ANALYSIS

Goals for the Analysis

At the completion of the Framework Plan and in anticipation of the Great Streets project, it was determined that there was a need to enrich the dialog around particular great streets principles. A focus on particular components of a green community had not been part of the original dialog. Investigation into the heat island effects from parking lots, garages and roofs as well as the conditions of storm water drainage and the urban forest inventory were needed. The Framework Plan addressed event/venue transportation but did not include a traffic engineering consultant to evaluate proposed street designs against average daily traffic loads, daytime and nighttime peaks as well as events congestion. The Framework Plan addressed many elements of place-making, development patterns, street narrowing/sidewalk widening and special treatment zones. The goal for the Great Streets project was to leverage the multi-disciplinary team to fill in the analysis gaps with quantitative and qualitative investigation focused on great streets principles. The project also addressed the look and feel of the street environment, the pedestrian experience and functional completeness of the streets. With the Framework Plan as a point of reference, its proposals were tested and its merits weighed against the Great Streets principles.

The Great Streets Checklist

The “Great Streets Checklist” was prepared as a tool to articulate the specific planning objectives that governed the project planning and design direction. The Great Streets Checklist documented the baseline or existing conditions of the community with respect to the principles at the start of the project and was used throughout the planning process to evaluate concepts and designs. The checklist was introduced to the subcommittees during the 2-day charrette. Participants were asked to rate the importance of aspects of the Great Streets principles and then fill out the checklist based on how Grand Center embodies the Great Street principles today.

Documenting the Great Streets characteristics

The most important and least important characteristics according to stakeholders are listed below with the Great Street principle in parenthesis:

The most important Great Streets characteristics:
- The street has memorable places (Great Streets facilitate place making)
- The street has public spaces such as parks and plazas (Great Streets facilitate place making)
- The pedestrian environment is safe (Great Streets allow people to walk comfortably and safely)
- The street has sidewalks that are wide enough to provide for an active street life (Great Streets facilitate place making)
- The street provides for safe and convenient bicycle travel (Great Streets contribute to economic vitality)

The least important Great Streets characteristics:
- The street provides safe and convenient freight movement (Great Streets are functionally complete)
- The street provides for safe and convenient bicycle travel (Great Streets are functionally complete)
- The street looks like it incorporates green development techniques such as rain gardens (Great Streets are green)
- The street provides for those who want to travel through the district and beyond (Great Streets provide mobility)
- The street helps promote commerce (Great Streets contribute to economic vitality)
Analysis Discovery Methods

The analysis phase focused on both qualitative and quantitative analysis and spatial observation. The existing conditions of the street were documented by the design and engineering consultants during multiple site visits. Due to the aging condition of the existing street infrastructure, very little civil survey data exists for Grand Center. Any previous construction projects and utility drawings were collected from the City of St. Louis and various utility agencies to help form the project base map. Many individuals on the Design Team represented a significant experience resource having worked on previous Grand Center projects. But others on the design team surveyed the community with fresh eyes and a designer’s critique to capture impressions of the community and qualitative and spatial character.

Site Analysis: Spatial and Qualitative

The Framework Plan touched on the physical barriers and perceptions that limit Grand Center’s ability to function as a true community. A focus of the analysis for the Great Streets project was spatial and qualitative in effort to understand these limitations. A series of illustrations apply emphasis to these challenges on the following pages.
Today, Grand Center is nicely positioned at the center of key institutional anchors, much like a shopping mall’s anchor department stores are destinations for users and centers of employment. Institutional anchors such as Saint Louis University, the Veterans Administration Medical Center, Cardinal Ritter and Clyde Miller High Schools, Renaissance Place Apartments and the Locust Street Business Districts all draw people to Grand Center. Other community anchors such as the performing and visual arts destinations are currently the most effective in drawing people to the area but are not known to be one arts district. This diagram illustrates how Grand Center anchors are perceived by users to operate as “islands” as not as a connected community. Grand Center can break down barriers to connectivity and leverage its institutional and arts anchors more effectively to encourage its users to linger in the community and support strong retail, commercial and residential offerings.

Stakeholder input and design team observation came together to document key physical and perceived barriers that reinforce the “island” effect.
Prominent Views

Grand Boulevard is aligned along the ridge line that the early settlers of St. Louis found in the 1700s. As the side streets fall away in east and west directions, views beyond the community are framed by buildings and even terminated by buildings. It is evident today that designers considered the view when designing their structures to take advantage of topography and kinks in road alignment. The impressive and massive Third Baptist Church literally terminates one’s view when traveling east-bound on Washington Street, west of Grand Boulevard. The view traveling west-bound on Washington used to terminate at the Fox marquee. A realignment of Washington Street, maturity of trees in Strauss Park and outdoor dining clutter have all but blocked this important view shed. There is an amazing axial view from “steeple to steeple” is from St. Francis Xavier College Church at Saint Louis University’s campus on the south to St. Alphonsus Liguori “ROCK” Catholic Church at Cook Street on the north is created by a slight kink in Grand Boulevard, north of Delmar Boulevard. On the other hand, large expanses of surface parking allow broad and open views that highlight the “urban void” and contribute to a sense of inactivity in Grand Center.

Spatial Analysis

Vertical elements such as trees and buildings form the walls of a street and define an urban street as opposed to a suburban street. The activities contained within the buildings are the destinations and draw for the inhabitants of the street. A graphic representation of each of the north-south corridors in Grand Center, Spring, Grand and Theresa, reveals the loss of the street wall along the majority of each of the corridors. It is particularly notable to point out the missing corner buildings at key intersections such as Olive/Grand, Olive/Theresa, Olive/Spring, Grandel/Spring and Delmar/Grand. That being said, the street wall, tall historic buildings and marques of Grand Boulevard between Olive and Delmar have been preserved over time and maintain a distractive character that can be considered an “Urban Canyon.”
Street Character

Within the study area, the Design Team found ways to characterize the existing physical conditions of the streets in order to communicate its challenges and opportunities. The street corridors were grouped into four character categories:

**Urban Canyon** – characterized by the preservation of the street wall, tall historic buildings and marques of Grand Boulevard between Olive and Delmar and Washington, east of Grand.

**Parkway** – characterized by large rights-of-way, green “front yards” and wide building setbacks along Spring Avenue and Grand Boulevard north of Delmar.

