DESIGNING A DESTINATION:
A PLAN FOR THE RIVER MARKET TRANSIT STATION DISTRICT

by

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A REPORT

submitted in partial fulfillment of the requirements for the degree

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Abstract

The location and type of future development around a light rail transit station has the ability to affect its success or failure. Not only should the location of the future light rail line be carefully considered, but the locations of stops will greatly affect future development of the surrounding areas.

The implementation of a light rail system has been proposed for downtown Kansas City as a solution to link its many attractions which are currently spread throughout the metro area.
Although the proposal has not been passed by voters, the concept has generated a great deal of interest and brought up challenges Kansas City would need to address such as funding, alignment, space requirements and impacts on future development. The success of such a large scale, public project would require significant amounts of coordination and planning between many people.

By using the current proposed alignment and studying seven stations located in the core of downtown Kansas City, the station which would require a station district plan the most could be determined. From there, through inventory and analysis of the surrounding area, guidelines would be written to put parameters on future development occurring as a result of light rail implementation. Planning a transit station district in this way would allow the planner to create a unified district, without confining designers to a singular approach. By completing a comprehensive development plan containing design policies and regulations which outline the desired development; this neighborhood can become a dynamic transit district with a mix of retail, commercial and residential development to support a high quality of lifestyle with access to a wide variety of amenities close by in downtown Kansas City.

Designing A Destination:

A Plan for the River Market Transit Station District

Designing A Destination: A Plan for the River Market Transit Station District

By Kris Coen

This book is dedicated to my parents, thank you for your constant support, loving guidance and always keeping me in line.


WESTERN
AUTO

"Development-oriented transit requires the operators of transit systems to expand their focus, to stop thinking that their responsibility ends at the bus stop or the station entrance. The creation of great places with good transit requires a broad view of place making in which many parties participate in the development and maintenance of places served by transit. Transit agency participation in joint efforts to clean and maintain streets and sidewalks, to create seamless transition from transit vehicles to destinations, and to brand the transit experience can help promote development around transit."

Robert T. Dunphy in Developing Around Transit

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the project

(photo courtesy of Gee!Bee, Flicker, uploaded on May2, 2008)

Dilemma

Implementing large scale public transportation projects into the urban fabric of large cities presents a wide range of challenges to both designers and planners. Acknowledging Kansas City's proposed light rail initiative, which stations/stops will benefit the most from a transit district plan and where/what kind of future development should surround a transit station?

Thesis

The location and type of future development around a light rail transit system has the ability to affect its success of failure. Not only should the location of the future light rail line be carefully considered, but the locations of shops/stations will greatly affect future development of the surrounding areas. The value of land around these stops will increase, leading to increased developer interest. Any future development should be carefully selected and supervised to ensure that the public's investment in a light rail transit system was well spent.

Introduction

This section will lay the foundation for the remainder of the book by addressing current conditions in Kansas City, key issues within this project which are relevant to contemporary landscape architecture, background of light rail transit, background of development around transit, development around light rail transit in Kansas City and a brief introduction to form based codes used in district planning. Understanding this background and basic knowledge of transit systems and their components lays the foundation to address Kansas City's light rail transit system.

Current Conditions

Implementation of a light rail transit system has been proposed for downtown Kansas City as a solution to link its many attractions which are currently spread throughout the metro area. The idea has been put to a vote and approved by the public once, but was not followed through with. It has now been resubmitted on the ballot and will be voted on again by the public in November of this year. There are many opinions of both approval and disapproval in the Kansas City area by influential citizens with various stakes in the project. All of these people have the ability to make this project a success or failure in Kansas City, since many of these citizens play major roles in the prior development/redevelopment of Kansas City's metro areas.

Locations of all major amenities to be connected with the new light rail transit system will need to be carefully considered when determined the recommended route and stops. Not only will the light rail need to connect well known city attractions, but also provide easy commutes for residents living in or nearby the downtown area. Previous transportation in the Kansas City Metro area, such as vehicular and bus routes, will need to be studied as well as examined carefully to determine which have heavier or lighter use. Other site conditions will be any new and recent development taking place in Kansas City, such as the Power and Light District and the new Performing Arts Theater which is being built on the southwest corner of downtown

Key Issues Relevant to Contemporary Landscape Architecture

Kansas City has continued to sprawl over the course of the last couple decades. While this development trend is common for many large cities, it does very little to create a vibrant urban core. Kansas City has made many improvements to its downtown area to combat this development trend, the most current and notable project being the Power and Light district. The city has made many direct attempts to revitalize their center and one of the next large proposals is the implementation of a light rail line.

Kansas City's many attractions are not all located in its central core, but spread throughout the larger metro area. For example, the airport is located far to the north and the zoo is far to the southeast, neither easily accessible from downtown Kansas City. To assist residents and promote the city's attractions, a light rail transit system has been discussed as a solution. Tying these major landmarks together with a light rail transit system is a viable solution, but will greatly change how residents and visitors to Kansas City move and live in the metro area. The light rail will not only change many traffic patterns, but also development patterns as people who work downtown will likely consider where to live based on the locations of future light rail stops.

While this development of a city is not generally determined by a landscape architect, a comprehensive plan relating to the completion of a large public amenity, such as a light rail transit system, should take into consideration many of the items a landscape architect often considers when designing. The urban fabric of a city is often

a reflection of its smaller unique spaces and nodes, something greatly impacted by a new transportation system. These new nodes have the potential to affect how the city continues to develop and change its current sprawling. By pulling people back into the urban area and creating denser, walk-able neighborhoods with all the needed amenities around these nodes; a new type of lifestyle is created without requiring the building of larger highways and outward leapfrogging development.

Figure 1.1 The Hudson-Bergen Light Rail line in New Jersey. *(Wallyg, Flickr, uploaded on November 5, 2006)*

Budget is a commonly forgotten item of discussion in design theory, but an extremely relevant item in considering development. Considering the most cost effective way to execute this light rail transit system in Kansas City encourages wider public support of the project. Developers also play a key role in determining the location and type of development. Form based codes will need to be uniformly considering by all the surrounding municipalities of Kansas City to ensure the appropriate development takes place. Landscape architects often play large roles in writing these form based codes and in determining what public incentives are put in place to assist private development. If the light rail transit system is to be a success in Kansas City, developers and landscape architects along with public officials will need to work hand in hand to impact Kansas City in a positive way.

Background of Light Rail Transit

Light Rail Transit (LRT) is a mode of urban transportation utilizing predominantly reserved but not necessarily grade-separated rights-of-way. Electronically propelled rail vehicles operate singly or in trains. LRT provides a wide range of passenger capabilities and performance characteristics at moderate costs. *(Department of Transportation 1976, 9)*

Light Rail Transit (LRT) is still relatively new when considering transportation systems for cities. Originating in the United Kingdom and Germany around the 1950s, many metro areas sought to revamp their antiquated streetcar networks into a quicker and more efficient mode of transportation. Twenty five years later, LRT made its way to North America in Edmonton, Alberta, Canada, closely followed by United States' first LRT system in San Diego. LRT is distinguishable from streetcar/tram systems by its ability for a higher passenger load, increase in doors allows better use of transport space, and faster and quieter in operation.

Since San Diego, one successful application of LRT can be found in Minneapolis, MN. The 11 mile line with 17 stations connects downtown Minneapolis with the Mall

of America, one of its' leading tourist attractions. While planning the line, the city put a major emphasis on connecting the line with existing bus routes to further enable public transit routes. The line has continued to grow since originally completed in 2004 and ridership on weekdays has skyrocketed from 26,400 in 2007 to 32,200 in 2008 *(Light Rail Now, August 13, 2008)*.

Also benefiting from LRT is Denver, Colorado. Denver began with their 5.3 mile long Central Corridor line built in 1994. Expanding from their they added the 8.7 mile long Southwest corridor with 5 additional stations in 2000. Next was the 1.8 mile long Central Platte Valley Corridor line adding another 4 stations. Currently, the 12.1 mile long West Corridor line is under construction to connect Union Station to the Jefferson County Government Complex and should open in 2013 (The Regional Transportation District in Denver, 2009).

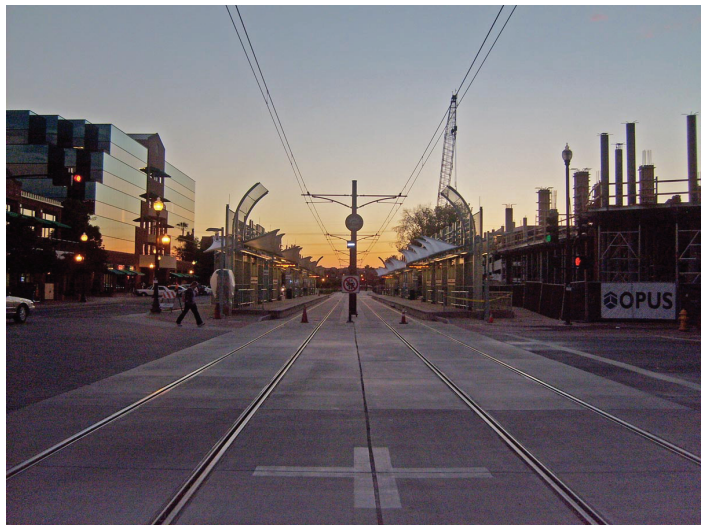


Figure 1.2 Light Rail corridor in Phoenix, AZ *(Scrap Arcs, Flickr, uploaded on August 25, 2008)*

The benefits large cities experience with the addition of LRT are undeniable. Since municipalities utilize previously owned right-of-ways, construction costs are limited making light rail transit systems cheaper to build that other mass transit solutions turning into lower costs for riders. Lastly, the ability to expand is fully demonstrated in Denver, proving that even small portions of LRT can be extremely successful.

Background of Development around Transit

Experts on development around transit systems Robert Dunphy, Deborah Myerson, and Michael Pawlukeiwicz developed the following 10 Principles to Consider for Development around Transit:

1. Make it better with a vision.
2. Apply the power of partnerships.
3. Think development when thinking transit.
4. Get the parking right.
5. Build a place, not a project.
6. Make a retail development market-driven, not transit driven.
7. Mix uses, but not necessarily in the same place.
8. Make buses a great idea.
9. Encourage every price point to live around transit.
10. Engage corporate attention.

Following these guidelines creates the framework for not only a successful transit system, but thriving surrounding development. The combination of the two contain the possibility of reviving any struggling neighborhood within a metro.

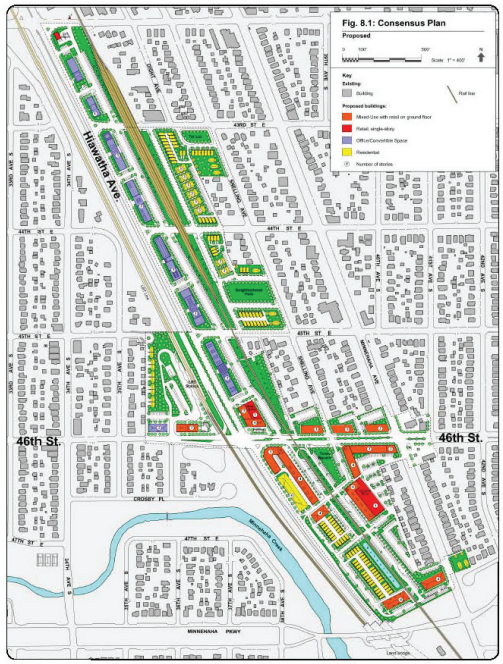


Figure 1.3 46th & Hiawatha Master Plan *(City of Minneapolis, Farr Associates, 2000)*

Once again looking at Minneapolis' LRT system, the 46th and Hiawatha station has applied these guidelines to create a transit district master plan. The study area encompasses a 1/2 mile radius (approximately a ten minute walk) from the station. While the study area includes 500 acres, the final development plan directly affects 56.4 acres, proposing 365,000 sq. ft of retail/office as well as 540 residential units. In addition to the plan, guidelines are specified to monitor retail, office, residential, open space and infrastructure uses. Recommendations are made for building heights, height-to-width ratios, sidewalk widths, street trees, lighting, night sky preservations, signage, on-street parking, sight lines, street furniture and a cohesive architectural style. Combining these three pieces with additional supporting images and graphics provides a strong case and a much higher likelihood of success when the 46th and Hiawatha station is built.

