities campus is an area in significant transition. Historically an industrial railyard serving the vast grain storage and transport needs of the upper Midwest, the District has more recently been utilized by the University of Minnesota as a remote surface parking reservoir. Within the last decade, two new research facilities, the Lions Research Building/McGuire Translational Research Facility (Lions/McGuire Research Facility) and the Center for Magnetic Resonance Research (CMRR), were constructed in the District, with a third research building, the Medical Bioscience Building (MBB), under construction at the time of this report. In addition to research functions in the East Gateway District, the new TCF Bank Stadium is under construction and will open in the fall of 2009. With this pace of new development, the District has become the most rapidly developing area of campus.

In 2008, authorization by the Minnesota State Legislature of bonding for the Biomedical Science Research Facilities Program has committed the University of Minnesota to the construction of four additional research buildings over the next five years. In addition, the Metropolitan Council has committed to the design and construction of the Central Corridor Light Rail Transit (LRT) line to be completed in 2014, with a transit stop planned for the District.

Given this commitment and amount of construction, the East Gateway District will undergo an accelerated pace in its transformation. In short, it is the expectation of the UM East Gateway Project Executive Committee that “the whole fulcrum of the campus will change as a result of this development.”

The University of Minnesota and its Capital Planning and Project Management (CPPM) office decided that it was time to undertake a District Master Plan and design guidelines for the district to guide its future development in accordance with the mission, objectives, and principles of the university. This report is the end result of a seven-month planning effort that commenced in July of 2008 to achieve this goal.
PLANNING PROCESS
The CPPM chose a planning team to prepare this District Master Plan and to work collaboratively with the University of Minnesota (University), CPPM staff, and University stakeholders to establish the vision for the East Gateway District. The planning team worked with the CPPM and two committees set up for this planning effort: the Project Executive Committee, responsible for the project oversight, major recommendations, and final recommendation to the University president and Board of Regents; and the Project Steering Committee, responsible for review and comment on the technical content and coordination among University departments to support the plan. The planning team also met with several staff members of various University departments and City of Minneapolis staff to understand the wider planning parameters and objectives for the District.

PLANNING CHALLENGES
The academic, and particularly research needs of the University will continue to grow, yet the University is out of land for expansion. The East Gateway District adjacent to the east bank of the Twin Cities campus represents one of the last non-developed areas available for future campus growth. Therefore, future development of this area should promote a level of density that will use limited land resources wisely.

Along with density, the University should establish a campus type of environment, one in which it can share valuable resources and core technical functions, rather than prepare individual building sites. Developed in this model, the East Gateway District will build an identity as a complete environment with a high level of amenities to attract and recruit top researchers and adjacent private partners.

The East Gateway District is not immediately adjacent to the Academic Health Center, clinical uses, or other core science programs on the main campus. Functional proximity to these related uses will be critical to the District’s and program’s success. Development of the District must utilize multiple and creative ways to link its users to the main campus, and vice versa, including future transit, campus bus, pedestrian, and bicycle connections. This will also reduce reliance on driving, parking demand, and traffic on local roads.

PLANNING PRINCIPLES
Planning principles were established early in the planning process to guide the creation of the plan. The planning principles for the District are intended to:
1. Provide a supportive academic and research environment.
2. Create an image of architectural distinction, integrity, and brand.
3. Optimize the use of scarce land resources.
4. Maximize flexibility for future development.
5. Strengthen the multi-modal transportation system in the area.
6. Create an attractive, functional, and safe environment for pedestrians and cyclists.
7. Integrate into the existing campus and surrounding community.
8. Build a real sense of community and place for the District.
9. Create a cohesive, memorable system of public spaces.
10. Develop a District that is environmentally and operationally sustainable.

VISION FOR EAST GATEWAY DISTRICT
Develop the East Gateway District as a cohesive complex of research, support, and athletic facilities that has its own identity, but is integrated with the existing campus.

The vision for the East Gateway District is supported by three goals:
• Support the University’s goal to be one of the top three public research universities in the country.
• Sustain the vitality and excellence of Minnesota’s health research.
• Provide world class facilities and an environment that will attract and retain the top researchers, faculty, and staff in the biomedical sciences and health fields.

The realm of bioscience and biomedical research is constantly evolving. New areas of science and new technologies will emerge that will drive translational research. The structure of bio-research teams will become more interdisciplinary. These trends in turn will have an impact on the physical facilities and districts developed to support these activities—research, clinical, and teaching environments will become more integrated.

To support this research-intensive and collaborative environment, the vision for the East Gateway District is of a vibrant, dynamic, urban research campus, where teams can have access not only to the best facilities and equipment, but also to other researchers in the District, in the University, and in the larger research community.

Future buildings will be grouped into walkable neighborhoods or clusters supported by shared technology and common amenities, seminar spaces, and areas for both formal and informal interaction. The District will include a mix of support, retail, commercial, entertainment, and recreational uses. Light rail transit will conveniently link the District to the main campus and the Academic Health Center, along with a high quality, outdoor pedestrian environment.

DISTRICT MASTER PLAN RECOMMENDATIONS
Recommendations of the East Gateway District Master Plan address urban design and program themes, including:
• Gateways and identity.
• Land use and activity patterns.
• Development framework.
• Development density.
• Building massing.
• Architectural guidelines.
• Landscape and open space elements.
• Circulation, transit, and parking.
• Infrastructure concerns.

SUMMARY OF THE EAST GATEWAY DISTRICT MASTER PLAN

The District Master Plan proposes a mix of new research and academic facilities, core technical support functions, and new office and retail uses within the 54-acre District. Activity in the District will be supported with the development of the Central Corridor LRT line on 23rd Avenue, combining its transit stop with a new multi-modal parking garage and bus transit/transfer facility. A buildout calculation of future development estimated that the District would accommodate approximately 3 to 4 million gross square feet (gsf) of total new development, including 1.9 to 3.0 million gsf in new academic and research facilities. Additional parking garages and smaller surface lots will maintain 4,200 parking spaces in the area as parking support for new development and as shared parking reserve for game days at the football stadium and athletic venues.

The physical development pattern creates a dense, walkable urban research district, with buildings in the 4- to 7-story range. Development is proposed on both sides of 6th Street, taking advantage of the undeveloped land immediately north of the football stadium, bringing research facilities into the pedestrian environment surrounding the stadium and helping to activate the area on non-game days.

Two gateways are proposed for the District: one at the most visible corner of University Avenue and Huron Boulevard/23rd Avenue, and the second at the intersection of Oak and 6th Streets. The first is a prominent corner that will create a foreground to the stadium. The first phase research cluster at the intersection of 23rd Avenue and 6th Street will be visible and accessible from this gateway. The cluster of buildings will be served by a new bio-commons with shared retail, food service, support amenities, and seminar space to create a common area of interaction for the next three buildings developed in the District. As this area builds out, it will be served by the construction of the Stadium Village transit stop of the Central Corridor LRT, scheduled to be completed in the same time frame as the next three buildings funded by state legislation.

The gateway proposed at 6th and Oak Streets is the nucleus of a second research cluster and bio-commons, visible from University Avenue with a realignment of Oak Street at 6th Street. It is easily linked to the core campus and Academic Health Center by a proposed pedestrian walkway, the Science Walk, that will connect directly to the Scholars Walk at McNamara Alumni Center.

USE OF THE DISTRICT MASTER PLAN

The following District Master Plan report describes in more detail the existing conditions of the District, the organizational concept for the East Gateway District, and its District and architectural guidelines. It is the intent of this report to guide development of the East Gateway District according to the principles established for the plan. It is a flexible guide, describing a framework for development, general massing, building envelopes, open space relationships, and key pedestrian connections, but it does not address specific building footprints or architectural design. It can therefore be adaptable to future program changes and needs within its framework as the District builds out.

DEVELOPMENT SUMMARY

• 54-acre District total
• Approximately 3-4 million gsf of new development
• Total includes 1.9-3 million gsf of new academic and research uses
• Uses future Stadium Village transit stop of the Central Corridor LRT on 23rd and University Avenues
• 300 employees currently within existing development; up to 700 new employees with Phase I development
23RD AVENUE CORRIDOR
LOOKING NORTH TO 6TH STREET
EXISTING CONDITIONS

INTRODUCTION
About This Section
   This section describes the various influences, past and present, on the 2008 physical context of the East Gateway District. Topics in this section include the following:
   - Historical Context
   - Regional Context
   - 2008-2009 District Inventory
     - Buildings
     - Vehicular Circulation
     - Parking Capacity
     - Utility Corridors

EAST GATEWAY DISTRICT
The East Gateway District has been slowly transforming from an industrial area to University-related uses for several decades. Rail lines and a few remaining silos at the edge of the University are evidence of the District’s recent past. The first use of this District by the University was as surface parking. As the last, large-scale, largely undeveloped land area on campus, it has become a primary location for the University’s expanding academic and research programs. The new TCF Bank Stadium and several research and office buildings in the District have begun the transformation of the East Gateway District into a more active academic quadrant of campus.