**Urban Void** – characterized by streets adjoining surface parking lots, a general lack of street wall and isolated buildings found on Delmar, Grandel and Washington Streets.

**Commercial Street** – characterized by existing employment centers, parking resources and buildings forming the street wall found on Olive Street.

Building Façade Analysis

**Landmark Facades**

A significant portion of Grand Center building are listed on the National Register of Historic Places and contained within a National Historic Neighborhood. Of the significant buildings in Grand Center, many feature historically significant facades (e.g. Continental Building), marques (e.g. the Fabulous Fox) or landmark facades designed by prominent architects (e.g. Pulitzer and CAM). Grand Center can build on this wealth of architecturally significant and visually interesting structures. Future infill buildings should frame and highlight these facades and/or be designed to be architecturally significant in their own right.

**Active and Inactive Street Level Presence**

A landmark façade does not draw pedestrian activity at the street and sidewalk level on its own. The activities and the people behind the façade draw others to a business district. Despite its visual interest and historical significance, the Fox façade, has an inactive presence on Grand Center except during performances. This represents a significant gap in activity or the presence of people along Grand, contributing to a poor pedestrian experience. The Fox can introduce an active sidewalk level such as a café to create a human touch point along its façade. Outdoor dining will also bring activities out onto the sidewalk. Grand Center currently has outdoor dining on the south side of Strauss Park. Grand Center side streets represent the most logical locations for outdoor dining in conjunction with new mixed use developments and sidewalk level restaurant sites.
Site Analysis: Environmental

The Great Streets project for Grand Center also focused on environmental and quantitative analysis to gain an understanding about the baseline conditions of the community with respect to physical conditions, transportation and lighting.

Green Space, Trees and the Urban Heat Island Effect
Heat gain in urban areas due to a high percentage of pavement and roof surfaces exposed to the sun can be as much as 20 degrees hotter than rural areas. This urban condition causes all sorts of economic, safety and personal comfort issues. Increased energy usage for cooling, increased pollution, dangerous conditions for residents of non-air conditioned buildings, personal discomfort for urban inhabitants and challenges maintaining urban green spaces and trees. New and renovated roof surfaces can use light or reflective roof (high albedo) material to reduce this problem. The use of concrete pavement can positively impact this problem. But the most effective strategy for reducing the effect of the urban heat island on the sidewalks and places that pedestrians use is trees. When maturing, trees create a natural umbrella that blocks the sun from reaching and heating the pavement. People will seek out even the smallest patch of shade when sitting outside. Unfortunately, in the Grand Center study area only 8% of the public right of way is covered by green space and tree canopy while the other 92% is covered by pavement. Additionally, there are 15 acres of surface parking lots and 21 acres of roof tops adding to the heat island effect in the study area.

Strong Foundations for Trees
It is recognized by the Great Streets principles and the City of St. Louis Sustainability Plan that trees are desired in the public realm. Trees in the streetscape contribute greatly to the health and livability of our cities. Urban streetscapes notoriously provide inadequate conditions for vigorous tree growth. The secret lies beneath. A tree’s foundation is its root system. It needs soils that are not compacted so that they allow free drainage and air and nutrient exchange. Trees also need adequate soil volume. On average, a street tree is provided approximately 144 cubic feet of soil in a typical streetscape.

Research by James Urban and Cornell’s Urban Horticulture Institute indicate that ideally 1,200 cubic feet is a reasonable minimum volume of soil to support a functional large-canopy street tree. While this number is not always realistic to provide, it is important to recognize the benefits of larger volumes of good soil and find means to provide trees with a healthy soil infrastructure. Just as buildings need strong foundations, trees are the structure in the landscape, and they too need strong foundations.
Urban Forest

Today, the urban forest inventory of Grand Center represents a wide range of conditions, health and success with many trees in decline or stunted by growing conditions. Many street trees have been removed presumably when damaged or dead. Empty tree planting areas are prevalent throughout the district and have become tripping hazards. The locations of the trees within the study area, their conditions and relative size have been illustrated. A significant portion of streetscape frontage is devoid of any trees.
Infrastructure Analysis

Storm water Challenges

A Combined Sewer System

The existing system serving Grand Center and much of the City of St. Louis consists of combined storm and sanitary sewers. This condition is not ideal as it directs sanitary waste to our streams and rivers when the system overflows. It also contributes to sewer backups in homes. The City of St. Louis is working toward a future where there are separate storm and sanitary sewers. This is considered “Green Infrastructure.” This will take many decades but each new project and sewer upgrade brings the goal closer.

The combined sewer system serves to drain both the public right-of-way and the private properties. Private properties have direct connections of both the sanitary piping and the roof drainage to the combined system. Grand Boulevard is the high point of two Mill Creek sub watersheds within the Bissell Service area of the local authority, Metropolitan Sewer District (MSD). The Grand Boulevard ridge has a high point south of Bell Avenue and storm water drains north and south from there. The drainage pattern fall away from Grand along the cross streets and alleys within the district.

Overflow and Flooding

Stormwater enters the system at inlets located in the streets, alleys and direct connections of the roofs within the district. For the most part, the system is adequate to serve the district but a couple of problem areas were identified during the project. These include the street drainage east of Grand on Washington Avenue and east of Grand on Olive. The street flooding is caused by gutter spread (width of the flow in the street) and is directly related to the distance between inlets. Additional inlets along both streets will address the problem. However, MSD has goals for the inclusion of green infrastructure to reduce the load on storm sewers in the Bissell Service Area and Great Street incorporate sustainable stormwater strategies. These are called Best Management Practices (BMPs) by civil engineers. Stormwater design options were explored in this project to enhance the function of the stormwater conveyance system; provide a sustainable storm water management system; reduce the impervious area; increase infiltration and minimize runoff.

Stormwater Goals

Selecting the Appropriate Green Infrastructure Locations

There are several factors that may influence the location chosen for the green infrastructure techniques, including contiguous available properties, the soil’s ability to absorb water, proximity to areas of the combined sewer system that backup and capacity to convert impervious pavements that shed water to previous materials that absorb water.