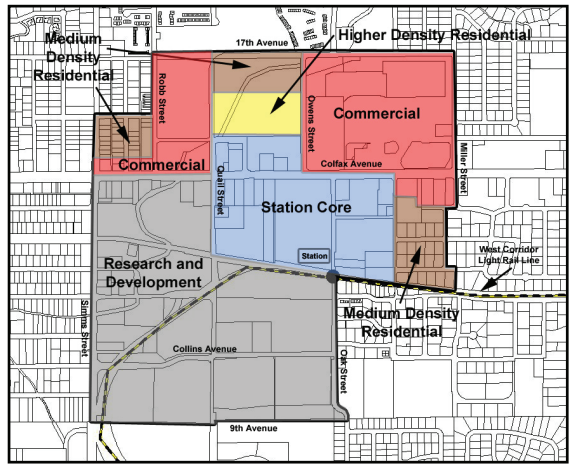


Figure 1.4 5 Sub Areas for Oak Street Station in Denver *(Denver City Council, 2006)*

Another application of transit district planning is the Oak Street Station in Lakewood, CO (outside of Denver). The study split the area into 5 sub-areas to define various existing building heights and densities. The five areas: Station Core, Commerical, Higher Density Residential, Medium Density Residential and Research and Development Sub Areas each addressed sidewalk widths, open space, on-street parking, civic green space, street furniture and bike paths. Each of these features was assessed to determine future needs and necessary improvements. This approach addresses the district planning process from a zoning overlay perspective.

Figure 1.5 Union Station in Kansas City *(mragan, Flickr, uploaded on March 16, 2009)*

Development around Light Rail Transit in Kansas City

The history of development in the Kansas City metro area begins with the original Town of Kansas located adjacent to the Missouri river in the River Market district. Traffic on the river provided all initial push for development outward, followed by the completion of the rail road. A second city was established in the current Westport district of Kansas City for the citizens who wished to live next to a city for convenience, but preferred a more rural way of life. Eventually both townships grew together and the current location of downtown Kansas City is located between, directly south of the River Market district. In the last 30-40 years, Kansas City has experienced an explosion of growth outwards on both the Missouri and Kansas sides.

As of 2009, Kansas City has no major transit system. Since Kansas City's major attractions are spread throughout the city, a LRT line would the be quickest, cheapest and easiest way to get to all destinations. Attracting both commuters and centrally located residents, the implementation of a LRT line as a solution for Kansas City's vehicular traffic is rising in popularity.

Using Form-Based Codes as a Design Tool in Transit District Planning

Form Based Codes are a method of regulating development to achieve a specific urban form. Form based codes create a predictable public realm primarily by controlling physical form, with a lesser focus on land use, through city or county regulations. (Form-Based Codes Institute, 2009)

Form Based Codes are widely used by city planners and landscape architects as a way to put parameters on development rather than completely defining the possibilities. Focusing primarily on urban form allows the designer to concentrate on creating pedestrian scaled, mixed use communities found primarily in urban areas.

Applying Form Based Codes to district planning is a common practice, but the application found in this document will still have a strong focus on land use. Transit District Planning is ineffective without considering the surrounding uses, therefore the codes implemented in this document also take into consideration the balance of mix use surrounding a transit station.

the line

(photo courtesy of pbo31, Flicker, uploaded on January 29, 2009)

History of the Light Rail Transit Line in Kansas City (Cooper, 2008)

1998-2003
Kansas City voters reject six light-rail proposals, five pushed by rail advocate Clay Chastain. No proposal gets more than 45 percent of the vote.

Aug. 16, 2006
Chastain files a petition that calls for putting a 27 mile light-rail plan on the ballot. The plan would use existing bus tax expiring in 2009.

Nov. 7, 2006
Voters finally approve light rail, agreeing to redirect existing bus tax to rail in 2009.

August 2007
Consultants say the Chastain rail plan is too costly and unworkable

Nov. 8, 2007
Kansas City Council repeals Chastain's light rail plan and aims for another light-rail vote.

Jan. 16, 2008
Chastain sues the city for repealing his plan.

May 1, 2008
Judge rules Chastain has no grounds to sue over the city's repeal of his light rail plan. He appeals.

Aug. 7, 2008
Kansas City puts a plan for a new 14-mile starter line on the Nov. 4 ballot.

Nov. 4, 2009
Light rail does not win voter support and does not pass.

Current Status
Light Rail is still being discussed and will most likely be put to a new vote within the next three years. Once the vote is passed by the public, additional funding will need to be located before construction begins.

Latest Statistics on Proposed Light Rail line for Kansas City (all criteria is assumed final for the case of this project)

- 14 mile route w/ 20 stops
- Cost of $815 to build
- 22 Trains would be needed for operation @ $4 million each
- Trains would run from 4 am to 1 am daily
- Average capacity per train would be 200-230 passengers
- Operating costs would be 14 million per year
- Passenger fare would be $1.25 per ride (same as existing bus fare)

Major Destinations Requiring Access to Light Rail line in Kansas City

These destinations were selected from Kansas City's Chamber of Commerce website's 'Most Traveled Destinations in Kansas City Metro Area.'

1. KCI Airport
Connecting the Light Rail line to the airport in North Kansas City is essential to encourage easy business and leisure travelers from out of town.

2. City Market
The original location Kansas City, this historical district hosts the thriving city market, a source of exotic dining and fresh food each day of the week.

3. Downtown Kansas City
As the hub of Kansas City's business district, downtown Kansas City will more than likely provide the Light Rail line with the majority of its primary users. These users will be more prone to accessing public transit as daily way of transportation.

4. Sprint Center/Power & Light District
Recently redeveloped, this district has become the active scene of Kansas City's nightlife and source of popular entertainment. With an average of one new performance each week, the Sprint Center is a popular spot for all Kansas City residents.

5. Convention Center
Spanning 670 Highway, the Convention Center in Kansas City hosts a multitude of large events and direct light rail access is a must for all visitors.

6. Plaza/Westport
As a well established hot spot for shopping and dining in Kansas City, the Plaza and Westport attract a wide range of users looking for easy access to Kansas City's other amenities providing sources of entertainment.

7. Union Station
Still an active source of transportation by train, Union Station has expanded in the last 10 years to included several museums and

attractions for the local resident of Kansas City or the vacationing tourist.

8. Kansas City Zoo/Starlite Theatre
Somewhat off the beaten path, Kansas City's Zoo and neighboring Starlite Theatre are widely used attractions for local residents. Safety will be especially important in this area of Kansas City when building a Light Rail line.

9. Arrowhead Stadium/Kauffmann Stadium
Currently accessed solely by vehicles and a small number of buses, light rail access to this site could greatly expand the ability of fans to find parking elsewhere and still be able to make it to the game.

10. Nelson-Atkins Museum
The center of culture in Kansas City, the Nelson-Atkins Museum provides residents and visitors with new exhibits seasonally.

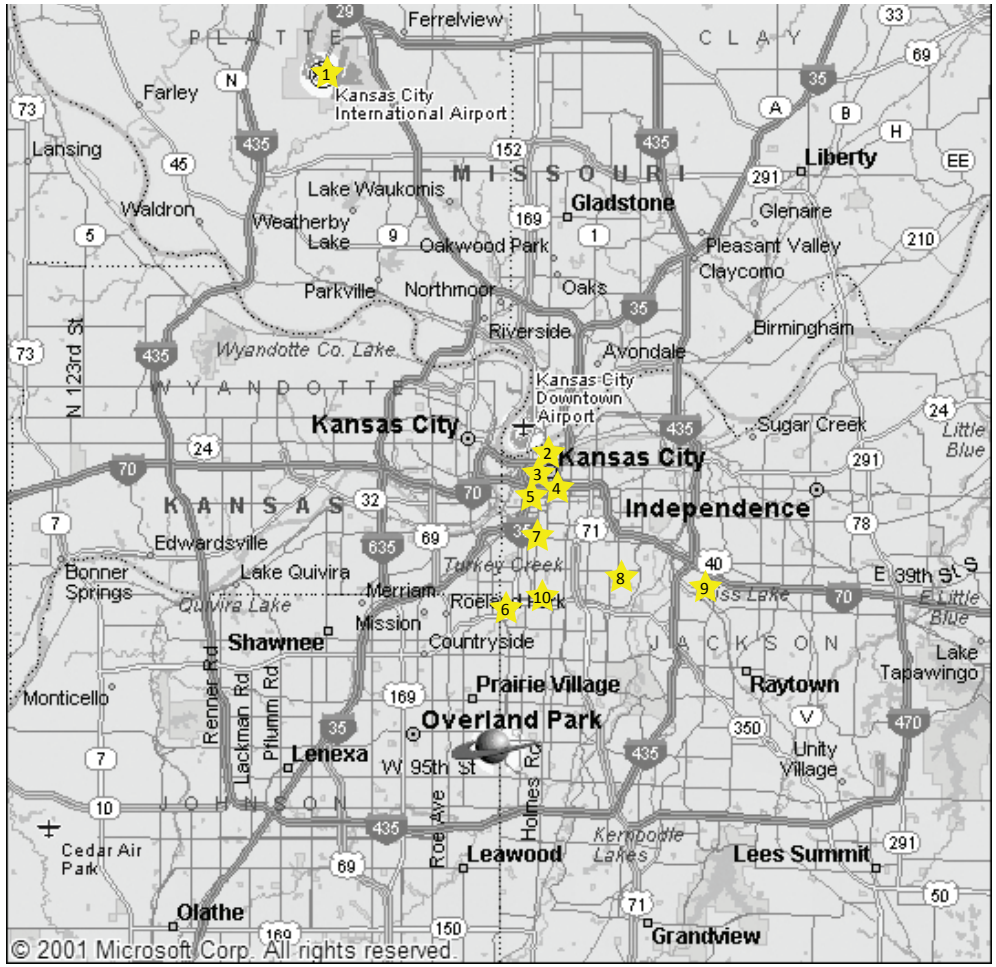


Figure 2.1 Map of Kansas City with locations of all major attractions

Proposed Light Rail Corridor with Stops (July 2008)