   Located on the eastern edge of campus and facing University Avenue as well as high profile venues like Williams and Mariucci Arenas, the new District has to respond to a variety of surrounding land uses and the needs of a built campus identity.

   The site has no major natural features and is relatively flat. Many of the past industrial structures have been removed in recent years to allow for redevelopment. As the site has a fairly intensive industrial past, many recently developed sites have been subject to remediation. This, along with a relatively high water table, likely limits below-grade construction.

   Recent construction during the last decade includes Lions/McGuire Translational Research Facility and the Center for Magnetic Resonance Research (CMRR).

A TRANSITIONING DISTRICT
There are still signs of the District’s industrial roots in the midst of massive construction with the new stadium and research buildings.
HISTORICAL CONTEXT
For much of the 20th century, the East Gateway District was a heavy industrial railyard. This past is clearly depicted in the 1930s historic image on the opposite page. The last of the silos that existed in the District were demolished in early 2008. However, just outside of the northeast edge of the District, a steel-framed silo of historic significance remains and will be preserved in one form or another.

Additionally, just west of Williams Arena is a historic fire station not owned by the University. This structure also falls outside of the study area on the west side of Oak Street.

As the campus has grown and the railyards have moved elsewhere, the land in the District has slowly been acquired by the University. Prior to the development of TCF Bank Stadium, the District was primarily used as a satellite parking zone. This can be seen in the aerial from 2006 shown below. The development of the stadium, new circulation system, and research buildings has dramatically transformed the District.

2006 CAMPUS AERIAL
Prior to recent stadium construction, the East Gateway District was the last vestige of inexpensive surface parking on the campus.

AERIAL VIEW OF CAMPUS, ca.1930
This historic image, courtesy of the Minnesota Historical Society, depicts the extent of the railyards in the East Gateway District.
REGионаl CONTEXT
Research Relationships
As translational research has been identified as the primary focus for future academic buildings in the District, the site's relationship to other health related resources on and around the campus is extremely important. The specific centers that are of programmatic significance to the District include the Academic Health Center, the planned Ambulatory Care Clinic, and biosciences in the academic core.

The distance from the East Gateway District to each of these centers is a significant challenge for future research collaboration. The plan will need to address pedestrian and transit connections to link the District to the other centers.

To the east of the site, the city has promoted research-focused development. The University hopes that this development will collaborate and partner with research in the East Gateway District, and is therefore a vital physical connection to create.

Connections
University and 23rd Avenues are the two primary vehicular connections to the campus from the larger region. However, in the long term, the planned Granary Road will also connect the site as a regional bypass.

Other vehicular connections to the main campus are limited due to the removal of through roads from the campus over time.

Oak Street is the only remaining north/south connection from the campus to the East Gateway District.

In general, the District is dominated by vehicular traffic. Roads and parking lots still populate the site, and new roads have been constructed around the stadium to serve both its needs as well as the growing needs of new academic buildings.

The transitway that connects the Minneapolis and St. Paul campuses ends at the edge of the new District; campus buses then go around the stadium to enter campus. The transitway to St. Paul is a permanent connection and is an asset to the new District and the neighborhood. Buses operated by Metro Transit also run close to the site, with stops along University and Washington Avenues.

The #16 bus, used by a large part of the University community, connects downtown St. Paul to downtown Minneapolis through the University’s Minneapolis campus. Use of the Route #16 will be diminished by the planned Central Corridor LRT line, which should open in 2014. The planned closure of part of Washington Avenue to automobile traffic to allow for the future light rail will have a profound effect on the vehicular circulation patterns of the East Bank campus.

Pedestrian connections to campus are challenging from the East Gateway District. There are only minor sidewalks along very busy streets. Walking from the East Gateway District to almost anywhere on campus requires crossing at least one major thoroughfare. The closest major pedestrian corridor is Scholars Walk, which ends to the southwest of the McNamara Alumni Center.

Surrounding Land Uses
The industrial railyards to the north create an impermeable barrier on the edge of the District. The industrial buildings and silos that remain here connect the history of the East Gateway District to its history as an industrial center.

To the east along University Avenue, the urban fabric of Minneapolis picks up where the University leaves off. Small-scale retail shops, apartments, a hotel, a gas station, and many other buildings are mixed together to serve the needs of the University as well as the residents in the neighborhood. University Avenue is also the campus entrance from the east, giving the East Gateway District its name and subsequent responsibility to define the threshold of the Minneapolis campus. To the northeast, there are aging industrial and warehouse buildings, but private development has begun to plan for biomedical research facilities to complement the academic research programs in the East Gateway District.

The District’s southern edge is University Avenue and around the edge of the TCF Bank Stadium. This edge is perhaps the least tangible boundary, as both the scale of the stadium and the variety of buildings along Washington
Section 2  EXISTING CONDITIONS

Legend

Pedestrian Connections
Central Corridor LRT Route

Proposed LRT Transit Stops
Research Hubs

Academic Core/ Northrop Mall
Academic Health Center
Future University Clinic

East Gateway District
TCF Bank Stadium
Future Mixed Use
Private Research
Private Support Zone
Private Development

5-Min. / 1/4 Mile Walk

University Avenue
Avenue obscure the transition between districts. University Office Plaza and the Information Technology building, both along University Avenue, help articulate this challenging transition.

To the west, Williams and Mariucci Arenas, along with the new football stadium, connect the District to the adjacent athletic area. The scale of these buildings, unique to their use and capacity, also presents a challenge.

**2008-2009 DISTRICT INVENTORY**

The following illustrations highlight the existing features of the East Gateway District related to buildings, vehicular circulation, parking, and utilities. These illustrations are intended to provide a baseline for recommendations made later in the report.

1. Medical Biosciences Building Under Construction
2. Lions/McGuire Translational Research Facility from 6th Street
3. Williams Arena
4. View from University and 23rd Avenues
5. TCF Bank Stadium Under Construction
6. Historic Steel Silos
7. Historic Fire Station
2008-2009 UNIVERSITY-OWNED BUILDINGS

Within the defined study area there are a total of six University-related buildings, not including the stadium. Each of these is identified on this diagram with associated use and area.

In addition to these buildings, there are a few other privately-owned buildings in the District. These are primarily located on the eastern edge of the study area and include a residential complex and several small industrial buildings.
This diagram illustrates the function of the road corridors in the District. University Avenue is a major regional connector and defines the southern boundary of the District. Oak Street and 23rd Avenue are the major north/south connectors into the District, and 6th Street is the primary east/west connector within the District.
Currently providing the majority of the surface parking for the campus, the East Gateway District's future parking strategy directly affects the overall campus's parking capacity. As future development comes on line in the District, structured parking will be a necessity to meet the needs of the District as well as the overall campus.
A survey of major and medium importance utilities is provided here for reference. Utilities are and will be changing on a regular basis. Therefore, recent survey information should be referenced when planning and designing new facilities.
DISTRICT ORGANIZATION

INTRODUCTION
This section describes the plan’s overall organizational structure. Topics in this section include the following:

- Organizational Concept
- Land Use Zones
- Research/Academic Zone

Overview
Early in the planning process, the organizational concept was developed to help guide the physical organization of the District. It divides the District into two major edges—academic/research and stadium—and designates where major gateways into the District should occur.

Based on this simple diagram, the District is subdivided into six land use zones. Each zone’s intended focus and primary use is described in this section, with most of the attention given to the academic/research zone, which is the focus of this effort.

Within the academic/research zone, there are three research clusters and one lab support cluster planned. Each cluster will include research facilities that share a research commons facility. This common space will function as a social and research hub and will include amenities such as cafes and dining. Additionally, shared research facilities will be located in the commons to reduce duplication and encourage collaboration.

TCF BANK STADIUM
Opening for the 2009 season, the stadium will be the most dominant feature of the East Gateway District.
ORGANIZATIONAL CONCEPT

The organizational concept for the East Gateway District grew from two basic planning challenges. First, the research focus of the District must find a way of working with the new TCF Bank Stadium to create a larger image for the entire University. Second, as the Minneapolis campus builds its eastern edge, the symbolic “gateway” role of the District as a campus threshold can be realized.

As the most dominant and identifiable feature of the East Gateway District, TCF Bank Stadium is the major organizing element of the District. Using the stadium as an anchor, the District is divided diagonally from the intersection of Huron Boulevard and University Avenue to the intersection of 6th and Oak Streets (reference the graphic on the following page). This division designates the southwest edge (in green) as the area “owned” by the stadium. This allows the stadium to continue to have a dominant image befitting its identity and presence.

With prominent stadium frontage on University Avenue, the northeast edge will be the primary research and academic focus of the District, and 6th Street and 23rd Avenue will become the primary vehicular and pedestrian routes for the future academic area.

Where each of the arcs meet are opportunities for gateways—formal entrances to the area. The larger of these, at the intersection of Huron Boulevard, 23rd Avenue, and University Avenue, is a true gateway to the University itself. The development of this intersection is crucial to welcoming traffic to the formal University campus.