Choosing the Right Green Infrastructure BMP to Maximize Value

After identifying the potential sites, the next challenge is to identify the green infrastructure techniques that will have the greatest return on investment in terms of cleaning water and reducing its volume. Maximizing value of the options also comes from site-specific design that takes into account important local factors such as soil, runoff content, climate and sunlight, as opposed to applying a standard detail that may or may not be appropriate. There are many examples of BMPs that were “designed” but fail to function properly due to a lack of understanding of the mechanics or the misapplication of a standard design. Native vegetation should be carefully selected to create diversity, withstand street toxins and require minimal watering and maintenance. Long term maintenance cost of the BMP has to be considered.

Finally, the spatial relationship between multiple BMPs must be considered so that they complement one another in order to maximize their combined value.

Finding Property Owners Willing to Participate and Maintain

Multiple public and private properties will be necessary to build a network of contiguous BMPs. Existing property owners may be hesitant to take on the burden of maintaining private green infrastructure. Potential buyers may be concerned about investing in a property that has a “BMP Reserve Area”. These current and future property owners may need to be convinced that green infrastructure has been successful in other cities, and that there will be personal benefits (such as increased property value) if they are to agree to participate. Developers will need to understand that low impact development methods and green infrastructure can help attract commercial tenants. Signage can help educate the public and residents about native plantings. Choosing the correct plants, especially a diverse palette of native species, will help keep the need for watering and maintenance to a minimum and contribute to the greening of Grand Center and St. Louis.

Addressing Poor Draining Soils

Many of the standard BMPs rely on well-draining soils, a rare commodity in St. Louis. Soil replacement is an option, as is choosing BMP’s that rely on storage and release. Either way, an accurate soil analysis will be required in order make proper decisions regarding the BMPs.

<table>
<thead>
<tr>
<th>Challenges</th>
<th>POTENTIAL SOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selecting appropriate Green Infrastructure sites</td>
<td>Understand the area/system</td>
</tr>
<tr>
<td>Choosing the right stormwater best management practice (BMP) to maximize value</td>
<td>Utilize legitimate experts</td>
</tr>
<tr>
<td>Site specific design</td>
<td>Spatial relationship to system</td>
</tr>
<tr>
<td>Finding property owners willing to participate and maintain these features</td>
<td>Public relations campaign</td>
</tr>
<tr>
<td>Demonstration projects</td>
<td>Public education</td>
</tr>
<tr>
<td>Community gardens</td>
<td>Minimize maintenance</td>
</tr>
<tr>
<td>Impact on utilities/long-term maintenance can be difficult and costly</td>
<td>Avoid or relocate utilities</td>
</tr>
<tr>
<td>Demonstrating positive impact on Combined Sewer Overflow (CSO) System</td>
<td>Knowledge of combined system</td>
</tr>
<tr>
<td>Develop reduction assessment tools</td>
<td>Addressing poor draining soils</td>
</tr>
<tr>
<td>Soil coverage in GIS</td>
<td>Soil remediation</td>
</tr>
</tbody>
</table>
Stormwater Catchment Areas

The high points, flow lines and catchment areas of the stormwater system are illustrated in the graphic. There are opportunities to capture concentrations of stormwater at the perimeter of the study area in order to store, clean and slow down the rate of stormwater runoff. Captured and stored water can be reused for irrigation, fountains and other features.

Street Conditions

The conditions of the existing streets as well as the utility locations were a consideration in the planning and design approach. The majority of the streets in the study area are in good to fair condition. The design recommendations recognized that adjustment to curb lines to widen sidewalks could keep the street intact. It was also determined that a prevalence of granite curb in the area was a clue to a palette of appropriate and contextual materials for Grand Center.

The existing streets within the Grand Center are generally asphalt, asphalt over rigid concrete base or concrete. The following table summarizes the street type and condition.

<table>
<thead>
<tr>
<th>NAME</th>
<th>Condition</th>
<th>Street Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>DELMAR BLVD</td>
<td>Good</td>
<td>Asphalt over Rigid Base</td>
</tr>
<tr>
<td>GRAND BLVD</td>
<td>Good</td>
<td>Asphalt over Rigid Base</td>
</tr>
<tr>
<td>GRANDEL SQ</td>
<td>Fair</td>
<td>Asphalt</td>
</tr>
<tr>
<td>OLIVE ST</td>
<td>Fair to Good</td>
<td>Asphalt</td>
</tr>
<tr>
<td>SAMUEL SHEPARD DR</td>
<td>Fair</td>
<td>Asphalt</td>
</tr>
<tr>
<td>SPRING AVE</td>
<td>Good</td>
<td>Concrete</td>
</tr>
<tr>
<td>SPRING AVE</td>
<td>Fair to Good</td>
<td>Asphalt over Rigid Base</td>
</tr>
<tr>
<td>THERESA AVE</td>
<td>Poor</td>
<td>Asphalt</td>
</tr>
<tr>
<td>WASHINGTON AVE</td>
<td>Good</td>
<td>Asphalt</td>
</tr>
</tbody>
</table>

Street Conditions

The street and sidewalk condition within the district are graphically illustrated. Granite curb is the dominate curb type in the study area.
Transportation Analysis

Transportation Challenges

Grand Center is centered on the northern leg of a significant north/south arterial in the City of St. Louis. Grand Boulevard effectively connects four interstates (I-70, I-64, I-44, and I-55), several significant employers, institutions, and established neighborhoods by means of a heavily traveled roadway and the busiest bus line in the region. Due to this connectivity, motorists rely on Grand Boulevard as the primary access route to Grand Center, even though there are additional major north-south arterials to the east and west and east-west arterials that traverse the area.

The community has distinctly different traffic characteristics than a typical business district for daytime and evening/event traffic operations. While daytime peak hour (commuter) traffic conditions are typically the basis for analysis and design of public streets, in Grand Center the evening (venue) peaks are concentrated on Grand and exceed its capacity.

The configuration of streets and sidewalks in Grand Center currently inhibit effective vehicular traffic, safe pedestrian movement and detracts from a “sense of place”. As an arts and entertainment district, Grand Center understands that the needs of the pedestrian must come first – realizing that every trip to Grand Center begins and ends on foot.