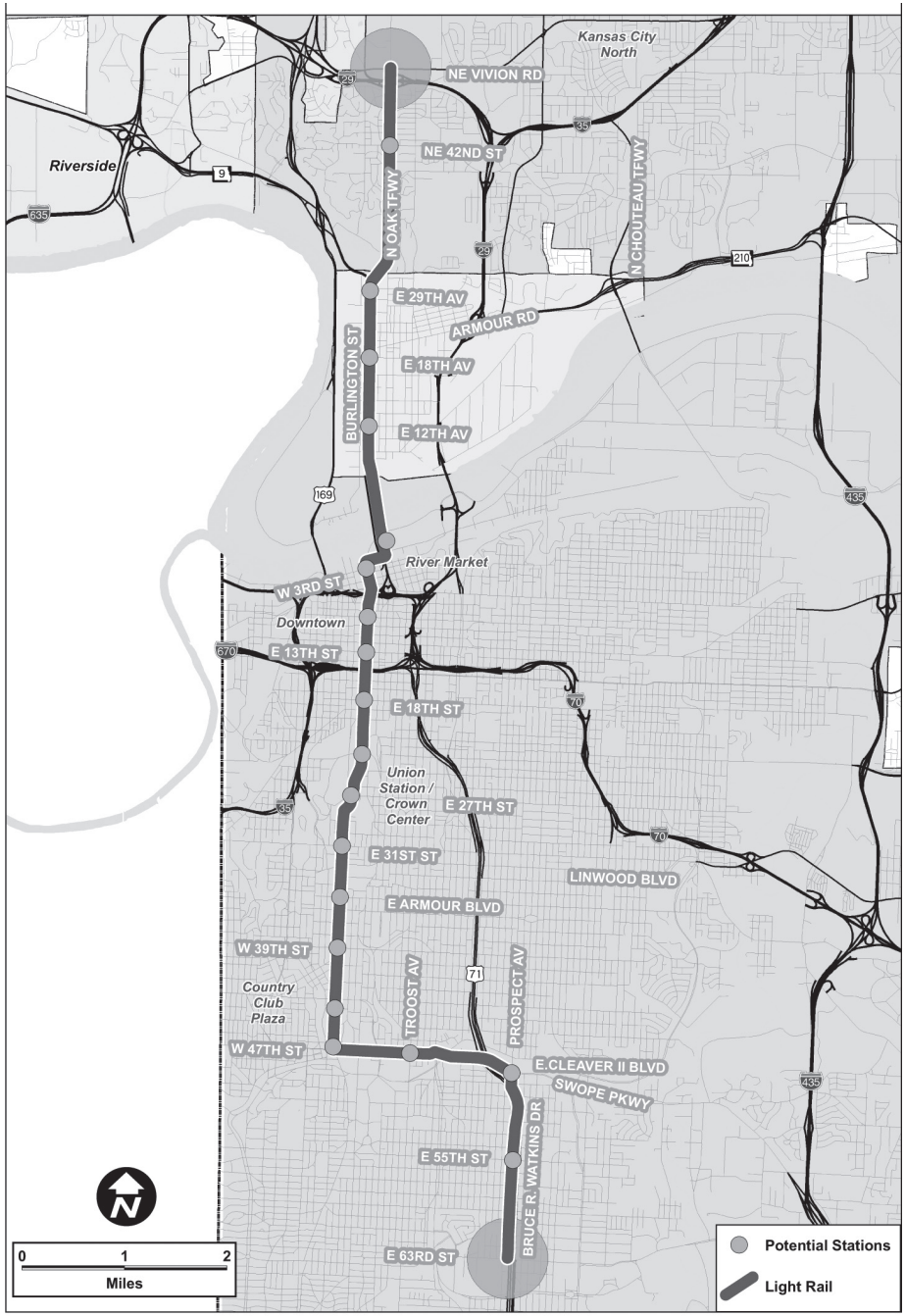


Figure 2.2 Proposed Light Rail corridor with proposed stop locations

Core Study Area for Master's Project Report

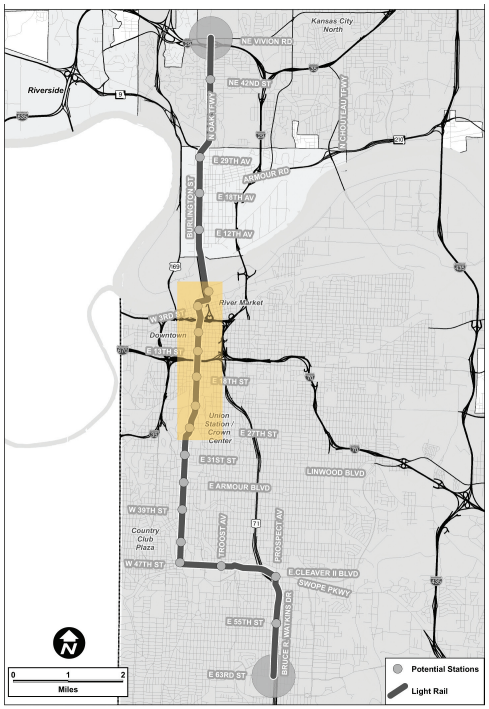


Figure 2.3 Core Study Area

Included Stops:
3rd Street Stop
River Market Station
8th & Grand Stop
13th & Grand Stop
18th & Grand Stop
Pershing & Grand Stop
27th & Grand

Process of Selecting a Station

To focus the project direction, the seven stations proposed by BNIM (an architectural firm in Kansas City) in the core study area were evaluated by four criteria. By looking at the annual crime totals, the amount of existing built structures, available base material and the population within a quarter mile of each station, the station which had the highest need (lowest density of people, lowest amount of built structure, least amount of base material and the highest annual crime totals) of district planning would be identified. Four maps were generated for each station communicated the four criteria and a weighted grade was given to each station according when compared with the other six. The following three charts were created along with a table tallying each stations' final grade, the highest grade identifying the station with the highest need.

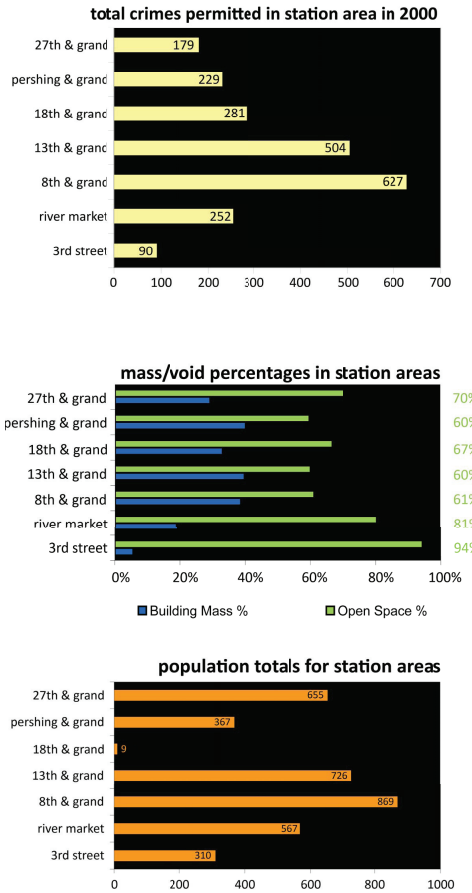
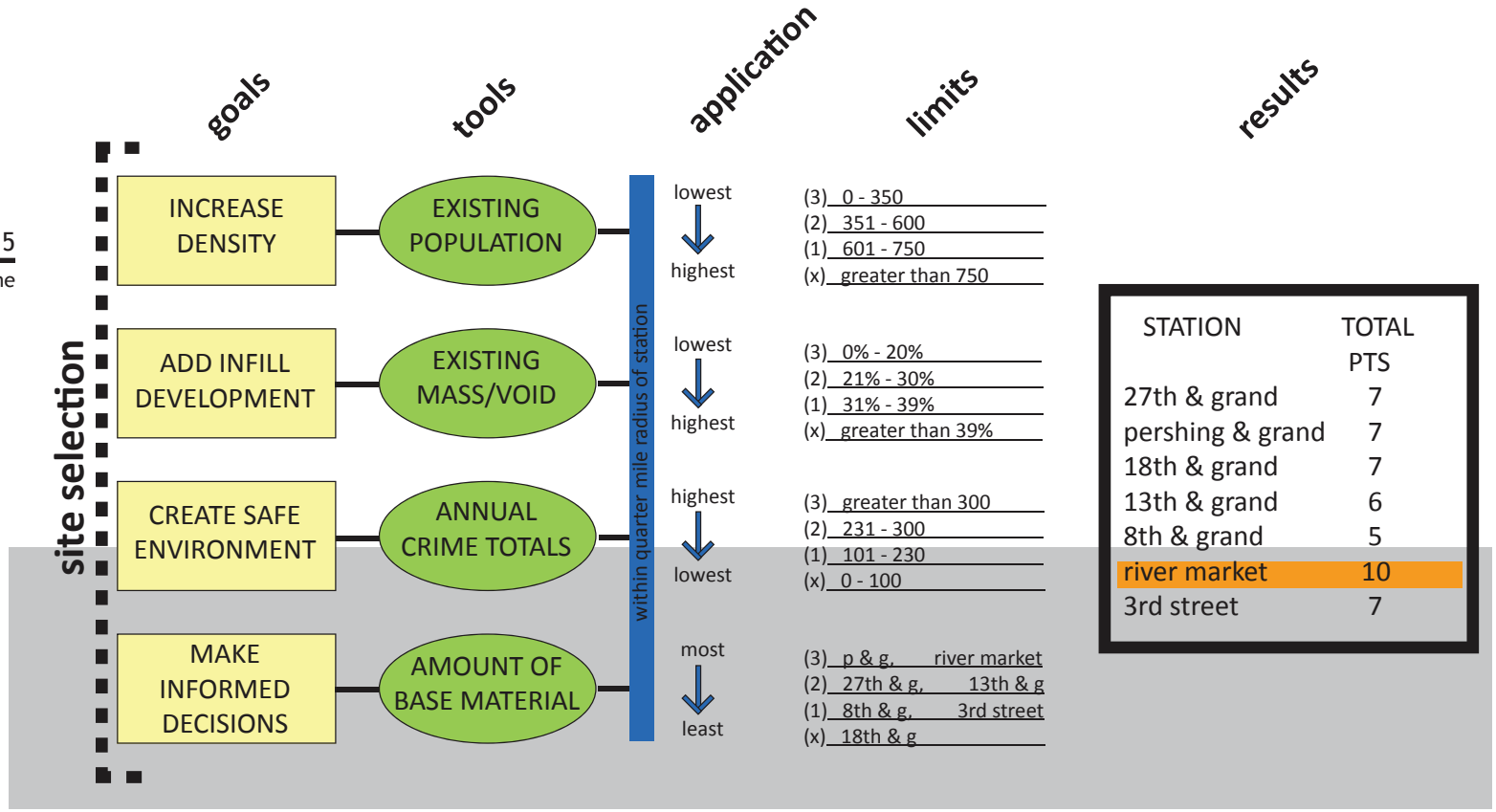


Figure 2.4 Analysis Results for Station Selection



process: site selection

	base material	population	crime	mass/void	
27th & grand	2	1	2	2	**7**
pershing & grand	3	2	1	1	**7**
18th & grand	x	3	2	2	**7**
13th & grand	2	1	3	x	**6**
8th & grand	1	x	3	1	**5**
river market	3	2	2	3	**10**
3rd street	1	3	x	3	**7**

Table 2.1 Compilation of Data from Analysis

After evaluating each stop by the four criteria, the River Market station emerged with the highest potential need for a Light Rail district plan. The adjacent maps illustrate the higher levels of crime in the northwest corner of the site, low population levels throughout the site and excessive surface parking leading to a low amount of building mass. With the River Market station identified the next step begins with through inventory and analysis of how a Light Rail line will impact the River Market district.

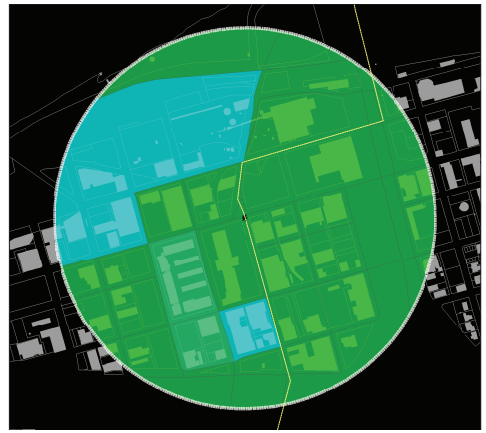


Figure 2.5 Crime Diagram for River Market

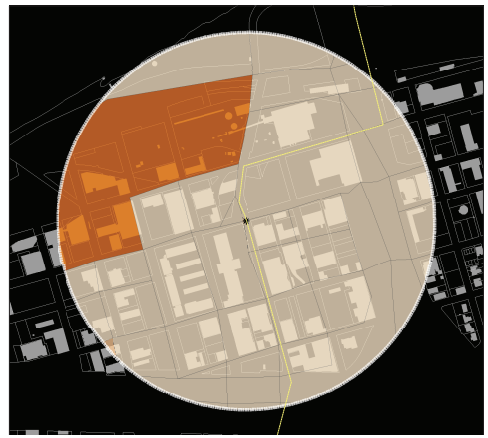


Figure 2.6 Population Diagram for River Market

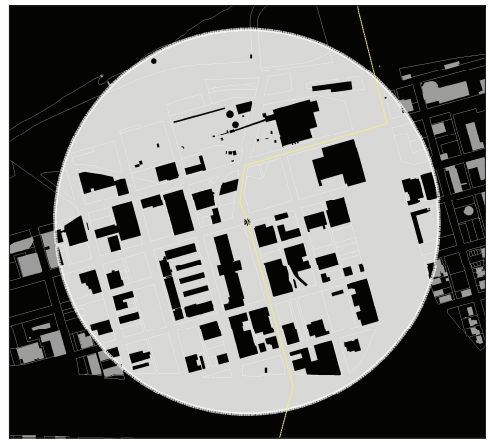


Figure 2.7 Mass/Void Diagram for River Market

the station

(photo courtesy of Christopher Chan, Flicker, uploaded on September 17, 2007)

Base Map of River Market District

Figure 3.1 Base Map

River Market Main Attractions

1. Archeological Site of the original Town of Kansas - area is not accessible but is able to be viewed from above on pedestrian bridge
2. City Market - main attraction to River Market area, open seven days each week and contains the Steamboat Arabia museum as well as many ethnic restaurants.
3. Delaware Street - one of the most picturesque urban streets of the downtown Kansas City area, currently one way and tree lined.
4. Main Street - entry way into City Market, but also lined with active shops and commercial uses.