The second gateway at the intersection of 6th and Oak Streets is visible from University Avenue and the campus, and has the potential to become the primary gateway for the research and academic functions of the District, both for the campus to the south and Dinkytown to the west. Although the stadium’s presence dominates the southern edge, the gateway at 6th and Oak Streets has the opportunity to create a visual identity for the District and connect it to the existing campus fabric.
There are three existing biomedical research facilities in the District that help to organize future planning concepts.

**LAND USE ZONES**

**Introduction**

The land use diagram on the facing page and accompanying text describes the primary uses of each zone in the District, with the understanding that mixing uses within the District itself is encouraged. Other uses, such as small-scale retail, restaurants, library, or recreation can be considered for each zone if they support the primary focus of the zone itself. Cafes and restaurants in the East Gateway District will provide amenities for students and faculty, as well as the surrounding athletic venues.

**Research/Academic**

The research/academic zone is the driver and primary focus of this planning effort. In general, this District is intended to focus on biomedical and translational research facilities and will include parking and support facilities for these activities.

**Stadium**

Driving the organizational concept, the stadium zone is intended to support the stadium building and its users, provide prominent frontage on University Avenue, and allow space for game day functions to occur. The long-range development for this area will be nearly complete when the stadium is finished later in 2009. There will be no future building on this site, and continued development should work in service to the stadium’s prominence and the needs of campus visitors for athletic events.

**Intermodal/Mixed Use**

With the impending construction of the Central Corridor LRT line through the District, an opportunity exists for both a transit hub to handle the traffic and a way to interface with the existing mixed use along University Avenue. While specific requirements are likely to shift, the current facility is being planned to include a light rail platform, a major parking structure, a bus transfer station for University and Metro Transit buses, and associated rider services like newspaper and coffee stands.

This plan assumes that the platform is located parallel to 23rd Avenue, between University Avenue and the existing transitway to the St. Paul campus. The other elements will be housed in a large, multi-level facility to the northeast of the platform. The mixed use component of the zone is envisioned in a future linear building that parallels the platform and terminates at University Avenue. This facility will help define the intersection and the entrance to the University itself. Specific uses will be determined later, but could include ground floor retail with offices and residential space above.
Non-Research Academic
Recently acquired by the University, this zone is an ideal location for support services for the stadium, the District, and the overall campus. The only related facility in this zone is the MAST Laboratory, used by the Civil Engineering Department. Currently, plans are underway to locate land care facilities to the eastern edge of this zone. The remainder of the site, just west of the MAST Laboratory, is intended to serve support functions as needs are better defined over time. Structures built here should reflect the urban and industrial nature of the location and the site, as well as the zone’s identity as part of the University.

Commercial/Mixed Use and Research Related
These two zones reflect the long-range planning vision of the city as outlined in the Southeast Minneapolis Industrial (SEMI)/Bridal Veil Refined Master Plan (SEMI Master Plan), May 2001. This area falls into the South Redevelopment Area, which is defined by the plan to have a balance of uses, including light industrial, office, research, medium- to high-density residential, and limited retail/service areas. Additionally, the plan calls for “relatively dense” development of 3- to 5-story buildings. While the University does not control either of these zones, they are included here in order to plan for a successful physical transition between University functions and private development.

Consistent with the SEMI Master Plan, the research related zone is expected to develop into research-oriented facilities. The University hopes to build partnerships with private research groups that wish to be adjacent to biomedical and translational research facilities. Alternatively, other campus research functions that would benefit from co-location to the biomedical facilities would be established in this area. Future access to road and regional transit will support job growth and economic development in the region. These partnerships could allow for the sharing of ideas and resources related to the benefit of both the private groups and the University.

Architecturally, this zone should be encouraged to visually complement the University’s research facilities. Also consistent with the SEMI Master Plan, these zones should provide a mix of commercial and residential uses that support both the University and the larger region.
The 2001 SEMI Master Plan laid the foundation for the uses proposed for the private research and commercial/mixed use zones in the East Gateway District.
RESEARCH/ACADEMIC ZONE

Within the East Gateway District, a program-based organizational concept was developed to encourage interaction, provide support, and subdivide the District into three smaller research clusters. All research facilities are organized around a central space, called a research commons. The research commons acts as the nucleus for each cluster, providing elements of public and shared space amid substantial private or semi-private office and laboratory spaces. The existing space suggests that three clusters could exist in the District along with a smaller core lab support cluster.

Research/Academic Clusters

The west research cluster includes the Lions/McGuire Translational Research Facility. This cluster, when complete, will also be the first set of buildings when the District is accessed from the campus gateway at 6th and Oak Streets.

The east research cluster includes the MBB and is currently planned as the first phase of new development in the District. Specific challenges of this cluster will include creating a link to the planned intermodal transit station in the District, establishing a cohesive image of the East Gateway District, and creating a successful connection to the existing facilities in the District as well as the rest of the campus.

The southeast research cluster will likely be the last to develop. Of particular challenge in this cluster is the Thompson Center for Environmental Management. Use of the environmental management/waste facility is critical to activities that occur in the District, but the building’s orientation and functional traits do not contribute to the core-focused concept of building clusters. As the east and west clusters develop, the role of this third cluster and its relationship to the research related zone will become more clear.

Core Lab Support

The core lab support cluster includes the CMRR and the core support functions housed in the MBB, specifically its vivarium space. The design of the CMRR facility’s first expansion is currently being designed and is scheduled to be completed in 2010. The imaging functions in this facility will serve the larger District and University. Contingent on future land holding, the site may support one additional renovation/expansion in the future. The MBB has been designed with vivarium space within the building. While this vivarium space could be expanded, future programmed phases will need to evaluate the optimal locations for such facilities in proximity to future researchers. Vivaria facilities should not be located visible to primary street frontages.

Research Commons

In order to share expensive lab resources and provide non-proprietary space for University staff and researchers, research commons spaces
This diagram illustrates the relationships and connectivity between research clusters planned in the East Gateway District.
are planned for each research cluster. The first commons will be built with the east research cluster. Each commons is planned to be the center of activity for each cluster. Internally and externally, the research commons should be designed to represent the larger identity of the cluster. Architecturally, these are public beacons to the wider research community in a series of buildings that could otherwise appear closed and impenetrable.

Functionally, the research commons can serve two roles. First, they house shared research instrumentation and would typically be spread to each research building in the District. By centrally locating expensive equipment, facilities become more efficient to operate.

Building on the idea of bringing researchers together to a central location, the commons can serve a second function, that of a social hub and gathering space. University staff and students as well as researchers can access cafes and other amenities such as conferencing/seminar spaces.

The specific program for each research commons will be evaluated in the context of the research programs that are planned for adjacent buildings.
As part of the East Gateway District Study, the planning team considered the initial program for the four facilities funded by the state. These include the following:

<table>
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<tr>
<th>Facility</th>
<th>Size</th>
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</thead>
<tbody>
<tr>
<td>CMRR Expansion</td>
<td>56,000 sf</td>
</tr>
<tr>
<td>Cancer Biomedical Building</td>
<td>120,000 sf</td>
</tr>
<tr>
<td>Lillehei Cardiovascular Research</td>
<td>120,000 sf</td>
</tr>
<tr>
<td>Infectious Disease/Neuroscience</td>
<td>90,000 sf</td>
</tr>
</tbody>
</table>

The planning team worked with the Project Steering Committee to validate the initial program for the four facilities. The planning team benchmarked the occupancy densities and proposed gsf per occupant against peer facilities and found the program to be within comparable ranges. The planning team also evaluated a range of percentages for net square feet to gsf, establishing a 55% building efficiency target for each facility.

The planning team and the Project Steering Committee then evaluated the percentage of dedicated space to shared space by space type typical for biomedical research buildings. This helped determine parameters for the amount of shared space that might be part of the proposed commons for each research cluster.