Transportation Goals - Getting to, From, and Through Grand Center

In order to test the transportation strategy of the Framework Plan, the traffic volumes of existing streets were compared with the current capacity and potential of these streets. Particular attention was paid to Vandeventer and Compton; the targeted north-south alternative routes to Grand. The Great Streets project needed to test two assumptions:

1) The capacity of Grand can handle evening peak traffic with one travel lane in each direction AND
2) Alternative parallel routes have the capacity to reduce traffic volumes on Grand for through-trips
Existing Traffic Volumes

According to the traffic volume data that was collected and synthesized, Grand Boulevard had the highest concentration of traffic in the community's network of streets. Vandeventer and Compton Avenues, which parallel Grand Boulevard, had lower concentrations of traffic. This can partially be attributed to the fact that they intersect fewer interstates. Although both intersect I-64, their connections were much less prominent and possibly unclear to the unfamiliar driver. Vandeventer intersects I-44 with an interchange, while Compton merely crosses over it. Neither Vandeventer nor Compton intersect I-70 or I-55.
Existing Capacity

The data showed that Grand Boulevard, Lindell Boulevard and Vandeventer Avenue were the most-heavily traveled roads in the community, with volumes over 20,000 vehicles per day (vpd) on Grand and over 15,000 vpd on both Lindell and Vandeventer. However, these streets also had the most number of lanes and signalized intersections designed to accommodate larger volumes of traffic, making the concentration of traffic less apparent on Vandeventer and Lindell. It is important to note that Grand operated as a 3-lane street (one travel lane in each direction and a center turn lane) during the daytime and as a 5-lane street (two travel lanes in each direction and a center turn lane) during evening venue times when on-street parking is prohibited.

Conversely, many of the east-west oriented arterials in the district averaged less than 5,000 vehicles per day, but are also typically two-lane streets controlled by stop signs. Although the daytime and evening peaks can be significant, the commuter periods were spread out over an hour or more and where well within the capacity of the street network with the exception of Grand Boulevard between Delmar and Lindell.

However, during evening venue arrival and departure times, the data showed that there were substantial volumes of traffic arriving and departing during relatively short windows of time. In addition, congestion was exacerbated by large number of vehicles destined to or departing from a limited number of locations (e.g. parking facilities). The rush of vehicles was compounded by the need to accommodate high volumes of pedestrians moving through the street network as well. Although stakeholders and patrons expressed a primary concern over congested streets during venue times, it was interesting to conclude that the evening peak/commuter period generally had higher traffic volumes. There were exceptions on Washington Avenue, Olive Street, and a small portion of Grand Boulevard, between Olive and Lindell.

Understanding that Grand already functions as a 3-lane street and the optimization of the existing street network was possible, provided the Design Team an opportunity to consider the removal of the on-street parking to widen sidewalks.
Alternative Routes

There were other factors that had a substantial impact on the actual and perceived traffic operations within the Grand Center network besides traffic volumes and network capacity. These considerations ranged from connectivity and access, to traffic signals, to pavement quality. During the Open House, participants indicated that they were already using or would use Vandeventer and Compton as alternative routes to and from Grand Center. Others commented that the conditions of the streets discouraged them from using these alternative routes to Grand Center. A brief summary of the analysis of the existing alternative routes are outlined below and characterized by the following:

1) Barrier – existing physical features of the roadway are a barrier to its use as an alternative route
2) Condition – existing roadway conditions discourage its use as an alternative route
3) Opportunity - existing roadway corridor offers opportunities to establish it as an alternative route

Interstate Access
- Existing direct access to Grand, Vandeventer and Compton with direct access from major St. Louis highways (opportunity)
- Highway signs and existing local signage directs to Grand Center from Grand Boulevard only (barrier)

Vandeventer
- Intersections are poorly lit (condition)
- Pavement conditions are poor from the highway and rough throughout the project area (condition)
- On-street parking is allowed but could become an additional travel lane (opportunity)
- Traffic signals give preference to Vandeventer traffic not Grand Center cross streets such as Olive and Washington (barrier)
- Vandeventer does not have dedicated turn lanes near the study area (barrier)

Compton
- Four traffic lanes and on-street parking on both sides between MLK Drive and Delmar (opportunity)
- Good lighting (opportunity)
- Worn roadway striping (condition)
- On-street parking is allowed on the east side between Locust and Olive but could become an additional travel lane (opportunity)
- Four lanes with on-street parking and a center turn lane south of Olive (opportunity)
- Intersection of Compton and Market is very busy and has long signal times (barrier)

Cross Streets
- Olive is poorly lit and unattractive west of Spring (condition)
- Locust has two travel lanes and parking on both sides (opportunity)
- Washington travel lanes are oversized east and west of Grand (opportunity)
- Washington has dedicated left-turn lanes at Spring (opportunity)

Grand
- Left turn lanes prohibited at Grand and MLK Drive (barrier)
- Dedicated turn lanes for northbound and southbound left turns only at Grand and Page (barrier)
- Four traffic lanes north of Bell (opportunity)
- No dedicated turn lane for eastbound Delmar at Grand (barrier)
- Left turns prohibited from Washington to Grand (barrier)

Other Street Interfaces
- Page has no dedicated left turn lanes (barrier)
- Y intersection at Page, MLK Drive and Leonard/Sheridan is confusing with long signal times (barrier)

The Master Plan and implementation recommendations will reinforce the importance of public realm improvements to remove impediments to traffic and pedestrian flows and the establishment of alternative routes to, from, and through Grand Center. Recommendations will show that the alternative routes can be reinforced through physical design improvement, wayfinding and signage and public information.
Alternative Modes of Transportation

Grand Center’s location within the heart of Midtown is well positioned with an existing network of transit and bicycle opportunities. Additional initiatives were considered during the preparation of the report including the potential for streetcars on Lindell, additional Bike St. Louis routes and a study for an off-street bike and pedestrian facility along Spring Avenue.

Key to any great street is its ability to be traversed by foot. Efficiency is realized in any sidewalk network, but the proximity of so many attractions in one place is something unique to Grand Center. Most landmark buildings and destinations are within a five minute walk. The focus in Grand Center is to reduce street widths and widen sidewalks. Dedicated bike lanes that effectively widen the street are in conflict with this focus. Instead sharrows and other bike connections were considered in the planning and design process. Public transportation is not far from Grand Center. Buses transect the community on Grand and Delmar. The MetroLink can be reached within a fifteen minute walk. Grand Center’s patrons extend well beyond its residents and most drive in from other parts of the City and the suburbs. Physical and operational improvements need to help patrons understand that it is safe and convenient to park their cars sooner and walk in the community to their destinations.