Figure 3.2 Main Attractions

Zoning
C3b - Intermediate business transitional district
M1 - Light industrial district
M2a - Heavy Industrial district
M2b - Heavy inductrial district (non-residential
PD/M1 - Planned development overlay/ Light industrial district
URD - Urban redevelopment district

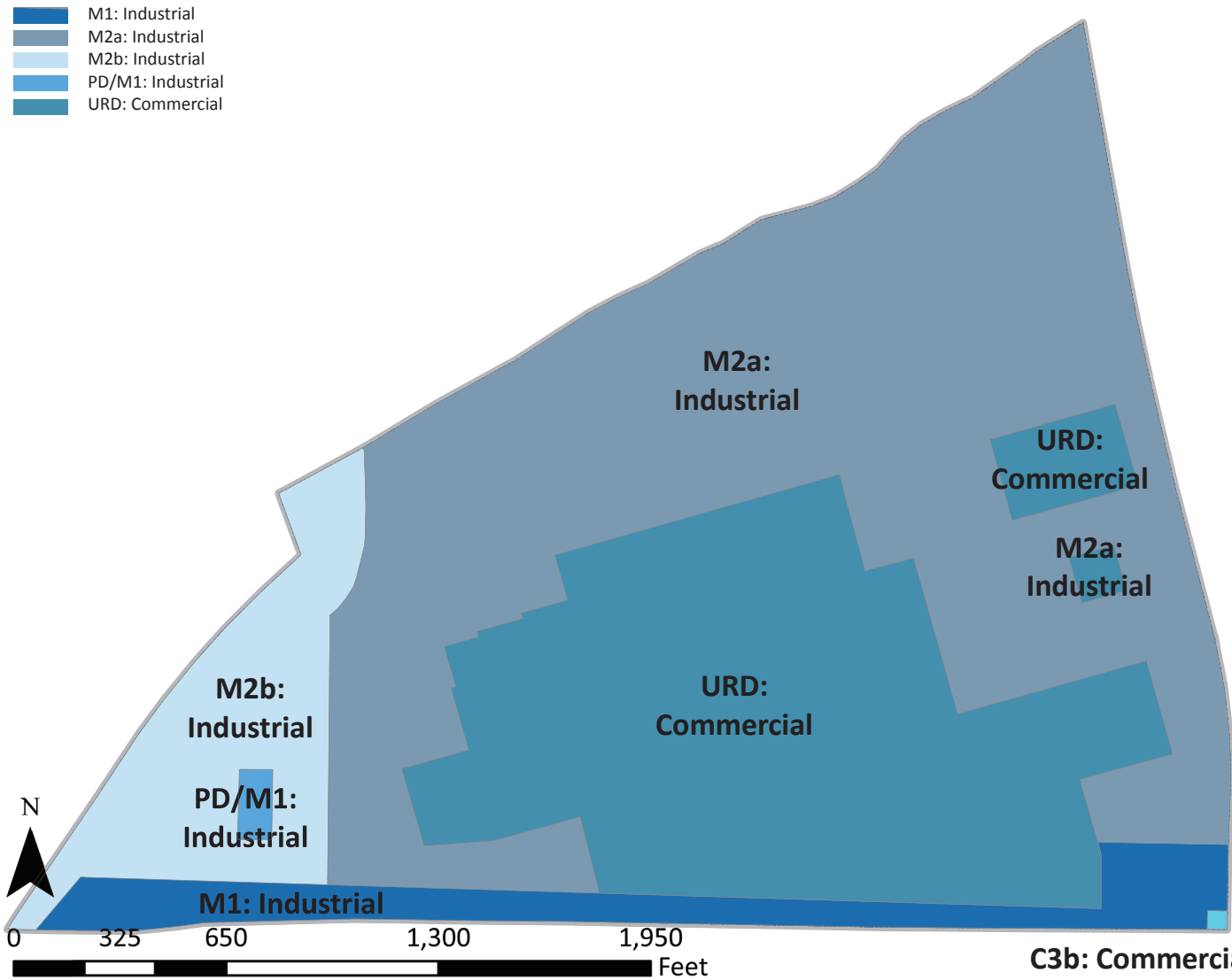


Figure 3.3 Zoning

River Market Population Density

Population densities in the River Market district are a skewed perception of the type of activity which occurs here on a daily basis. While the residential population is continuing to grow with new development, the River Market is most active during the day due to business which draws in employees and clients. An increase in population would help lower crime rates, since most crimes occur at night after most people have left the district.

Figure 3.4 Population Density

Open Space

Open space is sparse in the River Market district. In fact, it is almost non-existent. While there are some city parks in proximity to the River Market, none can be reached on foot without encountering major hazards. To encourage the River Market to grow as a neighborhood which is home to retail, commercial and residential occupants; open space will be a necessity as a gathering space for the community.

Figure 3.5 Open Space

Existing Parking

Parking in the River Market district is not currently an issue for the majority of businesses; however with new residential development occurring and the construction of a transit station, parking needs are sure to increase. Parking will need to be clearly delineated either public or private and must be enforced. Future on street parking will encourage pedestrian safety and their may be the need for a public parking structure.

Figure 3.6 Existing Parking

Parcel Ownership

Land owners will play a large role in any new development that takes place in the River Market district. Land owners which already operate successful businesses in the area will certainly be influenced and affected by the addition of a transit station in the area and if land values do increase, some land owners will more than likely be inclined to sell. It is crucial that development companies who purchase this land have clear boundaries explaining what kind of development will be allowed and supported in this district.

Figure 3.7 Parcel Ownership

Pedestrian Zones

Pedestrian Zones define a pedestrian's experience on an existing sidewalk. Most sidewalks in the River Market district are in decent shape, but there is rarely appropriate vegetation buffers or street furniture and the pedestrian experience leaves much to be desired. Any streetscape improvements will consult this map as a starting point to identify which areas need the most help.

Figure 3.8 Pedestrian Zones

Land Value

Land values in the River Market vary largely due proximity to the city market. Land close to the city market tends to have a higher value and radiate in a declining rate. New development has the ability to alter this trend, especially the establishment of a new public park.

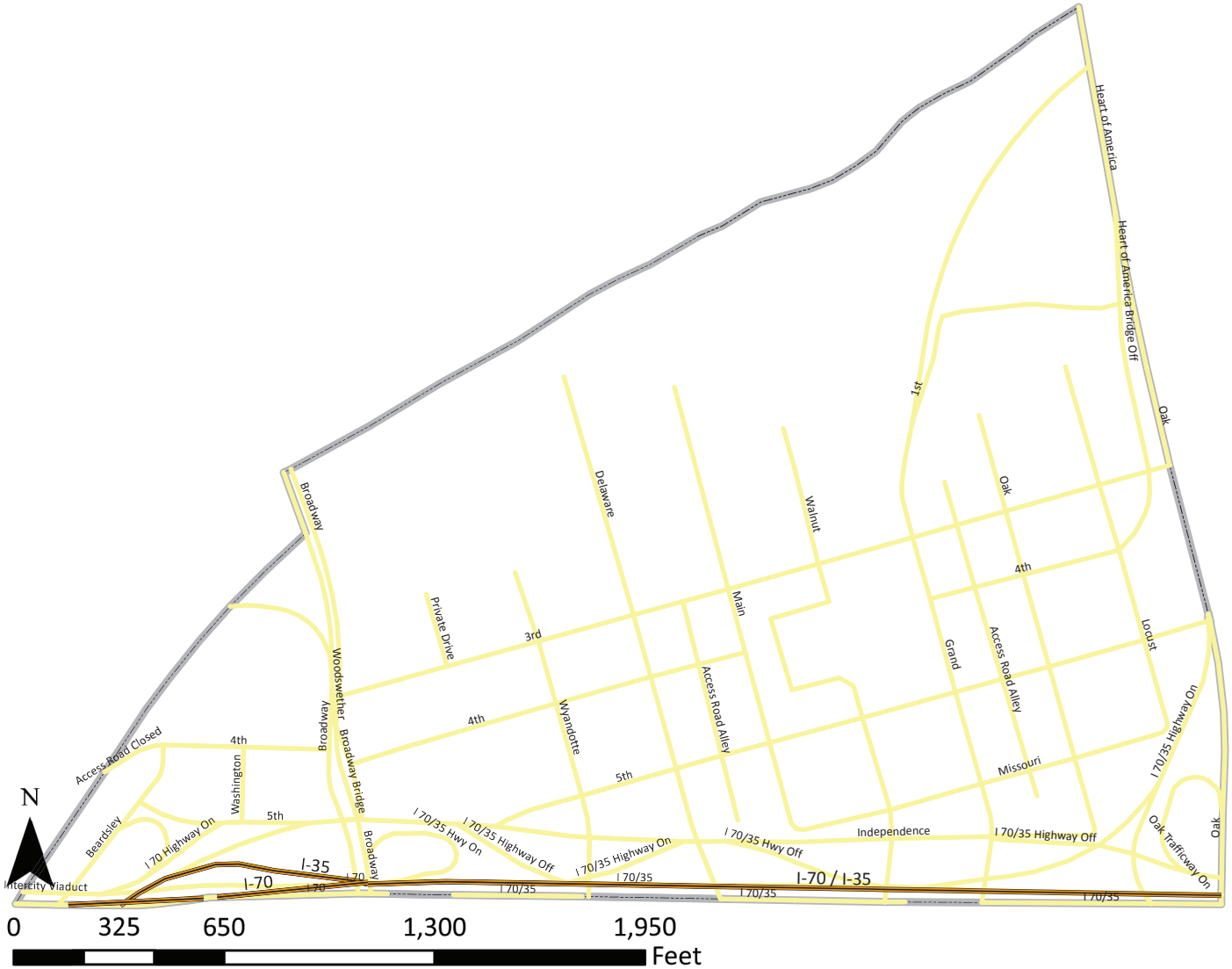


Figure 3.9 Vehicular Transportation

Crime Rates

New development has already played a major role in the River Market District. Over 400 new residential units will be built within the upcoming year and other projects such as a wetland restoration project, riverfront office complex, etc are being considered by developers.

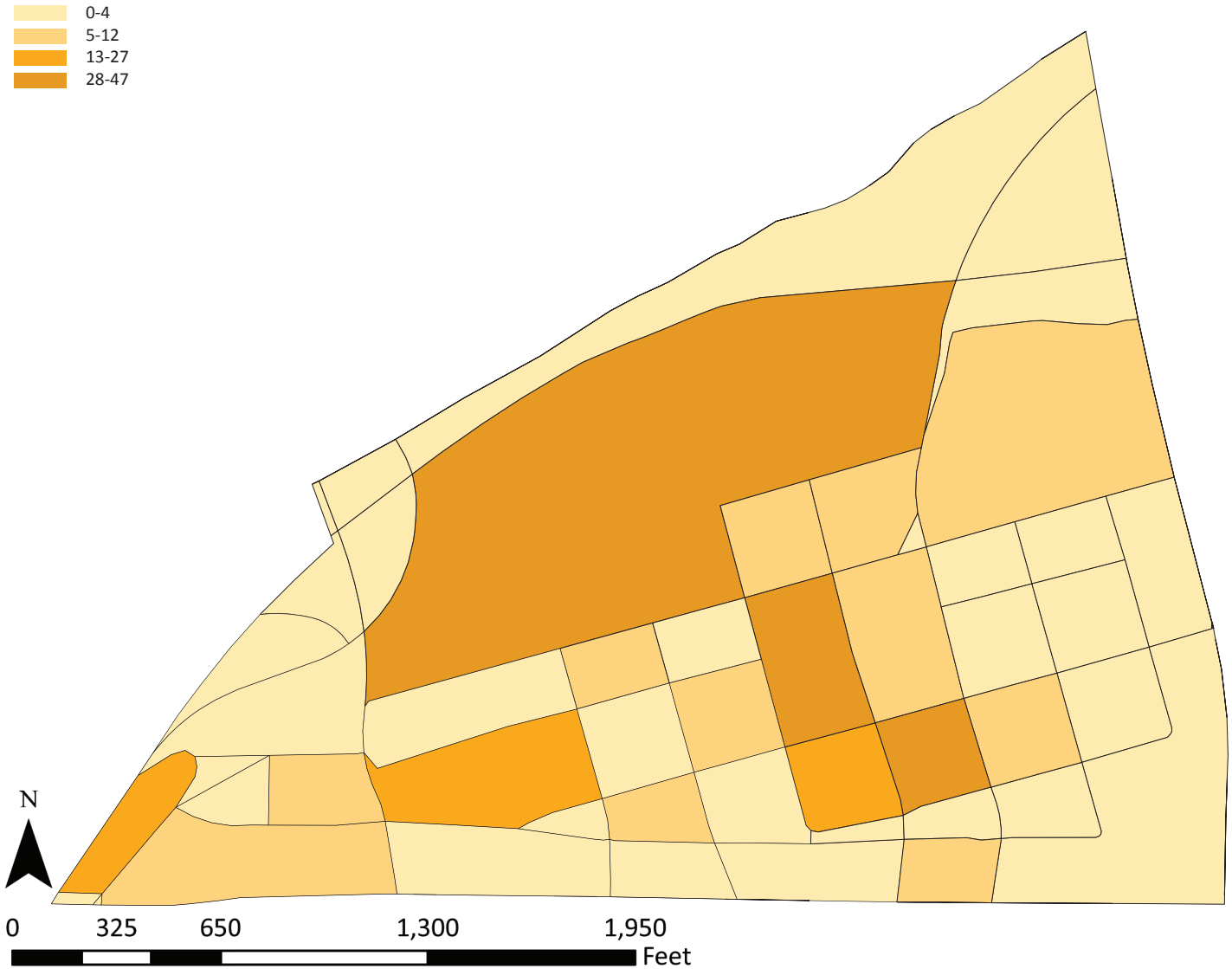


Figure 3.10 Total Annual Crimes

Land Value

Land values in the River Market vary largely due proximity to the city market. Land close to the city market tends to have a higher value and radiate in a declining rate. New development has the ability to alter this trend, especially the establishment of a new public park.