The planning team also compared the percentage of open labs, lab support areas, primary investigator offices, staff support space, interaction space, and conferencing space against peer research facilities, and tested a number of different lab footprints as part of the development of the framework plan for the District.
## UNIVERSITY OF MINNESOTA BIOMEDICAL SCIENCES ALLOCATION OF SPACES

### “Typical” Project - Percent of Area

<table>
<thead>
<tr>
<th></th>
<th>Biomedical</th>
<th>Physical Sciences</th>
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<tbody>
<tr>
<td>Laboratory</td>
<td>25% to 30%</td>
<td>35% to 45%</td>
</tr>
<tr>
<td>Lab Support</td>
<td>25% to 30%</td>
<td>15% to 20%</td>
</tr>
<tr>
<td>Research Office</td>
<td>15% to 20%</td>
<td>20% to 25%</td>
</tr>
<tr>
<td><strong>Total Dedicated Space</strong></td>
<td>65% to 80%</td>
<td>70% to 90%</td>
</tr>
<tr>
<td>Interaction</td>
<td>4% to 6%</td>
<td>5% to 10%</td>
</tr>
<tr>
<td>Vivarium</td>
<td>4% to 6%</td>
<td>-</td>
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<tr>
<td>Core Facilities</td>
<td>7% to 10%</td>
<td>0% to 7%</td>
</tr>
<tr>
<td>Non-Scientific Support</td>
<td>2% to 8%</td>
<td>2% to 8%</td>
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<tr>
<td>Building Support</td>
<td>2% to 3%</td>
<td>2% to 3%</td>
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<td>Other</td>
<td>1% to 2%</td>
<td>1% to 2%</td>
</tr>
<tr>
<td><strong>Total Shared Space</strong></td>
<td>20% to 35%</td>
<td>10% to 30%</td>
</tr>
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</table>

## UNIVERSITY OF MINNESOTA BIOMEDICAL SCIENCES ALLOCATION OF SPACES

### UM East Gateway District Potential Program

<table>
<thead>
<tr>
<th></th>
<th>Biomedical</th>
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<tbody>
<tr>
<td>Laboratory</td>
<td>30%</td>
<td></td>
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<tr>
<td>Lab Support</td>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>Research Office</td>
<td>15%</td>
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</tr>
<tr>
<td><strong>Total Dedicated Space</strong></td>
<td>75% to 80%</td>
<td></td>
</tr>
<tr>
<td>Interaction</td>
<td>5%</td>
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<tr>
<td>Vivarium</td>
<td></td>
<td>5% to 10%</td>
</tr>
<tr>
<td>Core Facilities</td>
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<td>15%</td>
</tr>
<tr>
<td>Non-Scientific Support</td>
<td></td>
<td>2% to 7%</td>
</tr>
<tr>
<td>Building Support</td>
<td></td>
<td>2%</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>1%</td>
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</table>
| **Total Shared Space** | 25% to 30%          | Electron Microscopy Facility
|                      | Central Dining/Conference |

**Electron Microscopy Facility**

**Central Dining/Conference**
INTRODUCTION
About This Section
This section describes the district level urban design framework that will guide future development. Topics in this section include:

- Development Area
- Development Framework
- Height and Density
- Transit Connections
- Vehicular Circulation and Service
- Pedestrian Connections
- Parking
- Landscape and Open Space
- Art Opportunities
- Utilities and Infrastructure

PLANNING PRINCIPLES
Development principles were established early in the planning process to guide the creation of the plan. The planning principles for the District are intended to:

1. Provide a supportive academic and research environment.
2. Create an image of architectural distinction, integrity, and brand.
3. Optimize the use of scarce land resources.
4. Maximize flexibility for future development.
5. Strengthen the multi-modal transportation system in the area.
6. Create an attractive, functional, and safe environment for pedestrians and cyclists.
7. Integrate into the existing campus and surrounding community.
8. Build a real sense of community and place for the District.
9. Create a cohesive, memorable system of public spaces.
10. Develop a District that is environmentally and operationally sustainable.

It is the intent of this section to guide development of the East Gateway District according to the principles established for the plan. This section describes a framework for development, general massing, building envelopes, open space relationships, key pedestrian connections, circulation, parking, infrastructure, and public art recommendations.

The urban framework provides a long-term view of the District at build out. In the short term, there are a select number of existing facilities that must be accommodated in the District Master Plan, that in the long term are re-envisioned in another location or configuration. They include the University Office Plaza office building on University Avenue at 23rd Avenue, and the Fay Thompson Center for Environmental Management on 23rd Avenue at 4th Street.

The landscape and pedestrian spine of Scholar’s Walk on campus mitigates the variety of scale and massing behind it.
The Development Area Plan (shown on the facing page) is a physical framework that establishes the desired character and relationship of built areas to open space and the public realm of the District. It defines the build-to lines along streets and right-of-ways in order to create a consistent street wall for future buildings. The framework also establishes key open space zones and pedestrian malls that subdivide the larger blocks into a more human scale pattern, and delineates the developable areas within the District.

This plan offers maximum flexibility for future building decisions, yet preserves the absolutely necessary components of the plan. The light green areas of the plan represent all of the land that is developable in the District.

The table on the left describes each non-buildable zone in terms of its flexibility to be modified, specific location, and recommended size. Because the District is within the larger urban street network, some of the descriptions defer to city-defined right-of-ways and setbacks. Most of the open space descriptions are flexible except for malls, which should be consistent throughout.

### RIGHT-OF-WAY AND OPEN SPACE CORRIDOR DESCRIPTIONS

<table>
<thead>
<tr>
<th>Element</th>
<th>Location</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Roadways</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R1</td>
<td>Oak, 6th to Granary</td>
<td>100’ Right-of-Way, No Setbacks</td>
</tr>
<tr>
<td>R2</td>
<td>21st, 6th to Granary</td>
<td>80’ Right-of-Way, No Setbacks</td>
</tr>
<tr>
<td>R3</td>
<td>23rd, University to Granary</td>
<td>90’ Right-of-Way, 10’ Setback on East Side of Road Only</td>
</tr>
<tr>
<td>R4</td>
<td>25th, University to Granary</td>
<td>100’ Right-of-Way, No Setbacks</td>
</tr>
<tr>
<td>R5</td>
<td>6th, Oak to 25th</td>
<td>80’ Right-of-Way, 40’ Setback on North for Swale</td>
</tr>
<tr>
<td>R6</td>
<td>Transitway</td>
<td>100’ Right-of-Way, Verify with Central Corridor Plan</td>
</tr>
<tr>
<td>R7</td>
<td>4th, 25th to 27th</td>
<td>Use City-Defined Right-of-Way, Approximately 80’</td>
</tr>
<tr>
<td>R8</td>
<td>University</td>
<td>Use City-Defined Right-of-Way and Setback</td>
</tr>
<tr>
<td>R9</td>
<td>University</td>
<td>Encourage 15’-20’ Pedestrian Zone</td>
</tr>
<tr>
<td>R10</td>
<td>27th, University to Granary</td>
<td>Use City-Defined Right-of-Way and Setback</td>
</tr>
<tr>
<td>R11</td>
<td>University</td>
<td>100’ Right-of-Way with 25’ Setback</td>
</tr>
<tr>
<td>R12</td>
<td>Granary</td>
<td>Will Need to be Refined During Granary Development</td>
</tr>
<tr>
<td><strong>Open Spaces</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P1</td>
<td>Oak and 6th Plaza</td>
<td>Flexible Open Space to Define Plaza</td>
</tr>
<tr>
<td>C1</td>
<td>Courtyard West of Lions</td>
<td>Approximately 100’ x 200’</td>
</tr>
<tr>
<td>C2</td>
<td>Courtyard North of Stadium</td>
<td>Approximately 130’ x 300’</td>
</tr>
<tr>
<td>C3</td>
<td>Courtyard North of MBB</td>
<td>Approximately 100’ x 420’</td>
</tr>
<tr>
<td>C4</td>
<td>Courtyard on Thompson Site</td>
<td>Approximately 120’ x 240’ (South of 6th)</td>
</tr>
<tr>
<td>M1</td>
<td>Mall Between Lions &amp; CMRR</td>
<td>Minimum of 100’ Wide</td>
</tr>
<tr>
<td>M2</td>
<td>Mall East of MBB</td>
<td>Minimum of 75’ Wide</td>
</tr>
<tr>
<td>M3</td>
<td>Mall North of Thompson</td>
<td>Minimum of 75’ Wide</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S1</td>
<td>Setback North of Intermodal</td>
<td>Minimum of 50’</td>
</tr>
</tbody>
</table>
**Section 4**

**DEVELOPMENT AREA PLAN**

**LEGEND**

- **Existing Academic/Research**
- **Developable Land Area**
- **District Open Space Zones**
- **Stadium Open Space**
- **Stormwater Treatment Area**
- **Stadium Plaza and Circulation**
- **Setback**

---

0' 200' 400' 800'
The Development Framework Plan on the facing page combines the Development Area Plan from page 41 with some assumptions of how buildings could be organized in the District. The building zones, coded by primary use, are laid out using typical dimensions for each use type. Research and commons building zones are all 100 feet wide, which could be wider or narrower depending on the specific lab configuration.

The table on the left lists each building zone, defines the base gsf, and provides a low and high range for the number of floors and subsequent total gsf. This table is provided as a range of potential development and gives some indication as to the potential height the building could achieve. The actual gsf per building will vary depending on number of floors, configuration of the base floor, existence of a lower level, and whether penthouse space is provided or not.

The phase one area of development is identified by the block defined by 6th Street north to the future Granary Road extension, and from 21st Street to 23rd Avenue.