Alternative Modes of Transportation in Grand Center
Existing Parking Conditions

An inventory of the existing supply indicated that there are approximately 2,900 parking lot spaces and 700 on-street spaces provided within the core of Grand Center, although many of the lot spaces are dedicated for private uses. There are over 3,100 additional parking spaces adjacent to the core of the district.

Despite perceptions of nighttime parking deficiencies, the study showed that there is generally sufficient parking within Grand Center to accommodate existing venue demands. This included most occurrences of simultaneous events; though shortages of preferred parking may exist in selected locations. In addition, parking access and departure was observed to be arduous due to the majority of patrons arriving via the same path and the fact that many parking facilities have a single (or limited) entrance and exit point. Enhancing alternative routes to and from Grand Center and minimizing entrance and exit processing times are considered strategies to reduce user frustration in regards to parking.

The Master Plan and Implementation recommendations will reinforce the importance of public realm improvements to remove impediments to traffic and pedestrian flows and the establishment of alternative routes to, from, and through Grand Center. Recommendations will show that the alternative routes can then be reinforced through physical design improvement, wayfinding and signage and public information.

Existing Parking Inventory in Grand Center
Every city has a great arts district,
Grand Center is ours.
Current State: The Brand

Grand Center: At the Intersection of Art and Life
The current Grand Center brand was born to define St. Louis’ unique arts and entertainment district, capturing its place as a destination for both visitors and residents.

The district’s tagline, ‘At the Intersection of Art and Life’ was created to capture the new-found energy around the growing arts and cultural institutions populating the area — all of which intersect the district’s historic architecture, future retail, creative and residential spaces.

Organization
Grand Center is an overarching identity that encompasses the many cultural organizations and destinations found within the area. Such organizations include performance venues, museums, galleries, restaurants, residential and educational spaces.

The Brand, At-a-Glance
Examples of current branded materials (print, web and environmental) include the primary identity, website, street signage, stationery system and pole banner artwork.

SPECIAL THANKS TO OUR SPONSORS AND MEDIA PARTNERS: stlouisMagazine

GRAND CENTER, INC.
634 N. GRAND BLVD.
SUITE 10
AST. LOUIS, MO 63103
314.533.1884 TEL
314.533.3345 FAX
WWW.GRANDCENTER.ORG

THE INTERSECTION OF ART AND LIFE ™
GRAND CENTER, INC. BOARD OF DIRECTORS
W. Randolph Adams
J. Joe Adorjan, CHAIRMAN
Jo Ann Arnold
Clarence C. Barksdale
Lawrence Biondi, S.J.
Cynthia J. Brinkley
Laurance L. Browning, Jr.
Jerry L. Bryan
James H. Busby
Joseph T. Carone
B. John Farnsworth
Kenneth R. Flynn
Thomas E. Hennen
Lawrence W. Hodge
Thomas Reeves
Walter B. Sanderson II
Susan Sherman
Charles A. Stewart, Jr.
Donald M. Suggs
Donna Wilkinson
R. Dean Wolfe

EMERITUS
Richard Gaddes

PRESIDENT
Vincent C. Schoemehl, Jr.

THE INTERSECTION OF ART AND LIFE ™
Current State: Signage & Wayfinding

Approaching the District
The Grand Center district is accessible from multiple highways (interstates 40, 44 and 70) and nearby neighborhoods. The ability to successfully navigate to the district is equally as important as finding your way around once you arrive.

The following images capture existing out-of-district signage, located along interstates, exit ramps and adjacent neighborhoods.
Current State: Signage & Wayfinding

Navigating within Grand Center: Branded Signage

Installed in 2010 – 2011, the existing signage system was developed to reinforce the existing Grand Center brand, helping to differentiate this unique district in look and feel, and to aid in defining its parameters.

The current (branded) signage system contains 4 primary sign types: mast-arm 1, 2 and pole-mounted street signs 3, parking 4 and general directional signage 5. Additional elements in the area include branded planters 6 and a variety of pole banner designs 7, 8, 9.
Current State: Signage & Wayfinding

Navigating within Grand Center: Non-branded Signage
Current signage inventory also includes non-branded elements that aid visitors in navigating the district and finding their way to neighboring districts.

Examples of non-branded signage include a CVC district map located in Strauss Park 1, CVC directional signage located throughout the district 2, retro parking signage 3 and SLU branded signage 4.

Exiting Grand Center
There are currently no signs indicating preferred routes for exiting the district.
Current State: Signage & Wayfinding Overview

Inventory of Existing Signage
Inventory of existing signage reveals gaps in the current system, making elements appear sporadic and unplanned. Most notable is the lack of branded street signage in the northeast area of the district, as well as inconsistent use of branded components, such as pole banners.

To be successful, signage and wayfinding components must be implemented consistently so that visitors can learn to rely on them as both place-making and navigational tools.
How does branding, signage & wayfinding contribute to a positive visitor experience?

1. **The Brand**
   A successful visitor experience begins with a recognizable & memorable brand, differentiated from surrounding neighborhoods.

2. **Approach**
   Visitors are able to easily navigate to the district from multiple directions/routes.

3. **Arriving & Wayfinding**
   Visitors experience a ‘sense of arrival’ and are able to quickly locate their final destination (venue, parking, etc.)

4. **Experience**
   Visitors encounter information at key points to inform wayfinding decisions, and are able discover ‘what’s ahead’ both spatially & temporally.
   Navigation is clear, leaving visitors open to experience their surroundings.
   Visitors understand the ‘sense of place’ through visual (branded) cues in the physical environment.
   Visitors learn more about the area and are encouraged to return.

5. **Exit**
   Visitors are able to effortlessly navigate out of the area.
Current State: Impressions & Recommendations

The Brand

**IMPRESSIONS**
- The current brand is recognizable to people living and working in the area, however infrequent visitors are not aware of Grand Center as a destination.
- Venues do not consistently express affiliation with the Grand Center district in promotional materials.

**RECOMMENDATIONS**
- Suggest updated message structure to strengthen brand awareness.
- When referring to the area: (1) Grand Center (2) At the Intersection of Art and Life
- When referring to a venue/place/business (1) Venue, Place or Business Name (2) at Grand Center, (3) The Intersection of Art and Life
- Always include Grand Center brand on communication materials to strengthen name recognition and district affiliation

Approach

**IMPRESSIONS**
- The majority of directional signage outside of the district is CVC, ‘Explore St. Louis’ branded.
- All existing signs direct visitors to enter the district via Grand Blvd.