Figure 3.11 Land Value

Infrastructure

Infrastructure locations seem to be evenly spread throughout the River Market. Dilapidated building will probably need updated or repaired plumbing and electrical systems. Existing infrastructure will influence streetscape design, determining width of street and the current state of repair. Infrastructure will also influence any maintenance plan for which the governing municipality will be responsible.

Figure 3.12 Existing Infrastructure

Building Vacancies

Vacancies are largely concentrated in one area in close proximity to the river. Because vacancies are adjacent to each other, it is reasonable to assume that vacancies tend to be contagious, and in that nature, if one vacancy can be corrected it will benefit the River Market and help correct other vacancies. The location of existing vacant building will play a key role in locating infill opportunities and will also influence the studies of adjacent land uses.

Figure 3.13 Vacant Buildings

New Development

New development has already played a major role in the River Market District. Over 400 new residential units will be built within the upcoming year and other projects such as a wetland restoration project, riverfront office complex, etc are being considered by developers.

Figure 3.14 New Development

Breakdown into Sub-Areas

By looking at each inventory map included, the River Market district begins to separate into six different areas with identifiable strengths and weaknesses. Each area is located on the map below and named either because of its characteristics or for a significant landmark within it's boundaries.

The *Riverfront* sub-area will be untouched by light rail development but is a significant feature of the district.

The *Back Porch* sub-area is identified because it is generally an area of the River Market used mainly by residents.

The *City Market/Main St*. sub-area

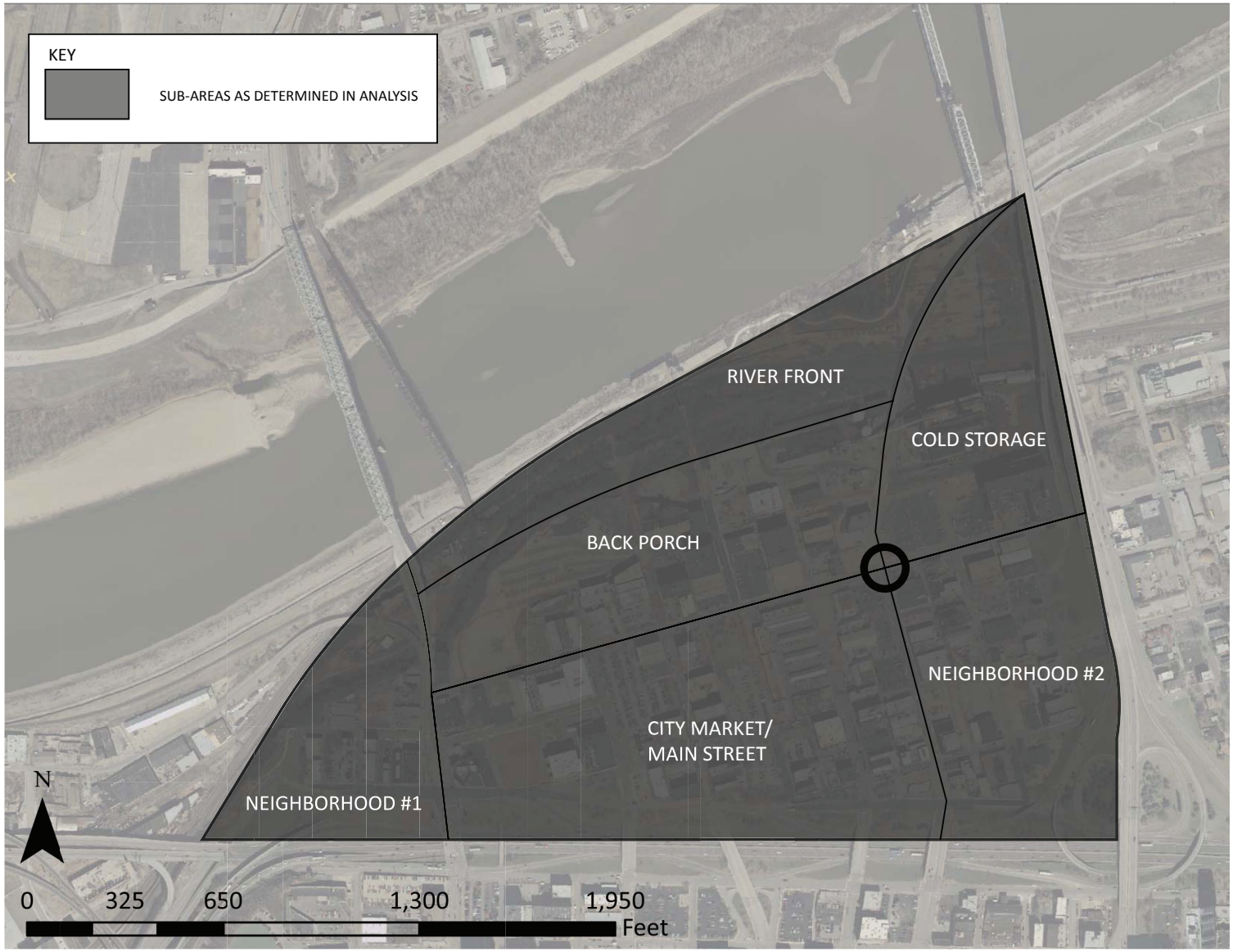


Figure 3.15 Sub Areas of River Market

contains the most popular feature of the River Market, the city market, as well as Main street, a popular street lined with shops and restaurants.

The *Cold Storage* sub-area contains the renovated cold-storage lofts, currently one of the largest residential buildings in the River Market.

Both *Neighborhoods 1 & 2* are the primary residential corners of the River Market and are located on opposite corners.

Table 3.1 Sub Areas of River Market

	River Front	Back Porch	City Market/Main St.
Strenghs	· Water front real estate · Existing pedestrian bridge · Single ownership · Access to Berkeley Park · Recently cleaned · Wetland restoration & wharf master's building · Heritage Trail	· Great urban wall art · Historical character · Reconstruction of 2nd St. · Centralized location · High commercial/retail use · Direct visual access to transit · Direct visual access to city market · Low proximity to major highway · New construction (300 apartments)	· Great mixed use · Little to no vacant buildings · Easy pedestrian access · Easy vehicular access · On street parking · High land values · Direct access to transit · Variety of residential options
Weaknessess	· Lack of existing infrastructure · Active railroad · No parking/no vehicular access · Industrial zoning · Archeological site of 'Town of Kansas'	· High crime rate · Lots of vacant buildings · High number of property owners · Too much surface parking · Low residential use · Infrastructure up keep · Lack of vegetation · Industrial zoning · Needs preservation guidelines	· In need of additional parking structure · High crime rate · Wide variety in land ownership · High volume of surface parking
Relationship to Transit	· Seen by ridership along Highway 9 (elevated view) · No direct access to station · No visual access from riverfront	· Direct access to station · Small visual access · Provide resdients and business owners for transit · Use 3rd street to access station	· Direct access to station · Visual access to Market · Provide residents and business owners for transit · Use 3rd street and Grand Ave to access station

	Cold Storage	Neighborhood 1	Neighborhood 2
Strenghs	· Proximity to Berkeley Park · Construction of new underpass · Low crime rate · Access to river front · Visual access to transit · 2nd St. reconstruction · Only a few property owners · Highway 9 access · No vacant buildings	· Low crime rate · Close to Overlook Park · No vacant buildings	· New townhome construction · Proximity to Market and transit · Visual access to transit · Low crime rate · No vacant buildings
Weaknessess	· Isolated from River Market by Highway 9 · Too much surface parking · Proximity to coal burning plant · Lack of mixed use · Lack of pedestrian connections	· Divided from River Market by Broadway bridge · No parking · Run down infrastructure · Detached from transit station · Limited vehicular and pedestrian access · Low residential population · Industrial zoning	· Lack of unifying direction · Run down infastructure · Bordered by 2 major highways · Lacking in parking
Relationship to Transit	· Direct access to station · Visual access to station · Provide residents for transit · Use 3rd St and Grand Ave to access station · Give transit access to users east of Heart of America Bridge	· No access to station · No visual access · Provide residents for transit · Farthest distance from station	· Direct access to station · Visual access to station · Provide residents for transit · Use 3rd St and Grand Ave to access station · Give transit access to users east of Heart of America Bridge

Synthesis

Reviewing the table of strengths and weaknesses in the River Market provides anyone who is unfamiliar with the district with a better knowledge of what they would find upon visiting the location. From this point, it will be important to reinforce the strengths of each sub-area so as not to create additional work, but also address each weakness in a way that will reinforce the success of a light rail line when implemented.

Synthesis - Neighborhood Identities

Riverfront
Currently under utilized area, but has the potential to become a real access point to the river for anyone in the downtown area. Difficult to the light rail station as of now, but may become another destination spot in the River Market if fully utilized.

City Market/ Main St.
Main attraction to existing River Market district. Currently sets the standard for what should be achieve with any new development in the district.

Cold Storage
Small but essential piece of River Market. Difficult mix of existing elements including residential, heavy industrial, and poor infrastructure; but may be an ideal location for a parking structure.

Back Porch
Ideal location for catalyst development in River Market. Historic preservation needs to be a priority, but shouldn't become a barrier for new infill development. Most likely the site of a station for light rail on Grand Ave and 3rd street.

Neighborhood 1
Difficult to directly connect to light rail station, but proximity make this area difficult to ignore as well. Biggest need is updated infrastructure and the construction of new apartments in area may help solve this problem.

Neighborhood 2
Generally in poor repair, but has great potential to be completely redone with implementation of light rail. Current over population of industrial buildings will need to be evaluated and most likely upgraded.

(photo courtesy of author, taken September 2008)

This section is a synthesis of all information previously presented in this book and provides a set of guidelines to be implemented in conjunction with the construction of a light rail transit line through the River Market district. Instructions for using the guidelines as well as a possible example of the guidelines implemented are also included.

Intent and Goals (generated from analysis of sub-areas)

- Generate a safe urban neighborhood catered towards young professionals and retired families desiring quick and easy access to nearby urban amenities.
- Expand on the unique atmosphere of the city market, accentuating the historical character of the area and level of energy and activity which the market contributes.
- Establish attractive walking routes throughout district giving access to light rail station.
- Create a mix of uses, emphasizing additional commercial and residential space while allowing for street-level retail.
- Consolidating surface parking to create additional opportunities and allow flexibility for infill development.

To achieve these goals, a form-based code is used to address individual issues, while unifying the River Market district. The intent of these guidelines will reinforce light rail once implemented in the district, by creating parameters on development while not controlling it entirely. These guidelines should be enforced by the city of Kansas City and it is recommended that a district plan be completed for each stop of the light rail line before construction begins to better understand the impact light rail with have on Kansas City's development patterns.

the district

1. Identify property location and note its sub-area & block.

Figure 4.1 Base Map with example property.

2. Refer to sub-area's analysis for background information.

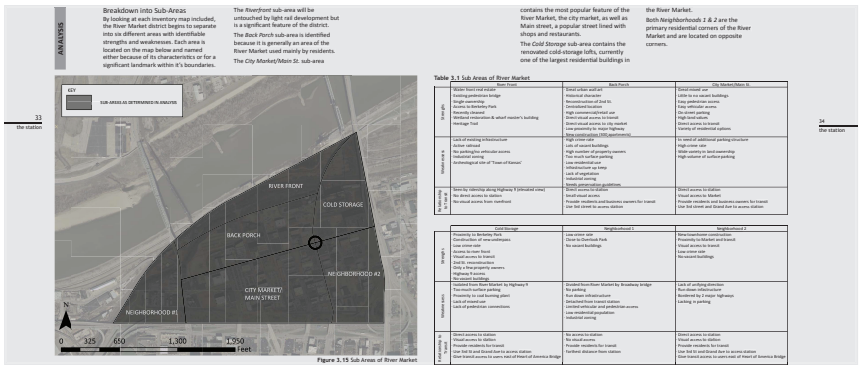


Figure 4.2 Example analysis page from document.

3. Locate thoroughfare adjacency to determine applicable landscape guidelines.

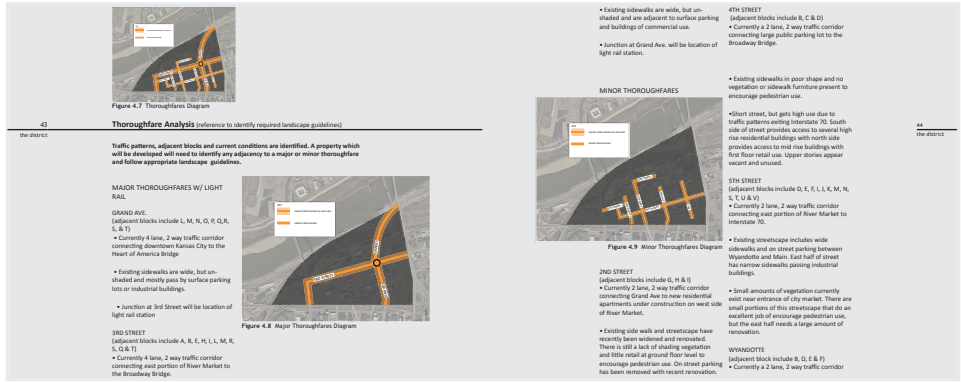


Figure 4.3 Example landscape guidelines page from document.