<table>
<thead>
<tr>
<th>DEVELOPMENT POTENTIAL</th>
<th>Zone</th>
<th>Ground Floor sq. ft.</th>
<th>Low Range floors</th>
<th>gsf</th>
<th>High Range floors</th>
<th>gsf</th>
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<tbody>
<tr>
<td>Research/Academic</td>
<td>R1</td>
<td>22,800</td>
<td>4</td>
<td>91,200</td>
<td>7</td>
<td>159,600</td>
</tr>
<tr>
<td></td>
<td>R2</td>
<td>21,000</td>
<td>4</td>
<td>84,000</td>
<td>7</td>
<td>147,000</td>
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<tr>
<td></td>
<td>R3</td>
<td>19,450</td>
<td>4</td>
<td>77,800</td>
<td>7</td>
<td>136,150</td>
</tr>
<tr>
<td></td>
<td>R4</td>
<td>18,750</td>
<td>4</td>
<td>75,000</td>
<td>7</td>
<td>131,250</td>
</tr>
<tr>
<td></td>
<td>R5</td>
<td>26,350</td>
<td>4</td>
<td>105,400</td>
<td>7</td>
<td>184,450</td>
</tr>
<tr>
<td></td>
<td>R6</td>
<td>11,600</td>
<td>4</td>
<td>46,400</td>
<td>7</td>
<td>81,200</td>
</tr>
<tr>
<td></td>
<td>R7</td>
<td>31,550</td>
<td>4</td>
<td>126,200</td>
<td>7</td>
<td>220,850</td>
</tr>
<tr>
<td></td>
<td>R8</td>
<td>26,500</td>
<td>4</td>
<td>106,000</td>
<td>7</td>
<td>185,500</td>
</tr>
<tr>
<td></td>
<td>R9</td>
<td>26,000</td>
<td>4</td>
<td>104,000</td>
<td>7</td>
<td>182,000</td>
</tr>
<tr>
<td></td>
<td>R10</td>
<td>19,000</td>
<td>4</td>
<td>76,000</td>
<td>4</td>
<td>76,000</td>
</tr>
<tr>
<td></td>
<td>R11</td>
<td>16,250</td>
<td>4</td>
<td>65,000</td>
<td>4</td>
<td>65,000</td>
</tr>
<tr>
<td></td>
<td>R12</td>
<td>32,850</td>
<td>4</td>
<td>131,400</td>
<td>4</td>
<td>131,400</td>
</tr>
<tr>
<td></td>
<td>R13</td>
<td>25,800</td>
<td>4</td>
<td>103,200</td>
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<td>180,600</td>
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<tr>
<td></td>
<td>R14</td>
<td>24,550</td>
<td>4</td>
<td>98,200</td>
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<td>171,850</td>
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<tr>
<td></td>
<td>R15</td>
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<td>76,400</td>
<td>7</td>
<td>133,700</td>
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<td></td>
<td>R16</td>
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<td>85,200</td>
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<td>149,100</td>
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<td></td>
<td>R17</td>
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<td>143,150</td>
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<td></td>
<td>R18</td>
<td>29,900</td>
<td>4</td>
<td>119,600</td>
<td>7</td>
<td>209,300</td>
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<tr>
<td>Research Addition</td>
<td>RA1</td>
<td>16,900</td>
<td>1</td>
<td>16,900</td>
<td>1</td>
<td>16,900</td>
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<td></td>
<td>RA2</td>
<td>59,100</td>
<td>1</td>
<td>59,100</td>
<td>1</td>
<td>59,100</td>
</tr>
<tr>
<td></td>
<td>RA3</td>
<td>7,250</td>
<td>1</td>
<td>7,250</td>
<td>4</td>
<td>29,000</td>
</tr>
<tr>
<td>Commons</td>
<td>C1</td>
<td>16,300</td>
<td>4</td>
<td>65,200</td>
<td>7</td>
<td>114,100</td>
</tr>
<tr>
<td></td>
<td>C2</td>
<td>13,250</td>
<td>4</td>
<td>53,000</td>
<td>4</td>
<td>53,000</td>
</tr>
<tr>
<td></td>
<td>C3</td>
<td>13,200</td>
<td>4</td>
<td>52,800</td>
<td>7</td>
<td>92,400</td>
</tr>
<tr>
<td>Support</td>
<td>S1</td>
<td>30,200</td>
<td>2</td>
<td>60,400</td>
<td>2</td>
<td>60,400</td>
</tr>
<tr>
<td></td>
<td>S2</td>
<td>30,200</td>
<td>2</td>
<td>60,400</td>
<td>2</td>
<td>60,400</td>
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<tr>
<td>Mixed-Use</td>
<td>M1</td>
<td>28,350</td>
<td>6</td>
<td>170,100</td>
<td>6</td>
<td>170,100</td>
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<tr>
<td></td>
<td>M2</td>
<td>11,150</td>
<td>10</td>
<td>111,500</td>
<td>10</td>
<td>111,500</td>
</tr>
</tbody>
</table>
HEIGHT AND DENSITY
Using the table from page 42, an overall Floor Area Ratio (FAR) can be calculated for the District. Due to the non-typical building typologies of the entire District (i.e., stadium, intermodal station, etc.), the FAR was only calculated for the academic/research zone. This allows for a direct comparison to other research, clinical service, and academic districts.

The table to the right describes a high and low range of FAR that could be achieved in the zone based on the assumptions of height listed in the table on page 42. Since FAR is a function of density, the planned gsf of parking structures and existing facilities were also included in the calculation.

As a benchmarking exercise, the Northrop Mall and the AHC East Bank campus were analyzed to determine their FAR. These references allow for a better understanding of how the East Gateway District might look at a particular FAR. The analysis for each is summarized to the left. The low and high ranges proposed for the academic/research zone fall between the existing FAR of the Campus Mall and AHC East Bank campus.

Within the District, the plan recommends a building height minimum of 4 stories and a maximum of 7 stories. It is further recommended that the two gateway nodes have an increased height over the rest of the District, with buildings at 6th and Oak Streets recommended at 7 stories. This would result in an FAR range average of 1.7. Proposed mixed use buildings at the University Avenue/23rd Avenue intersection are recommended to reach 10 to 15 stories to create a true urban gateway and presence on Huron and University Avenues.

Overall, academic/research buildings between 4 and 7 stories will remain below the established height of the TCF Bank Stadium, as illustrated in the diagram below.
ACADEMIC/RESEARCH FLOOR AREA RATIO

**Low Range**
- Existing GSF (Lions/McGuire, MBB, & CMRR) 307,200
- New Academic/Research GSF 1,907,000
- Includes Research/Academic and Research Addition SF
- Parking Structures GSF 648,800
- Total GSF in Academic/Research Zone 2,863,000
- Land Area of Zone 43.8 (acres)

<table>
<thead>
<tr>
<th>Highlighted in Blue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Range FAR 1.5</td>
</tr>
</tbody>
</table>

**High Range**
- Existing GSF 307,200
- New Academic/Research GSF 3,134,000
- Includes Research/Academic and Research Addition SF
- Parking Structures GSF 648,800
- Total GSF in Academic/Research Zone 4,090,000
- Land Area of Zone 43.8 (acres)

<table>
<thead>
<tr>
<th>Highlighted in Blue</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Range FAR 2.1</td>
</tr>
</tbody>
</table>

**Recommended FAR 1.7**
**TRANSIT CONNECTIONS**

A key principle of the District Master Plan is the development of an integrated transportation system emphasizing pedestrians and transit. Due to the East Gateway District’s distance from the academic core, transit will be critical to ensuring connectivity to other research components on campus.

The primary connection to the rest of the university will be the planned Central Corridor LRT line. The line is planned to make stops in the East Gateway District and at the academic core at Washington Avenue and Union Street. Additionally, the proposed intermodal station will have a bus transfer station on the first floor. From there, users can access local and regional bus systems.

In addition to these connections, maintaining a direct shuttle connection between the District and the Academic Health Center will also be beneficial.

**LIGHT RAIL**

The planned Central Corridor LRT line will play a major role in connecting the East Gateway District to the academic core of campus.

**STADIUM VILLAGE STATION**

This is the planned section of the Stadium Village platform with 23rd Avenue on the left of the diagram.
VEHICULAR CIRCULATION AND SERVICE

Much of the proposed road network was recently implemented to accommodate the TCF Bank Stadium, to be completed in 2009. This network constitutes a substantial investment in infrastructure; therefore, the plan works with it as much as possible. Having been planned to accommodate future academic activity in the District, the planning team feels that the road network will perform reasonably well without major upgrades.

The East Gateway District is defined to the south by University Avenue. Along with Huron Boulevard, from the south, they provide regional access to the District. When Granary Road is realized in its entirety, it will be a third regional connection. As it is planned, the District will be bordered on the north and south by major vehicular corridors. The only internal east/west connection in the District is 6th Street. Internally, the District will have several north/south connectors that complete the local road network and tie the major east/west corridors together, improving access and visibility into the District, particularly from the future Granary Road.

Road Improvements

Two road realignments are proposed in the District: Oak Street at 6th Street, and 23rd Avenue north of 6th Street. Oak Street was rerouted from its original alignment to improve its intersection with University Avenue and accommodate traffic movement for the new stadium. Plans to extend Oak Street north of 6th Street would take it immediately west of the Lions/McGuire Translational Research Facility. However, a major water main and storm line remains in the old alignment of Oak Street, requiring a permanent easement.