**RECOMMENDATIONS**
- More prominent (Grand Center-branded) directional signage would improve district recognition.
- Directional signage from major interstates (40, 44 and 70) and nearby neighborhoods (Central West End, Downtown, North St. Louis) should direct visitors to enter the district via alternate routes, such as Compton or Vandeventer.

Arriving & Wayfinding

**IMPRESSIONS**
- Prevalence of SLU signage at primary entrance (Grand/Lindell) is confusing.
- There is no physical entrance or identifying Grand Center sign anywhere in the district.
- Signage/wayfinding implementation is inconsistent, especially in the NE area of the district. (Green street signs vs. blue, no banners or other identifying elements)
- Very minimal brand presence off main corridor; creates disconnect for side-streets
- Mast-Arm signs at main intersections do not stand out due to size (only a 5% size increase was granted due to concerns about wind shear).
- Some feel signs are hard to see at night, and should be illuminated internally.
- Some feel street names on pole-mounted signs are difficult to read from a distance.
- Many signs/banners are missing/damaged.

**RECOMMENDATIONS**
- Implement branded elements consistently throughout district, including stronger presence along side streets.
- Address functional qualities such as color and size for improved legibility.
- Increase volume and continuity of branded elements.
- Target and encourage pedestrian traffic through appropriately scaled, informative signage.
- Engage and educate visitors though cross-promotion.
- Opportunity to create wayfinding tool for hand-held devices.
- Opportunities for light installations that would draw attention and help transform the area at night.

Experience

**IMPRESSIONS**
- Branded items are effective as place-making/defining elements. Beyond Grand, these elements are sparse, appear random and don’t reinforce a unified destination.
- Pedestrian unfriendly. CVC sign located at Strauss Park is the only pedestrian-oriented signage found in the area.

**RECOMMENDATIONS**
- Increase volume and continuity of branded elements.
- Target and encourage pedestrian traffic through appropriately scaled, informative signage.
- Engage and educate visitors though cross-promotion.
- Opportunity to create wayfinding tool for hand-held devices.
- Opportunities for light installations that would draw attention and help transform the area at night.

Exit

**IMPRESSIONS**
- There is currently no directional signage guiding visitors how to exit the area.
- Traffic after events is problematic.
- Most visitors exit via Grand

**RECOMMENDATIONS**
- Implement exit-specific signage at major parking lots directing visitors to exit via alternate routes (Compton, Vandeventer)
- Increase presence of directional / interstate signage.
Lighting Challenges and Conditions

Qualitative Review and Analysis of Lighting Conditions

Lighting conditions throughout Grand Center vary in a number of significant ways. The study area for this project includes both major arteries and secondary feeder streets; and two fundamentally different approaches for the illumination of vehicular/pedestrian movement.

The streets are illuminated from both sides by the historic replica, high pressure sodium pedestrian-scaled poles on portions of Olive Street, Washington Avenue, Grandel Square, Delmar Boulevard and Grand Boulevard. These provide the most balanced lighting for both auto and pedestrian. Illumination levels are significantly higher than minimum standards and the warm glow of the source is appealing to many users. The one drawback to this fixture is that it produces some direct glare, and this can obscure, to a degree, visibility of pedestrians crossing at mid-block or identification of signage or other visual cues. Although the high pressure sodium source does provide a warm glow, it does not accurately portray color.

The other approach to street lighting is the City standard davit arm mounted high pressure sodium refractor unit – a.k.a. “Cobra-head” light. This fixture assembly does a reasonably good job of providing adequate vehicular street illumination levels, but is only marginally adequate in many other areas. Its high mounting allow broader spacing of poles, but provides virtually no pedestrian appeal. The backlight on the sidewalk flattens features and forms, tending to make the area appear less safe and secure. The high pressure sodium source color at these higher mountings feels drab, unappealing and institutional. There is little to no identity or streetscape context provided with this approach.

Just as important as dedicated street and sidewalk illumination, is the lighting and visibility surrounding buildings and properties. The importance of this attribute cannot be overstated. On some streets where there are active store-fronts, lighted signage, architectural highlighting and other illuminated features, the overall streetscape is perceived much differently from streets illuminated in nearly the same manner but without the flanking visual appearance. Although the resulting difference in the overall sense of the place may be obvious, in some cases these differences can also erode perceived sense of safety and security. The role adjacent building and open space can have in enhancing or reinforcing the street experience has been explored in the master plan recommendations.
Quantitative Review and Analysis of Existing Lighting Conditions - Illumination Levels

Although the measurement of light quantity on streets and sidewalks is only a part of understanding the perceived lighting conditions, it does provide a useful framework for assessing the general adequacy of the illumination. The majority of streetscape throughout the Grand Center study area meets minimum standards for illumination levels. The chart illustrated here, identifies by street, the current illumination conditions provided by the street lighting systems. Illumination of some streets can be improved through the addition of light sources, either more of what has already been established or new systems. Areas where vehicular related accidents have historically occurred, the enhancement of lighting may help in reducing such incidences.

**Lighting Goals**

**Best practices for Lighting**

A successful streetscape lighting design encompasses both qualitative and quantitative needs of the community’s program. Safety and security demands lighting levels and uniformity that meets or exceed standards of the Illuminating Engineering Society. It must also balance these requirements with the City of St. Louis’ light level guidelines.

**Lighting Guidelines:**

<table>
<thead>
<tr>
<th>1.0 to 2.0 foot-candles</th>
<th>0.6 to 5.0 foot-candles</th>
<th>6 to 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street surface illuminance</td>
<td>Pedestrian walkway surface illuminance (variations based on specific function, safety and security needs of given area)</td>
<td>Lighting illuminance uniformity of illuminance for maintaining good visibility</td>
</tr>
</tbody>
</table>

Street and pedestrian area lighting should also:
- Minimize glare.
- Provide relatively high color rendering properties.
- Appropriate scale – day and night.
- Exhibit good operational and maintenance profiles including: long source life, robust luminaire design (durability), ease of access, current and forward thinking technologies, high energy efficiency/usage profile, etc.