4. Locate block to determine applicable urban guidelines.

Figure 4.4 Example urban guidelines page from document.

5. Use specified guidelines as parameters for all design regarding future development post implementation of light rail line.

Figure 4.5 Example page from special study area in document.

Sub Area Plan (refer to analysis in previous chapter The Station for sub area strengths & weaknesses)

River Front	Cold Storage
Back Porch	Neighborhood 1
City Market/Main St.	Neighborhood 2

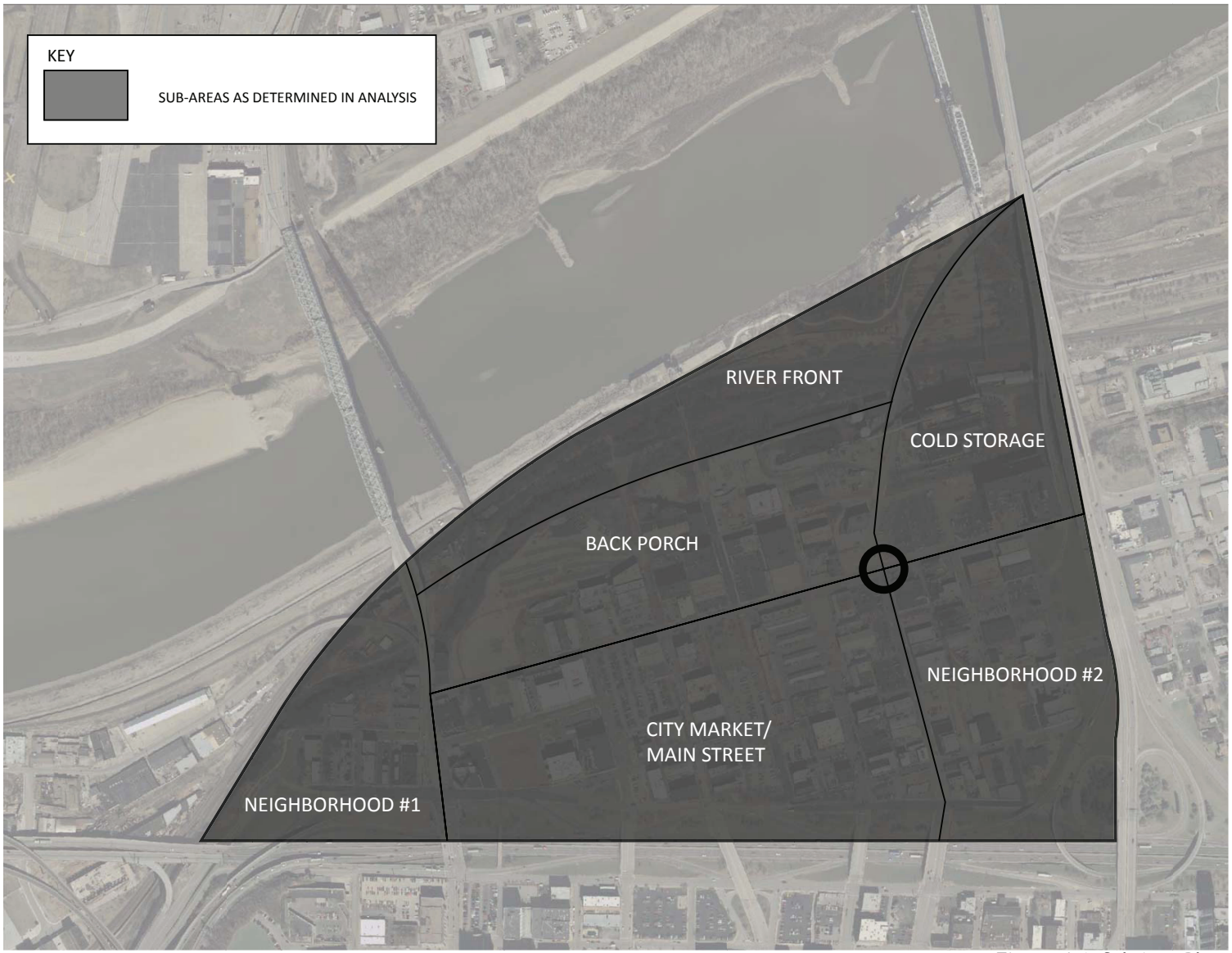


Figure 4.6 Sub Area Plan

Figure 4.7 Thoroughfares Diagram

Thoroughfare Analysis (reference to identify required landscape guidelines)

the district

Traffic patterns, adjacent blocks and current conditions are identified. A property which will be developed will need to identify any adjacency to a major or minor thoroughfare and follow appropriate landscape guidelines.

MAJOR THOROUGHFARES W/ LIGHT RAIL

GRAND AVE.
(adjacent blocks include L, M, N, O, P, Q,R, S, & T)
• Currently 4 lane, 2 way traffic corridor connecting downtown Kansas City to the Heart of America Bridge

• Existing sidewalks are wide, but un-shaded and mostly pass by surface parking lots or industrial buildings.

• Junction at 3rd Street will be location of light rail station

3RD STREET
(adjacent blocks include A, B, E, H, I, L, M, R, S, Q & T)
• Currently 4 lane, 2 way traffic corridor connecting east portion of River Market to the Broadway Bridge.

Figure 4.8 Major Thoroughfares Diagram

• Existing sidewalks are wide, but un-shaded and are adjacent to surface parking and buildings of commercial use.

• Junction at Grand Ave. will be location of light rail station.

MINOR THOROUGHFARES

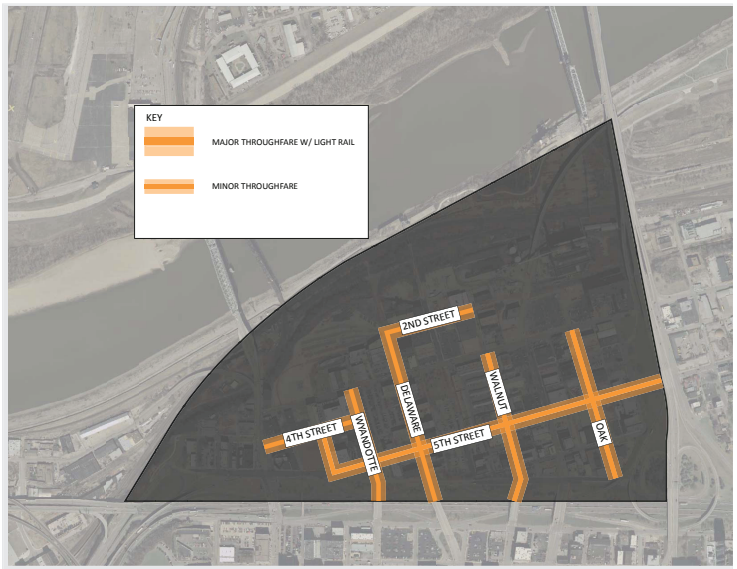


Figure 4.9 Minor Thoroughfares Diagram

2ND STREET
(adjacent blocks include G, H & I)
• Currently 2 lane, 2 way traffic corridor connecting Grand Ave to new residential apartments under construction on west side of River Market.

• Existing side walk and streetscape have recently been widened and renovated. There is still a lack of shading vegetation and little retail at ground floor level to encourage pedestrian use. On street parking has been removed with recent renovation.

4TH STREET
(adjacent blocks include B, C & D)
• Currently a 2 lane, 2 way traffic corridor connecting large public parking lot to the Broadway Bridge.

• Existing sidewalks in poor shape and no vegetation or sidewalk furniture present to encourage pedestrian use.

•Short street, but gets high use due to traffic patterns exiting Interstate 70. South side of street provides access to several high rise residential buildings with north side provides access to mid rise buildings with first floor retail use. Upper stories appear vacant and unused.

5TH STREET
(adjacent blocks include D, E, F, I, J, K, M, N, S, T, U & V)
• Currently 2 lane, 2 way traffic corridor connecting east portion of River Market to Interstate 70.

• Existing streetscape includes wide sidewalks and on street parking between Wyandotte and Main. East half of street has narrow sidewalks passing industrial buildings.

• Small amounts of vegetation currently exist near entrance of city market. There are small portions of this streetscape that do an excellent job of encourage pedestrian use, but the east half needs a large amount of renovation.

WYANDOTTE
(adjacent block include B, D, E & F)
• Currently a 2 lane, 2 way traffic corridor

connecting new residential apartment project to downtown Kansas City. ¬¬

• Existing streetscape includes on street parking, but little to no pedestrian activity occurs due to lack of interesting first floor retail.

• Several antique and historic shops located on north portion of the street making it an area with high potential for historic markers or signs as a unifying element.

DELAWARE
(adjacent block include A, E, F, G, H, I, J)
• Currently 1 lane, 1 way traffic corridor connecting new residential apartment project to downtown Kansas City.

• The best example of pedestrian friendly streetscape in the River Market occurs between 3rd and 5th Streets on Delaware. This portion of the street includes on street parking, wide sidewalks, shading vegetation. First floor retail is present throughout street, with 2-4 floor commercial or residential uses.

• Additional signage may be needed to direct pedestrians towards city market or light rail station.

WALNUT
(adjacent blocks include H, I, K, L, M, N & O)
• Currently 2 lane, 2 way traffic corridor connecting River Market pedestrian bridge to downtown Kansas City, but through traffic is prohibited due to city market.

• Existing streetscape includes wide brick sidewalks and on street parking with first floor retail use. The southern half of this street leads directly through entrance to city market and is very pedestrian friendly, providing and active atmosphere around meal times. The northern half of this street provides access to several commercial use buildings and a large building containing residential lofts. It would be recommended to add retail use to north half of street due to adjacency to light rail station.

OAK
(adjacent blocks include Q, R, S, T, U & V)
• Currently 2 lane, 2 way traffic corridor connecting industrial energy plant to 6th Street.

• Existing streetscape is in poor shape and is mostly passing large industrial buildings. On street parking is located throughout street. Sidewalks need to be widened and shaded to encourage pedestrian use.

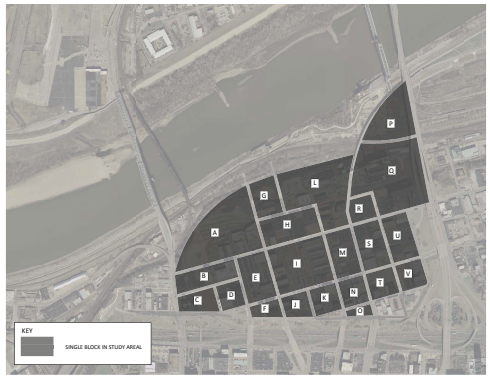


Figure 4.10 Block Diagram

Number of parcels, vacant buildings, existing parking, current building uses, new development and permitted building types are identified. A property which will be developed will need to identify which block it lies within and follow appropriate urban guidelines.

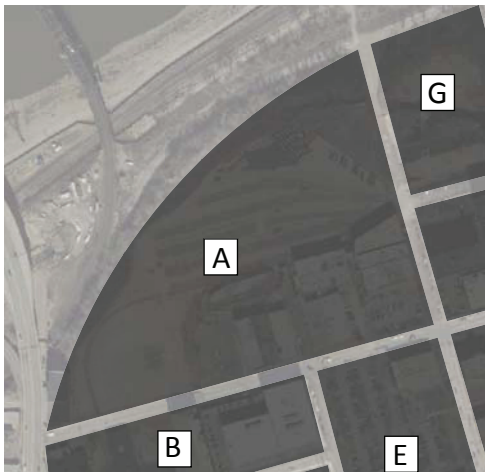


Figure 4.11 Block A Diagram

BLOCK A

• This block is a combination of several small parcels and zoned as M2a: Industrial.

• Two surface parking provide parking to small business located within the block.

• Current redevelopment taking place and 300 residential apartments are under construction along with added surface parking and amenities for residents. New development is oriented to maximize river views over bluff.

• Noteworthy urban art on several brick buildings along with abandoned rail road tracks.

•Residential, retail and office uses are encouraged on this site and should be oriented towards proposed rail line on 3rd Street. All ground level spaces should be retail or office to promote pedestrian use. All buildings fronting 3rd Street should be between 2-4 stories.