Keeping both the easement and the currently planned Oak Street extension would result in a narrow parcel of land between the two corridors, not suited for development. The District Master Plan therefore proposes a future realignment of Oak Street at 6th Street, utilizing the former right-of-way as the new road alignment. This will require a reconstruction of the intersection of 6th and Oak Streets. This move allows consolidation of buildable land west of the Lions/McGuire Translational Research Facility for a new research cluster and gateway site on the west edge of the District.

In order to create more prominent views to the research cluster on 23rd Avenue, the plan proposes a realignment of the road north of 6th Street to close the view from University Avenue. This will create more visibility and identity for the academic and research facilities at 6th Street and 23rd Avenue, rather than lead to open views of the railyards beyond.

A shift in the alignment of the bus transitway between 23rd and 25th Avenues is also proposed to accommodate future construction of a multi-modal parking structure and its exit ramps.
Road Function and Hierarchy
University Avenue and 4th Street are major roadways that operate as one-way pairs starting at Oak Street and University Avenue. These corridors carry significant volumes of through traffic for the city and District. Their right-of-ways will be maintained in the District Master Plan.

Granary Road
The future Granary Road extension is envisioned as a regional connector and parkway. It will border the District on its north side, and is expected to carry significant traffic when completed. For planning purposes, the vehicular network within the District has been planned with limited new intersections at Granary Road to Oak Street, and 21st, 23rd, and 25th Avenues. Service drives will generally not be allowed from the parkway.

Granary Road should be treated as a front door/address street for future development. The proposed right-of-way and setback on Granary Road will allow for an approximate 25-foot landscape buffer on the southern, University-owned side of the road. This will include sufficient space for a multipurpose trail on its south side, and depending on final road design and layout, a potential bike trail on its north edge.

6th Street
The only east-west connector that traverses the District is 6th Street. It is a multi-functional street, accommodating vehicular traffic, campus bus traffic, pedestrian movement, and stormwater management. Its proposed cross-section allows for a 40-foot setback from edge of curb to building façades, able to accommodate stormwater swales planned and constructed, with pedestrian walks on both sides of the swales. As the District is further built out, increased pedestrian traffic in the District across 6th Street may necessitate installation of additional pedestrian crosswalks.

Primary Connectors
Oak Street, 23rd Avenue, and 25th Avenue are the primary north/south routes. They will extend to Granary Road, providing direct connection from Granary Road to University Avenue. Their proposed cross-section includes approximately 24 feet for pedestrian walks and landscape zones between the curb and building façade.

Secondary Connectors
As Granary Road is completed, secondary streets at 21st and 27th Avenues are proposed from 6th Street to Granary Road to complete the street grid of the District and provide access to service drives and future parking decks.
Service Drives

Service drives for the District will be accessed off of Oak Street and 21st, 23rd, and 25th Avenues. Service access for facilities south of 6th Street is recommended off of the service corridor constructed around the stadium. Here, the service drive doubles as a major pedestrian route, particularly on game days, and must be designed and maintained to a higher level of quality. Where feasible, service functions and loading docks should be consolidated. They should be screened from public streets, adjacent pedestrian walks and courtyard spaces. In some cases, retrofitting existing loading docks with screening (walls or fencing) should occur as additions or renovations of buildings are undertaken. As future phases are programmed, combined loading docks into one central location to serve a grouping of buildings should be evaluated. As much as is feasible, service drives should incorporate pervious pavement to reduce run-off.

Design service corridors to provide efficient and consolidated access for loading and deliveries while creating a safe, attractive pedestrian environment. Service corridors must interact with open space elements (pedestrian malls) at a limited number of crossings. Design of corridors should manage speed, use pervious materials, and contain strategically placed signage and lighting. The design should offset other negative effects through planting and/or structures.
PEDESTRIAN CONNECTIONS

A rich network of pedestrian walks that connect District destinations to transit stops, parking, area retail, and the main campus is fundamental to promoting a sense of place and reduced reliance on the automobile. The District Master Plan delineates this network of primary and secondary pedestrian routes.

Primary and Secondary Routes

Primary routes reinforce the primary street corridors and paths of the District, on 6th Street, 23rd Avenue, Oak Street, and the proposed Science Walk, and the north/south malls and sidewalks that connect Granary Road into the District. Secondary routes are assumptions of future pedestrian movement, but less volume than primary routes. Primary routes may include wider walkways and paving, special wayfinding, and other site amenities.

Several primary pedestrian routes are proposed to break up the long blocks on 6th Street and 23rd Avenue. New mid-block crossings should be installed at these locations to slow traffic and provide a safer crossing. New, consistent mid-block crossing standards can be developed that will alert motorists to slow down and yield to pedestrians. One new pedestrian crossing signal may be warranted at the intersection of the proposed Science Walk and University Avenue. Further study should be conducted to determine if this can be a fully signalized intersection. The East Gateway District Master Plan includes conceptual recommendations for potential above-grade skyway connections, should future programming show demand for such facilities.

Skyway Guidelines

- Skyways in the District will transport:
  a) Research materials.
  b) Building occupants or visitors moving between research buildings.
- Skyways will not be built to connect the District to other campus venues or facilities.
- Skyways will connect buildings within research clusters when at-grade connections would disrupt open space elements or service corridors.
- Buildings will be designed to accommodate through-traffic circulation at the skyway level.
- Skyway connections should occur at a distance from intersections to allow for visibility and wayfinding at the street level.

Streetscape Character

Street cross-sections have been planned with enough distance between buildings and curb lines to allow room for sidewalks, a landscape zone at the curb, and a landscape zone at the building edge. The street edge landscape zone provides some buffer against traffic on the adjacent road. Street trees and tree pits could include a “green streets” design, using the planter area as a filter for local sidewalk run-off.
The landscape at the building edge provides interest along building façades without major entrances or active ground floor uses.

To activate and maintain a quality pedestrian realm, future buildings should include active uses and transparency at the ground level and at major building entries fronting 6th Street and 23rd Avenue. Street trees, pedestrian-scale lighting, site furniture, and wayfinding should be incorporated into a unified streetscape design that creates a contemporary, unique identity for the District, while harmonizing with previous campus site furniture standards. Energy-efficient lighting sources, drought-tolerant plantings, and porous pavement should be used for all pedestrian routes.

**Science Walk Extension**

One of the main pedestrian connections from the East Gateway District to the main campus is proposed along the old alignment of Oak Street, from 6th Street to Walnut Street and Scholars Walk. This route is currently used and designed as a service road to access loading docks at the McNamara Alumni Center and the Recreation Center. The plan proposes a re-design of this visual and physical axis as a major pedestrian route and an extension of Scholars Walk into the District. The re-design should continue to accommodate occasional delivery trucks and access to the loading dock of the Recreation Center. The Scholars Walk extension will take advantage of this pedestrian route with interpretive graphics that tell the story of the research conducted by the University.
PARKING

In order to accommodate future development, surface parking lots will be replaced by structured parking in three locations: west of Oak Street off of 5th Street; a mid-District location east of 21st Avenue north of 6th Street; and the proposed multi-modal deck and transit stop on 23rd Avenue at 4th Street. Ramps will be distributed within a 3- to 5-minute walk of all facilities.

The current parking total is 3,082 spaces, all surface parking. Proposed parking is approximately 4,200 spaces, including up to 3,300 spaces in the three proposed decks. Smaller surface parking lots of 20 to 30 vehicles will be located throughout the District. A multipurpose space proposed at the southeast corner of the stadium has been included in the parking count. This area should be designed as a green, landscaped foreground to the TCF Bank Stadium, with pervious pavement, able to accommodate occasional parking and vendors/concessions on game days.

At the lower range density, the parking ratio of spaces to square feet (sf) of development is approximately 1/500 to 600. The ratio of parking to development will vary depending on building type. Guidelines of spaces/use follow (assumes no transit):

- Wet lab 1 space/700 sf
- Dry lab 1 space/500 sf
- Office 1 space/350 sf

Assuming a mode split in the future of 70/30 (70% use single occupancy vehicles; 30% walk or use transit, carpool, or bike), that would reduce the guidelines as follows:

- Wet lab 1 space/700 sf
- Dry lab 1 space/500 sf
- Office 1 space/350 sf

The long-term parking strategy for the East Gateway District will depend in large part on the nature of future uses and construction of the Central Corridor LRT line. The University should continue to encourage Transportation Demand Management strategies to curb demand for single occupancy vehicles and to promote transit ridership.

SRF Consultants conducted a parking analysis for the East Gateway District Master Plan based on future built conditions to year 2015, testing for the lower density target, and including construction of the Central Corridor LRT line. SRF Consultants assumed that a new 2-lane roadway and extension of 25th Avenue from University Avenue to Huron Boulevard will be constructed as well as a reconfiguration of the intersection of 25th Avenue and Huron Boulevard. They found that with these proposed improvements, future roads and intersections would be capable of handling three parking ramps at the proposed sizes.