**Lighting Design for the Nighttime Experience**

The nighttime streetscape experience encompasses much more than simple street and walkway illumination. Perimeter elements and adjacent spaces/surfaces contribute significantly to the overall visual experience. This includes aspects of aesthetic enhancement, way-finding, orientation, sense of place, safety and security. It is also fundamental to creating and enhancing the complete experience. Moving forward with upgrades that will impact the nighttime experience of Grand Center streets, must include a sensitive and careful consideration of the adjacent street-side environments. Engaging these spaces, in both the public and private realm, will be fundamental in realizing the full potential of the community after dark.
Public Art Analysis

Existing Public Art in Grand Center

Grand Center is and has been the home of various works of art, both permanent and temporary for many years. The origins of these projects vary, as does the ownership. There are two significant public art projects that were a direct result of an urban plan for Grand Center developed in 1990. These are by Studio Works/Robert Mangurian: Tilted Plane by James Turrell and Shadow Lighting by Randy Burkett of Burkett Lighting. In the past ten years, Grand Center has been home to several temporary public art installations, some initiated by Grand Center, Inc., and others presented by art institutions in the area. Projects, such as Chorus, by Rainer Kehres and Sebastian Hungerer, and Untitled, by Jason Peters, were both commissioned by the Pulitzer Foundation for the Arts as part of The Light Project series in 2008. These demonstrate the power that temporary public art projects have to inspire imagination, energize and enliven spaces, and engage audiences.

In 2011-2012, Grand Center, Inc. developed Temporary Public Art Guidelines through a grant from the National Endowment for the Arts. That planning process resulted in Grand Center’s most recent temporary public art commission, A Chromatic Confluence, by the artist collaborative Thoughtbarn. It was installed at a temporary public art platform south of Powell Hall. It was both visually interesting and interactive.
Permanent Artwork

Leon R. Strauss
Artist: Jesse Vonk
Year: 1999
Location: Strauss Park
Media: Bronze, granite pedestal
Dimensions: 5’ x 3’ x 2’
Owner: Grand Center, Inc. (donated by Fox Associates)
Description: Facing the Fox Theatre, in Strauss Park, is a bronze portrait bust of prominent civic leader Leon R. Strauss. An "Urban Pioneer and Preservationist," as the plaque indicates, he was a man with a vision of a restored St. Louis, a vision that, with his wife Mary, changed the urban landscape of the area.
Shadow Lighting
Artist: Randy Burkett
Year: 1992
Location: Sun Theater, Fox Theatre, Grandel Theatre, Powell Symphony Hall
Media: Electric Lighting
Owner: Commissioned by Grand Center, Inc.
Description: Shadow Lighting brightens the facades of several buildings including that of the Grandel Square Theatre, the Sun Theater, the Fox Theatre and Powell Symphony Hall. The limestone face of the Grandel Square Theatre is dramatically illuminated along its east base in crisp white light and the Grandel’s bell tower is lit in blue. Around the corner is the renovated fluorescent neon Sun Theater sign. Above the neon sign, three large arched windows are highlighted revealing the detailed design of the building’s cornice and frieze. A single light source placed underneath fire escapes on sides of the Sun Theater, the Fox Theatre and Powell Symphony Hall rake the buildings’ exteriors. This work is currently in need of restoration.

Tilted Plane
Artist: James Turrell
Year: 1990
Location: East side of the Grandel Theatre
Dimensions: 6’ H, 35’ W, 25’ D
Media: Environmental earthwork - angled lawn area
Owner: Commissioned by Grand Center, Inc.
Description: Tilted Plane is and earthwork comprised of two triangles of grass that gently slope upward from the corner of Grand and Grandel Square. The viewer can walk across the top of the work or through the work via the sidewalk that cuts it in half diagonally.

Earth Rabbit
Artist: Catharine Magel
Year: 2009
Media: Steel, Fiberglass, mosaic glass and ceramic
Dimensions:
Owner: Commissioned by Grand Center, Inc.
Description: Magel chose the rabbit because of its universal appeal and cultural significance. Luck for the New Year, Fertility for creative ideas among just a few. By examining the wealth of world mythology and folklore involving rabbits and hares we find many wonderful universal tales that can relate to our own lives.

Temporary Artwork Currently on Display

ART at Grand Center
Artist: Jasmine Aber, CEL (Creative Exchange Lab) and Derek Lauer, Lauer Architecture Progressive Design
Year: 2012
Location: 3526 Washington Building
**After Hours**
Artist: Catharine Magel
Year: 2010
Media: steel armature with fiberglass and mosaic coating
Dimensions: Height: 8 feet Length: 13 feet
Owner: Commissioned by Grand Center, Inc.
Description: For a long time, black and white jazz musicians were not allowed to perform together publicly. It was only at after-hours sessions that they jammed together, as Louis Armstrong and Bix Beiderbecke did in Chicago in the 1920s. The bird and rabbit playing a saxophone is meant to be telling an untold story about jazz and blues history. One detailed mosaic picture on the back side of the sculpture shows Louis Armstrong and Bix Biederbecke playing together regardless of the rules to not be seen playing together in public.

**Temporary Artwork Previously on Display**

**Untitled**
Artist: Jason Peters
Dates: September 4 – October 17, 2008
Location: field across from Pulitzer Foundation for the Arts
Media: scaffolding, buckets, light
Owner: Commissioned by the Pulitzer Foundation for the Arts
Description: A snake-like stacked bucket sculpture weaves throughout a cube shaped structure constructed of scaffolding. The rigidity and regularity of the scaffolding contrasts with the fluidity of the buckets.

**CHORUS**
Artist: Rainer Kehres and Sebastian Hungerer
Dates: September 4 – October 17, 2008
Location: Spring Church
Media: scaffolding, donated lamps
Owner: Commissioned by the Pulitzer Foundation for the Arts
Description: Kehres and Hungerer collected lamps from people in the St. Louis community and asked them to share a story about their connection to the lamp. These stories were archived on the web. The artists then used the lamps to construct an installation along the former roof-line of the fire-damaged church. The artists are interested in the history of lamps and through CHORUS they bring back pieces of history to the church.
Sunset (St. Louis, July 30, 2008)
Artist: Spencer Finch
Dates: September 4 – October 17, 2008
Location: Contemporary Art Museum St. Louis
Media: Solar powered panels, Soft serve ice cream machine, Ice cream cones, Ice cream.
Owner: Commissioned by the Pulitzer Foundation for the Arts
Description: This installation used solar power to generate ice cream the color of the sunset. The five ice cream colors were based on a watercolor study made of the sunset in St. Louis.