• Major crosswalks should be added for access to blocks H & E.

Figure 4.12 Blocks B, C, & D Diagram

• Building types appropriate for this block include:

o TOWNHOMES, LOW-RISE, MID-RISE,

BLOCK B
• This block contains only six parcels with one major owner and is zoned M2a: Industrial & URD: Commercial.

• Small surface parking lot serving multiple small businesses on west end of block and larger private parking structure on east end serving HOKSVE.

• Current buildings oriented to face 4th street, but will need to reoriented them towards 3rd street for maximum visual accessibility from light rail.

• Redevelopment of west end of block should include a small public open space and would be well suited for residential use due to visibility from Broadway Bridge and future light rail line.

• Building types appropriate for this block include:

o TOWNHOMES, MID-RISE, HIGH-RISE

BLOCK C
• This block is made up of two parcels separately owned and is zoned URD: Commercial.

• West end of block is currently a high rise residential property with attached parking oriented toward juncture of Broadway Bridge and Interstate 70.

• East end of block is undeveloped but solely owned. Large potential for residential development oriented toward Interstate 70, with first floor retail or commercial uses oriented toward 4th street. Additional parking would be needed, but could be located on-streets, depending on quantity.

• Building types appropriate for this block include:

o LOW-RISE, MID-RISE, HIGH-RISE

BLOCK D
• This block has a sole owner and is zones URD: Commercial.

• This block is currently developed as high rise residential with attached parking, oriented towards Interstate 70. First story contains some retail business facing Wyandotte.

• Vehicular access is limited and difficult to access, except from 4th street and no good pedestrian access.

• Building types appropriate for this block include:

o HIGH-RISE

BLOCK E
• This block contains several large property owners and is zones URD: Commercial.

• Large public parking lot covers majority of block. Parking lot is in need of repairs and it would be a prime spot for underground parking and low-mid rise development due to vehicular access from three sides of block.

• Existing buildings are oriented towards Delaware, but new development should orient towards 3rd Street and light rail line. Any new development facing 3rd street should have a minimum of one story of retail located on the ground floor with commercial or other retail uses above.

• Building types appropriate for this block include:

o MID-RISE, PARKING STRUCTURE

BLOCK F
• This block has multiple medium sized parcels and is zoned URD: Commercial.

• There is a small private surface parking lot located in this block accessed primarily from 5th Street. Any extra necessary parking is found on the street in front of 2-4 story buildings facing 5th

• Building types appropriate for this block include:

o MID-RISE, HIGH-RISE

BLOCK G
•This block is made up of two parcels

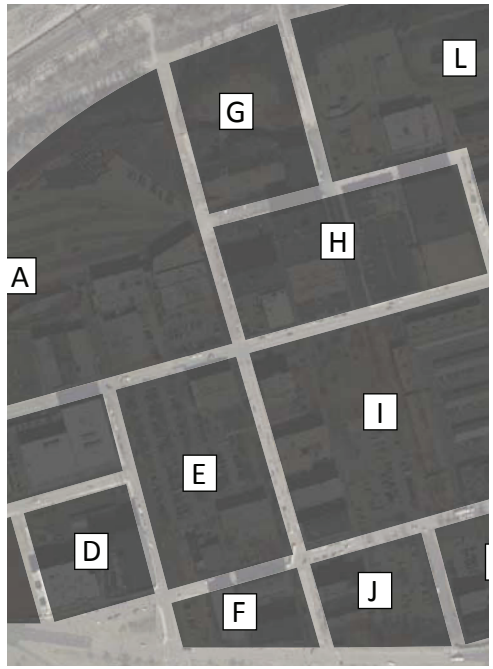


Figure 4.13 Blocks E, F, & G Diagram

separately owned and is zoned M2a: Industrial.

•Northern half of block is adjacent to the pedestrian bridge accessing the river and is largely undeveloped. A small residential development would be ideal in this location, maximizing views and access to the river but would need adequate screening from adjacent industrial properties.

• Parking is entirely absent from this block and on street parking or a nearby parking garage would be a necessity.

• Building types appropriate for this block include:

o TOWNHOMES, MID-RISE, HIGH-RISE

BLOCK H
• This block has a many small and medium

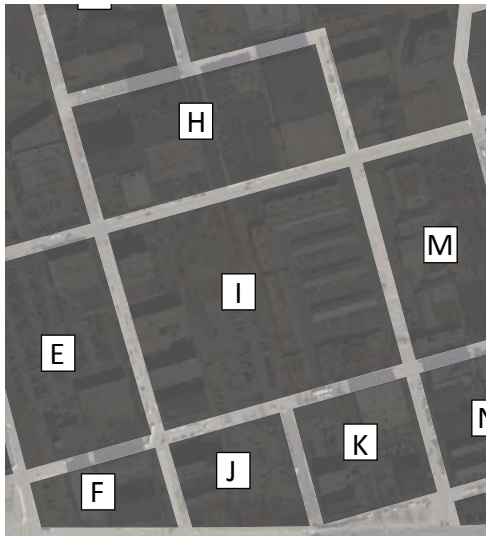


Figure 4.14 Blocks H, I & J Diagram

sized parcels and is zoned URD: Commercial.

• Several small surface parking lots are located around the perimeter of the block and are heavily used. For this area to further develop, a small parking structure will need to replace at least one of these surface lots.

• Existing buildings are mostly renovated historic brick buildings serving either as residential lofts or commercial spaces. The addition of retail facing 3rd Street in this block is essential when the light rail line is implemented.

• Building types appropriate for this block include:

o MID-RISE, HIGH-RISE, PARKING STRUCTURE

BLOCK I
• This block is largely a single parcel, with smaller parcels adjacent to Delaware and is zoned URD: Commercial.

• A large public surface parking lot is found in the middle of the site and is the major parking source for the city market access. This would be an ideal site for a parking structure, being centrally located and easily accessible to many building of different uses.

• Delaware street provides an ideal example for new development in the River Market to follow. A better mix of mid-rise buildings with a variety of uses is can not be found in the River Market, but should be strived for.

• One of the only small public green spaces is located on the north part of this block and would be within sight range of a rail line on 3rd street. A public pavilion or small paved gathering space would be a nice addition.

• The city market vending region is also located within this block. Signage should be increased along 3rd street and access to parking should be well marked. Parking can also be found within the market area for customers.

• Building types appropriate for this block include:

o MID-RISE, PARKING STRUCTURE

BLOCK J
• This block has several small parcels and is zoned URD: Commercial.

• One small parking lot is this block is private and serves a high rise building of renovated lofts, but there is also a larger overflow public parking area for the city market located here.

• Successful existing mid-rise buildings are

found along Delaware. These should remain and residential use should be encourage on upper stories.

• Building types appropriate for this block include:

o MID-RISE

BLOCK K
• This block contains many small parcels separately owned and is zoned URD: Commercial.

• Small private surface parking lots are dispersed throughout the block with access to various buildings located within the block. If this parking could be combined to a single small parking structure, additional space for infill development could be found. Extra parking would also be adjacent to city market and serve overflow purposes.

• Existing buildings need some renovation and although first floor retail is found in all buildings, additional uses on upper stories are encouraged. Buildings originally oriented towards Interstate 70 should relocate and orient towards either 5th Street or Walnut. This space would be better served by additional high-rise residential space with first floor retail.

• Building types appropriate for this block include:

o MID-RISE, HIGH-RISE, PARKING STRUCTURE

BLOCK L
• This block contains larger industrial sights, the majority of which have a direct sight line towards the light rail line on Grand Ave, but

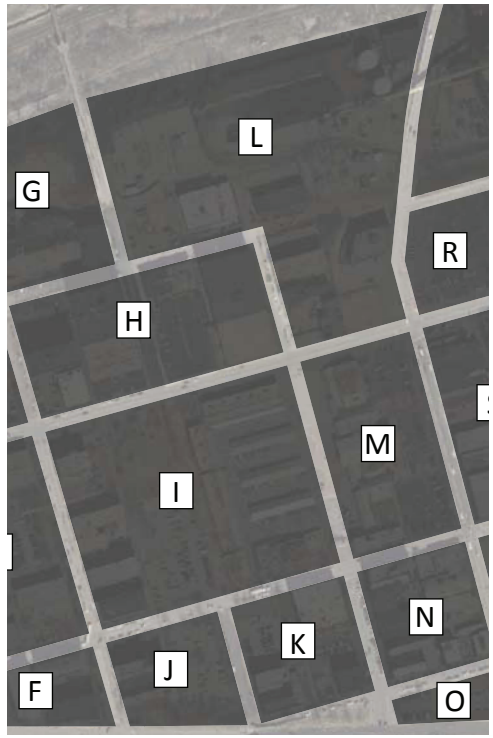


Figure 4.15 Blocks K & L Diagram

no direct vehicular access.

• Small amount of existing parking within this block, none of which is public parking.

• Light Rail station will be located within this block with access to the light rail line juncture on both Grand Ave and 3rd Street. All new development should be oriented towards Grand Ave. or 3rd Street for visual sight lines to light rail and to encourage active pedestrian use along those avenues.

• Heavier industrial uses are located on the north portion of the site. These should have an appropriate screen or fence from light rail line.

• New development should be fully

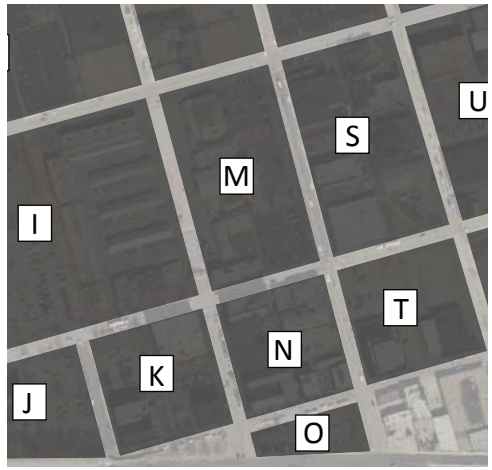


Figure 4.16 Blocks M & N Diagram

integrated with light rail station and all first floor uses should be retail.

• Building types appropriate for this block include:

o MID-RISE, PARKING STRUCTURE

BLOCK M
• This block is a single parcel and is zoned URD: Commercial.

• Public surface parking lots are located on this block is used for access to the steam boat museum and adjacent retail.

• Although the light rail station will be located in an adjacent block, this block should serve as a catalyst for new development at the implementation of the light rail line. The main resident, the Arabic Steamboat Museum, will most likely be relocating in the near future and once that occurs, this block should be entirely renovated to be the new gateway link between the station and the physical city market.

• Building types appropriate for this block include:

o MID-RISE, PARKING STRUCTURE

BLOCK N
• This block has a large number of small parcels and is zoned URD: Commercial.

• There are less than ten parking spaces located within this block, instead on-street parking serves all retail use within the block. Although a parking structure within this block is not realistic, emphasis should be made to locate one nearby.

• Existing buildings are oriented equally to both Grand Ave. and Walnut. All buildings are mid-rise and are currently used for first floor retail and upper stories are commercial.

• Small loft or apartment residential is recommended for upper stories when renovation occurs on older buildings.

• Building types appropriate for this block include:

o MID-RISE

BLOCK O
• This block is a single parcel and is zoned URD: Commercial.

• Currently used as a bank with surrounding surface parking, this block is currently being underutilized. It is recommended to infill with either a high rise residential building or mid rise buildings oriented toward 6th

Street.

• Building types appropriate for this block include:

o MID-RISE, HIGH-RISE

BLOCK P
• This block is a single parcel and is zoned M2a: Industrial.

• Only private parking for the coal burning energy plant is located within this block. Unlikely to be moved, it is recommended to screen industrial uses from both the light rail line and adjacent residential.

• Building types appropriate for this block include:

o INDUSTRIAL (existing use)

BLOCK Q
• This block is a single parcel and is zoned URD: Commercial.

• Private surface parking is found on the west portion of the site to serve the renovated cold storage factory converted to residential lofts. Current parking is sufficient, but the factory is not directly adjacent to any retail for convenience of residents.

• Building types appropriate for this block include:

o HIGH-RISE

BLOCK R
• This block is a single parcel and is zoned M2: Industrial.