Parking ramps will be a strong part of the visual character of the District and should be guided by the architectural design guidelines. Active ground floor uses should be planned for the front façade of decks adjacent to primary corridors and pedestrian routes.

Creative Parking Solutions

Consider mixed use parking structures, tucking convenience parking along service walks and incorporating green paving systems into parking lots.
The parking deck proposed at 5th and Oak Streets will need access to 5th Street without compromising the future building site fronting 5th Street.
Early objectives for the East Gateway District emphasized the creation of a cohesive, memorable system of public spaces. To achieve this goal, the District Master Plan proposes an interconnected network of public and semi-public spaces to balance the proposed density of the District with a sense of physical order, openness, and human scale.

Just as the east bank of the Twin Cities campus is formed by a hierarchy of malls, quadrangles, courtyards, and streets, the open space proposed for the East Gateway District is shaped by a hierarchy of similar elements that include:

- Pedestrian malls.
- Courtyards.
- Gateways and plazas.
- Streets and the public realm.

**Pedestrian Malls**

At lengths of 700 to 800 feet, the current development pattern of over-scaled blocks and roadways designed to the automobile do not enhance the pedestrian experience. The creation of a smaller block pattern with a series of pedestrian malls every 300 to 400 feet will provide more connections through the District, breaking up the scale of the mega-blocks into a more human-scaled urban grid. These pedestrian malls are proposed as similar in scale and character to existing pedestrian routes and former streets on the main campus, such as Church Street north of Washington Avenue and Scholars Walk. Their landscape character will emphasize a linear pattern of movement, open sight lines, and an enhanced pedestrian environment with shade, landscape, lighting, site furniture, and public art.

Enclosed connections between buildings should occur above the first story level as skywalks when crossing pedestrian malls, to allow continuous north/south pedestrian movement. In limited circumstances, if above-grade connections are not feasible, at-grade connections between buildings could be considered only if recessed from the primary frontage of the façade, with transparency and doorways to allow visual access and pedestrian movement through the connection.

**Courtyards**

Courtyards support the social life and intellectual exchange of a campus. A blend of enclosure and openness, the proposed courtyards will make the District a place made of many smaller places—some more intimate; some more engaging. They are intended to provide informal outdoor space for the immediate building occupants, with visibility and accessibility to other District users. Their landscape character can range from informal, unscripted space to more formal, programmed, and unique environments. Courtyards should include a rich palette of landscape and pedestrian amenities, including outdoor seating, shade, lighting, and plantings for color and seasonal interest.
The Illustrative Plan conveys the intended scale and character of Distinct open space and pedestrian connections.
Pedestrian malls provide important breaks within District blocks, adding open space, views, and pedestrian access throughout the District.

As linear elements, pedestrian malls should be clearly articulated with a lush landscape, canopy trees, pedestrian lighting and furnishings, and pervious pavement.
Gateways and Plazas
Two major spaces will anchor the East Gateway District—a major plaza at University Avenue and Huron Boulevard, and a new plaza on the corner of a realigned Oak Street at 6th Street. Both of these gateway plazas are intended as foreground open spaces allowing uninterrupted views to new research and mixed use facilities surrounding the space. New buildings should be oriented to the gateway plazas, with active building bases and major entrances opening onto the space.

The plaza proposed at Oak and 6th Streets serves as a foreground plaza for new research buildings and the Mariucci Arena. This space is envisioned as an urban plaza able to accommodate a high volume of foot traffic on event days. It should be designed with street trees, hardscape areas, lighting, site furnishings, special features such as water or civic art, and high quality materials and finishes. The plaza should easily connect both physically and visually to the proposed Science Walk.

Currently the landscaped berm that divides traffic on Washington Avenue, Huron Boulevard, and University Avenue is proposed as a gateway plaza and a highly urban space surrounded by taller, mixed use buildings, creating a true architectural gateway to the East Gateway District. Major building entries and active ground floor uses should be incorporated to enliven this plaza, with pedestrian amenities and an elegant urban landscape to mitigate the traffic and transit activity of this key corner.

Stadium Corner
Stadium Corner is the southeast corner of the stadium block, and is currently occupied by a university office building. In the long term, that building should be replaced with a multipurpose open space that can accommodate game day vendors and concessionaires, and the foot traffic arriving by the Central Corridor LRT line across 23rd Avenue. A flexible landscape zone within a grid of canopy trees will bring down the scale of the space and make it inviting for pedestrians on non-game days.

Streets and the Public Realm
Streets within the East Gateway District are the backbone of the pedestrian experience. The two primary corridors in the District are 23rd Avenue and 6th Street, which link the District to Stadium Village and the future transit center on 23rd Avenue, and to the athletic area and Dinkytown on 5th/6th Streets. The character of 23rd Avenue on the east side of the District has multiple purposes. It is both a part of the stadium block and part of the vehicular and pedestrian entry to the East Gateway District. With construction of the Central Corridor LRT transit stop and a proposed multi-modal parking deck and bus transit center, 23rd Avenue will also become a significant pedestrian corridor.

A series of vegetated swales in the 6th Street right-of-way will accommodate the District’s stormwater run-off. As the District builds out, more sophisticated models to capture and treat run-off should be incorporated that
include porous pavement, seatwalls, and other linear elements. Pedestrian walks should be constructed on both sides of the bio-swales with connecting paths across to improve pedestrian access to future facilities.

**Sustainable Landscape**

Sustainable design methods for treating urban storm run-off can be incorporated into the open space network of the District as features within courtyards and pedestrian malls, and along the 6th Street corridor. Porous paving should be used for all pedestrian hardscape areas to encourage infiltration. Plant material of native and drought-tolerant species should be used throughout.

The University of Cincinnati provides an excellent example of an urban plaza and gateway to an athletic stadium.

The 6th Street rain gardens can include a more urban edge and refinement.
ART OPPORTUNITIES
Public art will give identity, branding, and a memorable sense of place to the East Gateway District. It will provide interpretive opportunities to explain the research done within the District and its impact to the University, city, state, and country.

The District Master Plan proposes a number of locations for future public art installations as part of the open space network, organized in a hierarchy dependent on the scale and spatial relationship to their surroundings.

Gateway Scale Opportunities
Two gateway locations are identified: one at the Stadium Corner on University and 23rd Avenues, and the second at the intersection of Oak and 6th Streets. Public art in these locations will need to be monumental in scale, visible from a distance, and in proportion to the scale of its plaza space and adjacent buildings such as the stadium, arena, and future research buildings. It must be legible from many vantage points, yet engaging at a pedestrian scale.

District Scale Opportunities
Located at the terminus of major view corridors along the pedestrian malls, these spaces are scaled and situated in a smaller proportion of open space than gateway spaces; however, these locations often have the stadium as a backdrop. Public art at the District scale should be visible and accessible by many within the District.

Courtyard Scale Opportunities
Located within research courtyards, public art at this level is more intimate—legible at a more personal scale. It helps animate the courtyard experience within a cluster of buildings. It may also be viewed from many upper floor vantage points.

PUBLIC ART
Public art in the District should be scaled to its space and include interpretive elements.
PUBLIC ART OPPORTUNITIES AND LOCATIONS

LEGEND

- Gateway Scale Opportunities
- District Scale Opportunities
- Courtyard Scale Opportunities

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UTILITIES AND INFRASTRUCTURE
Due to the integral nature of the infrastructure system compared with the rest of the campus, this plan does not include an exhaustive utility study. Rather, utility and infrastructure conditions were analyzed to determine potential modifications and challenges to implementing the District Master Plan.

Parallel to this study, the University is evaluating campus-wide infrastructure needs. This study along with future studies will be necessary to effectively implement an efficient and sustainable infrastructure network.

Utility Concerns
There were two medium and one major potential concern identified through this study. Each concern is identified in the diagram on the facing page and described in the adjacent table. While the footprints that create these points of concern are flexible, the plan suggests looking at the possibility of relocating these utilities when it is time to move forward with the specific facilities to allow optimal development.

Through the planning process, the one major area of concern was determined to be worth considering for relocation in the future because of the quality of space that would be created at the Oak and 6th Streets gateway. Additionally, the steam line in question may have to be upgraded to provide additional supply. Decisions about when to relocate utilities at the Oak and 6th gateway will be assessed based on financial and development opportunity parameters. This phase of development is anticipated to occur in the long term future.

Infrastructure Expansion
As noted on the plan on the facing page, the current electric and steam supply lines do not exist to 23rd Avenue. This poses a problem for the first phase of research buildings discussed later in this report. These utilities will need to be extended before opening any new research facilities east of where they currently end.

The Utility Master Plan, approved in 2009, suggests that a new power generation plant may be required by approximately 2020. This may include the acquisition of a 5- to 10-acre site northeast of campus.