Crystal World (after J.G. Ballard)
Artist: Ann Lislegaard
Dates: September 4 – October 17, 2008
Location: Pulitzer Foundation for the Arts
Media: side by side video projections
Owner: Commissioned by the Pulitzer Foundation for the Arts
Description: Crystal World is a video installation based on a dystopian novel by J.G. Ballard.

E-scaping the Grid
Artist: Michael Oliveri
Dates: 2007-2012
Location: GrandPA
Media: 11 wind turbines, lights, stainless steel
Dimensions:
Owner: Commissioned by Grand Center, Inc.
Description: A series of wind turbines generate energy that powers the light behind a series of hexagon-shaped medallions affixed to the wall.
A Chromatic Confluence
Artist: Thoughtbarn (Lucy Begg and Robert Gay)
Dates: May 11 to July 1, 2012
Location: GrandPA
Media: scaffolding, plywood, macramé cord
Dimensions: 25’ x 60’ x 11’
Owner: Commissioned by Grand Center, Inc.
Description: An ephemeral maze-like landscape, created from over 25000’ feet of colored macramé cord. With multiple paths in and out, the piece entices visitors to hesitate, detour, linger and meander through the art. As they walk through, visitors experience a mesmerizing, constantly shifting pattern of colors and texture. Pockets and eddies formed by the string create moments of pause and opportunities for conversation.

Temporary Public Art Platforms

Platforms are places that are purposely built for the display of temporary public art or are visually and programmatically well suited for this purpose. Platforms generally have infrastructure to support art projects such as access to electricity and/or data; lighting; foundations/pads in the ground with known weight bearing capacity; secure places to project light and/or video; structural anchors and other pertinent infrastructure. The following are the existing platforms in Grand Center:

Grand Public Art (Grand PA)

Grand PA (short for Grand Public Art) is the site located at Grand Boulevard and Samuel Shepard Drive, on the east side of the street just south of Powell Hall. The site was developed in collaboration with the Washington University School of Architecture especially for the display of temporary public art and is owned by Grand Center, Inc. The site consists of two concrete block walls formed by a relatively narrow strip of lawn and plaza. The wall on the north is 59 feet long by 10 feet high and is approximately 17 feet from the sidewalk. The wall on the south is 41 feet long by 8 feet high and is approximately 23 feet from the sidewalk. The plaza surface is crushed limestone, approximately 6” deep. The plaza has lights embedded in its surface, and an additional set of lights wash the northern wall. Behind the northern wall is an electrical room. There is a concrete bench where the plaza meets the sidewalk.

The site has many attributes that make it a good site for temporary public art projects. It is at a highly visible location on Grand Boulevard, directly next to Powell Hall and across the street from The Grandel Theatre. It has electricity and lighting available and gravel and lawn surfaces that are forgiving for installing and de-installing work. The site works very well as a drive-by and can function as a gateway or landmark within the district. The site will also challenge artists to think about how to draw people in as pedestrians. Without art, it is not an inviting public space and does not naturally encourage people to spend time there. The future of this site may change with the expansion of Powell Hall and the development of a new public plaza in the parking lot to the east of the site.

Spring Church

On Spring, between Washington Boulevard and Grandel Square, stands the remains of the Spring Church, a church dating back to 1884 that burned down in 2001. Grand Center, Inc. purchased the property in 2002 and stabilized the remaining walls. Grand Center, Inc.’s vision is to ultimately preserve and enhance the church so that it can be used as a gathering place. In 2008 the Spring Church was the site for a temporary public art installation, Chorus, by Rainer Kehres and Sebastian Hungerer, commissioned by the Pulitzer Foundation for the Arts as part of The Light Project.

The site, in its current state, presents challenges for temporary commissions: there are no utilities at the site. Unlike GrandPA, it is not centrally located. However, it is close to three visual arts institutions and across from Cardinal Ritter College Preparatory High School. Despite the infrastructure challenges, this former worship space, community anchor and architectural relic, is a compelling site in which artists to work.
Planned and In-Progress Public Art Initiatives

Art Walk

Through a grant from the National Endowment for the Arts and matching funds from local institutions, Grand Center, Inc. is leading the design process for the Art Walk. It is an art-inspired linear green space and pedestrian pathway leading north from Lindell Boulevard (west of the Scottish Rite Cathedral) between the Nine Network and St. Louis Public Radio buildings, past the Sheldon Concert Hall to Washington Avenue, then north and south along Spring Avenue. Design concepts for the Art Walk is will be completed by a local architecture and design firm in 2013.

PXSTL

PXSTL is a collaborative project of the Pulitzer Foundation for the Arts and the Sam Fox School of Design & Visual Arts at Washington University. Through PXSTL, an emerging United States-based artist and/or designer will be selected to create a temporary construction on the vacant lot on Washington Avenue, across from the Pulitzer Foundation and east of the Bruno David Gallery. PXSTL will be open to the public for six months, starting in the summer of 2014.

Public Media Commons

The Public Media Commons will be a new public space located between the Nine Network and St. Louis Public Radio in Grand Center. The Commons will include interactive technology, large-screen projections, performance stages for small groups and a terraced green space.

Public Art Goals - Reinforcing Great Streets Principles

The support and display of public art in Grand Center is distinctive in our region. It is a natural part of creating a great street. How public art supports Great Streets is outlined below:

<table>
<thead>
<tr>
<th>GREAT STREETS PRINCIPLES</th>
<th>HOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Streets are representative of their place</td>
<td>Distinctive artworks become part of Grand Center’s cultural landscape</td>
</tr>
<tr>
<td>Great Streets allow people to walk comfortably and safely</td>
<td>Art is a ‘feast for the eye’ and a pedestrian destination</td>
</tr>
<tr>
<td>Great Streets contribute to economic vitality</td>
<td>Creates an innovative and distinctive art experience that draws people to Grand Center</td>
</tr>
<tr>
<td>Great Streets facilitate placemaking</td>
<td>Creates changing art experiences that encourage return visits</td>
</tr>
<tr>
<td>Great Streets are green</td>
<td>Collaborations bring creative solutions to managing stormwater and making those systems visible</td>
</tr>
</tbody>
</table>