Infrastructure Corridors
When infrastructure is expanded, it is extremely important that lines and tunnels be implemented outside of potential development zones. Open space corridors and roadways are ideal locations for utilities even if they result in slightly longer utility runs. The major area of concern identified in the plan was created because the line was built along the shortest path through a parking lot rather than the existing roadway.

FUTURE UTILITY MODIFICATIONS/ AREAS OF CONCERN

1. Proposed research facility is over a 12" water main. This is a medium impact.
2. Proposed research facility is over an electrical ductbank and a steam supply. The ductbank is a medium impact. The steam supply is a major impact.
3. Proposed research facility is over a 36" storm sewer. This is a medium impact.
ARCHITECTURAL DESIGN GUIDELINES

The architecture of the East Gateway District will help define a new area of campus. The University hasn’t undertaken the planning, design, and construction of a district of this size and scale since the West Bank area was developed in the 1960s. The District buildings must work together as parts of the District and a part of campus, while still respecting the design intent and programmatic requirements of individual buildings.

CAMPUS DISTRICT
The Twin Cities campus is loosely organized into districts, each easily identified by name or landmark: Northrop Memorial Auditorium or Mariucci Arena, for example, identify not only the name of a place but also identify the campus areas they occupy. These identities define the district and provide a means of orientation. Each district is held together by elements common or unique to that district. These elements include commonalities related to location, use, formal order, or arrangement within a district, to more architectural commonalities such as age, massing, materials, geometry, fenestration, and level of ornamentation.

With a long history as the “back” of campus, the East Gateway District has a number of challenges to overcome to integrate fully into the University’s built fabric. These challenges represent a collective opportunity for architects and designers to fully connect the new district into a large and diverse campus.

PHILOSOPHY
The overarching philosophy of the architectural guidelines as a response to the challenges facing the District is threefold: first to unify the District as a place of biosciences research; second, to integrate the new District into the existing campus; and third, to identify the District as a research center at the University of Minnesota. The architectural guidelines work to be a descriptive impetus for design rather than prescribing definite rules or standards.

EAST GATEWAY DISTRICT CHALLENGES
1. District at the Back/District at the Edge
The addition of the TCF Bank Stadium and recent research buildings has begun to shift the perception of “back door” for this part of campus. The District’s location at the edge of campus, adjacent to athletic venues and close to active retail uses south of University Avenue, creates the opportunity for integrating the District more fully into the campus and urban fabric. The condition of “edge” therefore can become an opportunity for “gateway,” a type of new threshold into campus.

2. Inconsistent Context
The stadium and arenas have set one built example for the District. They are of one type and character—traditional, monumental, and brick. Recent research buildings of the District provide a second architectural context, with more glazing and articulation of massing and scale. Rail lines and historic silos are the sole remnants of the industrial history of the area, providing
A third context in the District. A design opportunity lies in incorporating each of these influences as parts of a broad whole, and an impetus for the design of contemporary science and research buildings.

3. **Stadium Dominates the District**

The new TCF Bank Stadium is large by almost any architectural standard. Its proximity to other athletic venues adds to the feeling that this area can only house buildings of a similar scale. New buildings should address the scale and materiality of the athletic venues, but must also mediate between their sheer size and the more human-scaled, contemporary environment of future research buildings.
ARCHITECTURAL CONTEXT
Architecturally, the University’s campus is extraordinarily diverse. The variety of architectural styles embodies the past 150 years of American architectural history. Richardsonian Romanesque, PWA Moderne, International Style, New Brutalism, examples of the various historic revivals from the turn of the twentieth century, and the contemporary eclectic styles of the last twenty years are all represented on campus.

Lively neighborhoods have developed at the edges of campus, home to small-scale restaurants; retail establishments; and staff, faculty, and student housing. They are equally diverse in building size, age, and use. These neighborhoods are important to the vitality and definition of the campus.

The recent University master plan recognizes the eclectic nature of the campus and architectural styles over its evolution. However, the principles of the campus-wide master plan also strive for cohesiveness in the campus environment, through appropriate scale, common materiality, buildings that shape positive outdoor space, the treatment of primary entrances, etc. This does not imply that new construction should copy historic styles, but rather look to successful examples on campus that embody these principles and create memorable places.

DESIGN PRINCIPLES
1. Commons facilities within buildings form centers for multi-building development and interaction.
2. Commons facilities will be architecturally iconic to address their unique role in the District.
3. Lab buildings will have circulation corridors fronting Oak Street, 6th Street, and 23rd Avenue.
4. Offices, support spaces, and circulation elements will be separately articulated.
5. Major street walls will be predominantly masonry.
6. Bridges and walkways will be uniquely designed to complement adjacent buildings.
7. Building bases should feel open and use glazing as a dominant material and provide weather cover near doorways.
8. Ground level façades on Oak Street, 6th Street, and 23rd Avenue will have as much transparency and activity visible to the street as possible to animate the pedestrian environment.
9. An integrated landscape of terraces, water, and planting will accent building entrances.
10. Courtyards will be landscaped and accessible.
ARCHITECTURAL CHARACTER

Architectural Character

1. Use predominately brick, with limited areas of stone, metal, or other accent materials for building exteriors.
2. Provide a variety of heights, textures, and scales.
3. Construct buildings of not less than 3 stories nor more than 7 stories.
4. Use large glass walls to enhance entrances, important internal circulation events, and courtyards.
5. Connect buildings with interesting bridges and walkways.
6. Design and arrange internal and external space to support connectivity and collaboration.
7. Design commons facilities within buildings to be iconic through massing, materials, and lighting.
8. Accent building entrances with integrated landscape of terraces, water, and planting.
9. Achieve at least USGBC LEED® Gold certification for all buildings and landscapes.
Research Pragmatics

1. Use predominately modular open labs capable of adapting to future wet or dry programs.
2. Provide at least 15-foot floor height with a minimum 22-foot structural span throughout.
3. Locate adequate support spaces between labs and corridors.
4. Aggregate principal investigator offices around areas for casual interaction and collaboration.
5. Provide natural light to labs and offices.
Interaction

1. Develop a program model to achieve 55% efficiency to support casual collaborative spaces.
2. Provide artwork and display areas that describe scientific inquiry in formal public areas.
3. Locate small lounges, atria, staircases, seminar spaces, and conference rooms to foster interaction.
4. Provide a variety of soft seating, tables and chairs, and adjoining flexible storage space.
5. Locate interaction areas along the path of travel between labs, offices, and circulation corridors.
6. Zone multiple areas from formal to completely unscripted throughout.
7. Provide technology, white boards, coffee kitchens, a variety of soft seating, and tables and chairs.
8. Allow for display of various media illustrating current areas of inquiry.
Sustainability
1. Require all new buildings to attain USGBC LEED® Gold certification.
2. Continue to implement the East Gateway Stormwater Management strategy, including green roofs, bio-swales, and infiltration planters.
3. Develop traffic/transit plans to leverage the intermodal station and existing campus transit systems.
4. Similar to the existing Scholars Walk, create a Science Walk display that tells the story of the University’s commitment to the interrelated challenges of the biosciences and environmental sustainability.
section 5 architectural guidelines
The East Gateway District Master Plan is an extension of the Twin Cities Campus Master Plan, approved by the Board of Regents in March 2009.

The District Master Plan will be used to guide future development decisions and influence operations decisions in the District. Planning and design efforts will refer to the District Master Plan when projects are being defined, sites are selected, and in both pre-design and schematic design stages of development.

Project Development and Approvals
Specific objectives and strategies for capital projects affecting land use, buildings, open spaces, landscape, and infrastructure will be determined in consultation with the District Master Plan.

The ultimate responsibility for day-to-day administration of the District Master Plan is held by the Vice President of University Services. Projects will be reviewed at the pre-design and schematic design level of detail by Planning and Architecture staff, who will provide analysis and recommendations to the Biomedical Discovery District Executive Committee.

Phasing and Planning Horizon
Near-term activities, projected within 0-5 years, are expected to include:
1. Coordinated site planning, programming, and construction of biomedical research facilities in the area noted as Phase 1 on the following diagram by summer 2009.
2. Expanded additional energy capacity (steam and chilled water for heating and cooling) to support these buildings as buildout occurs. Distribution networks are planned for orderly expansion in this District coincident with the first phase of building construction.
3. Construction of a realigned segment of 23rd Avenue, north of 6th Street in the first phase of building development.
4. Commencement of stadium events in September 2009, consisting primarily of University of Minnesota football games and other athletic events.
5. Commencement of the Central Corridor LRT service by approximately 2014, operated and owned by Metropolitan Council.

Long-term activities, more than 5 years into the future, are expected to include:
1. Redevelopment of key sites for University-related use, including the Thompson Center for Environmental Management (501 23rd Avenue SE) and the 2221 University Office Plaza building (2221 University Avenue SE)
2. Development of two other parking/multi-modal facilities within the District, and sized to meet reductions in parking demand and increasing use of regional and on-campus transit.

Updates on project activities within the District may be found at the Capital Planning and Project Management website at http://www.cppm.umn.edu