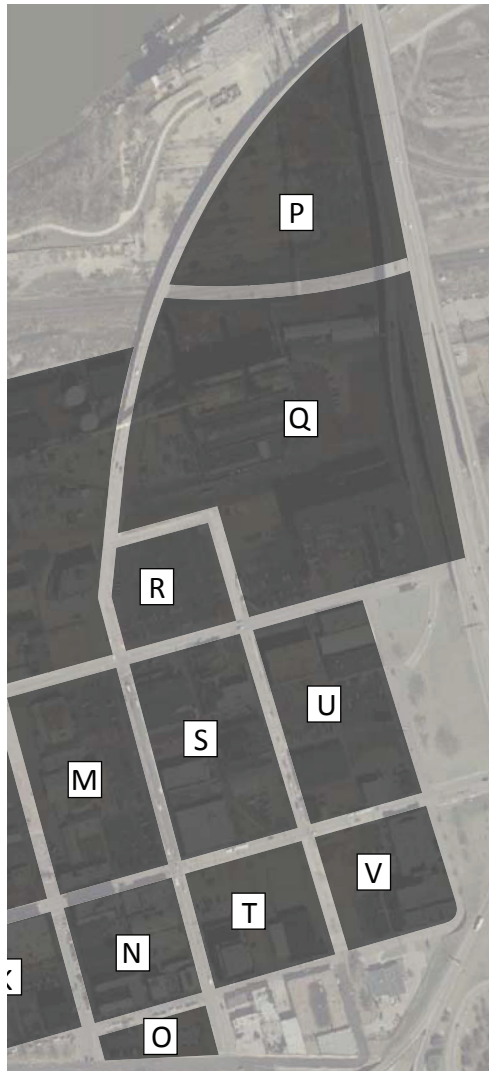


Figure 4.17 Blocks O, P, Q & R Diagram

• Currently covered with a surface parking lot, this area should also be a catalyst block for infill development pending the implementation of the light rail lines.

• An ideal location for a public parking structure to serve the light rail station, this recommended parking structure should also be surrounding by mid rise development

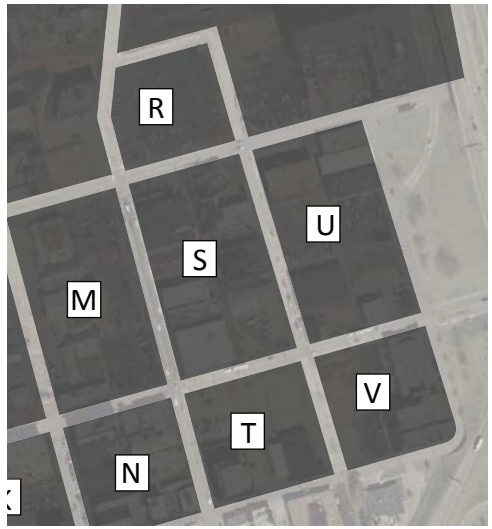


Figure 4.18 Blocks S ,T & U Diagram

with retail and commercial uses.

• Building types appropriate for this block include:

o PARKING STRUCTURE, MID-RISE

BLOCK S
• This block consists of many medium sized parcels and is zoned M2a: Industrial.

• Over half of the block is made up of surface parking lots serving various existing industrial buildings. A parking structure within this block would serve new infill development as well as potential surrounding retail.

• Most of the west half of this block will be redone due to the widening of Grand Ave for the light rail line. It is recommended that the majority of new development be mid rise buildings oriented towards Grand Ave, with the addition of adjacent residential.

• Building types appropriate for this block include:

o MID-RISE, TOWNHOMES, PARKING STRUCTURE

BLOCK T
• This block is several medium parcels and is zoned URD: Commercial.

• Mostly covered with surface parking, there are only two industrial buildings within this block. Anticipating that both will be cleared when widening Grand Ave, it is recommended that the majority of new development be mid rise buildings oriented towards Grand Ave, with the addition of adjacent residential.

• Building types appropriate for this block include:

o MID-RISE, TOWNHOMES, PARKING STRUCTURE

BLOCK U
• This block consists of many medium sized parcels and is zoned M2a: Industrial.

• Over half of the block is made up of surface parking lots serving various existing industrial buildings. Consolidated parking is encouraged to free up additional space for infill development.

• New development that occurs in this block should be oriented towards 3rd Street directly visible from the light rail line.

• Building types appropriate for this block include:

o MID-RISE, TOWNHOMES

BLOCK V

• This block contains several small parcels and is zoned URD: Commercial.

• The west half of the block is undeveloped land facing Oak. This space is a single parcel and would be ideal development for residential use. On the east half of the block are several mid rise buildings with retail on the first floor and residential lofts above.

• The potential in this area lies with the fact that it is a clean slate and instantly ready for development to occur, but some added parking will need to be located within or around the block.

• Building types appropriate for this block include:

o MID-RISE, TOWNHOMES

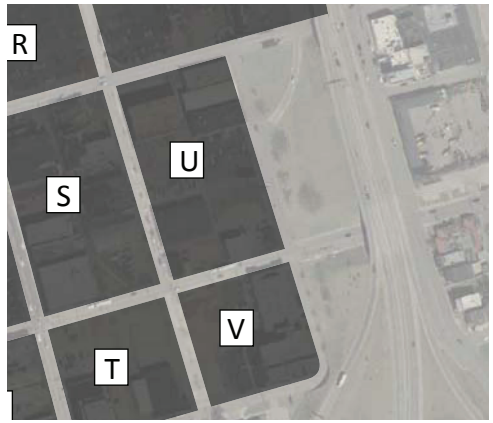


Figure 4.19 Blocks V Diagram

STREET LAYOUT

Major Thoroughfares (sections)

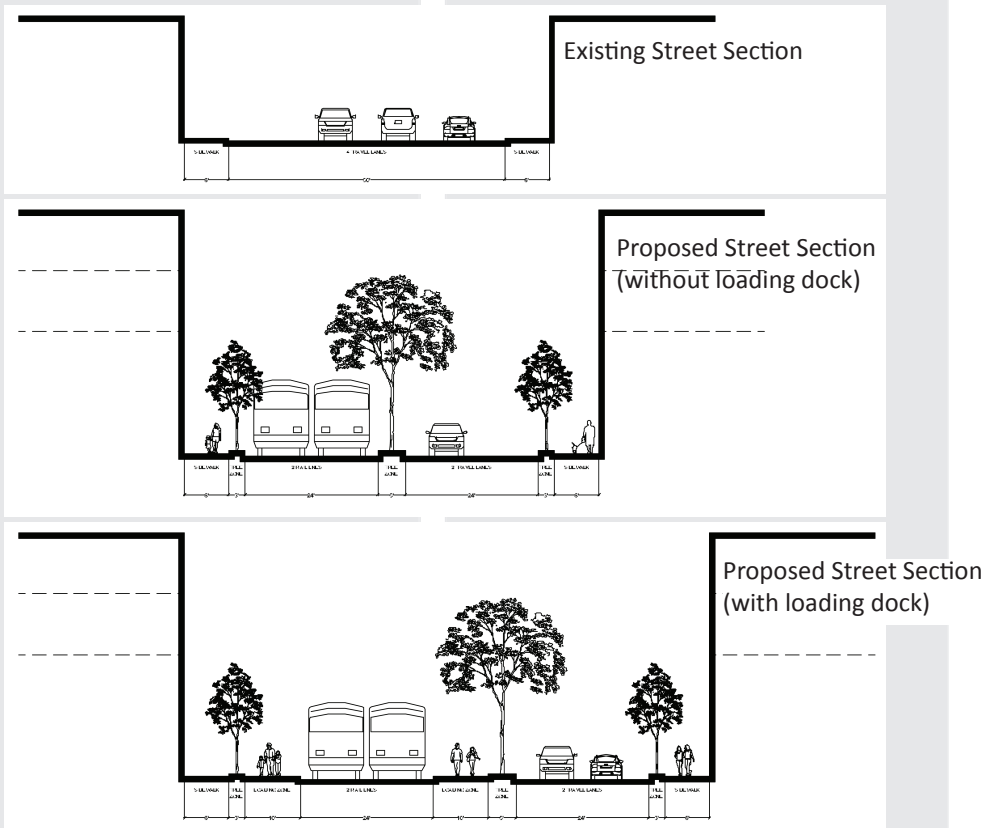


Figure 4.20 Major Throughfare Street Sections

Major Thoroughfares Plan
with loading dock:

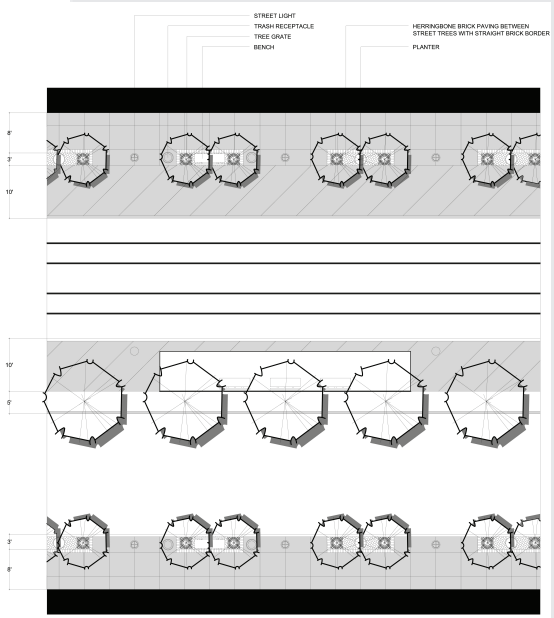


Figure 4.21 Major Thoroughfare (with loading dock) Plan

without loading dock:

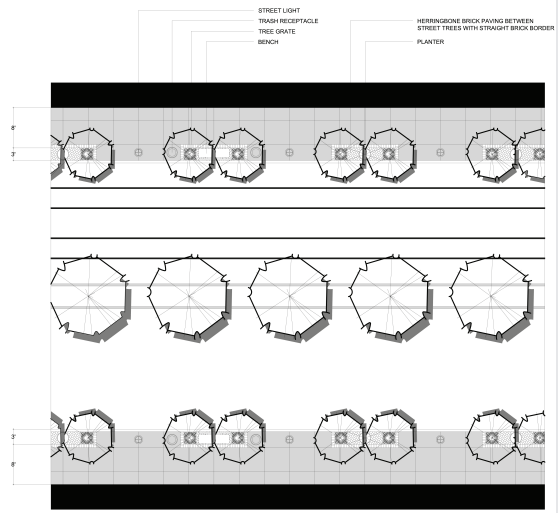


Figure 4.22 Major Throughfare (without loading dock) Plan

Dimensions:
Major Thoroughfare (with loading dock)
Right-of-Way - 95’
Pavement - 48’
Travel Lanes - 2 Vehicular
2 Rail
Parking - N/A
Sidewalk - 8’
Planter type - Tree Grates
Trees
Sidewalk - 20’ O.C.
Center Median - 30’ O.C.

Major Thoroughfare (without loading dock)
Right-of-Way - 75’
Pavement - 48’
Travel Lanes - 2 Vehicular
2 Rail
Parking - N/A
Sidewalk - 8’
Planter type - Tree Grates
Trees
Sidewalk - 20’ O.C.
Center Median - 30’ O.C.

Existing streets sections containing light rail were studied and altered to fit with Kansas City’s current road conditions in the River Market district. The use of trees will provide appropriate separation of uses for street traffic and will enhance aesthetic and safety for pedestrians. Wide loading docks along with covered overhangs will provide light rail passengers a comfortable space to wait for transit to arrive. Vehicular traffic was not split with the rail line to prevent confusion at intersections and to ease in the location of a light rail station at a single corner of the intersection.

Minor Thoroughfares (sections)

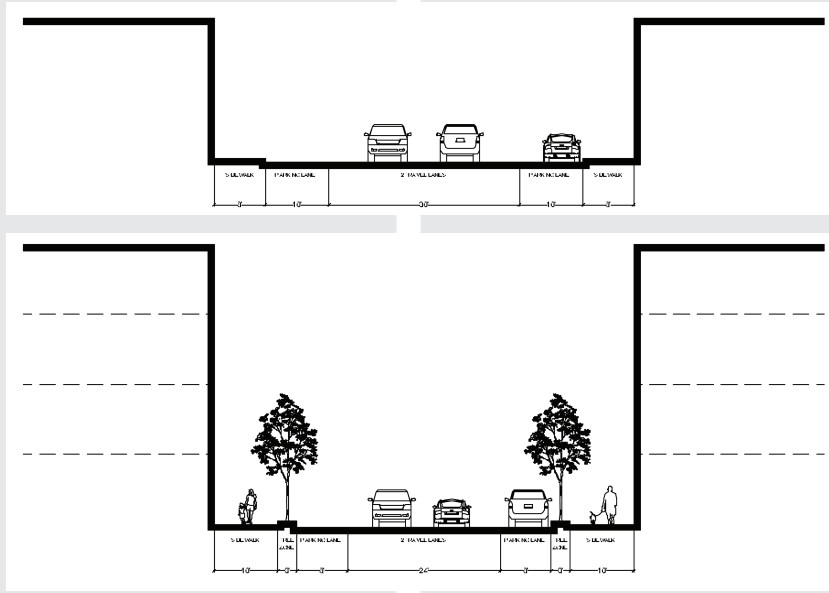


Figure 4.23 Minor Thoroughfare Street Sections

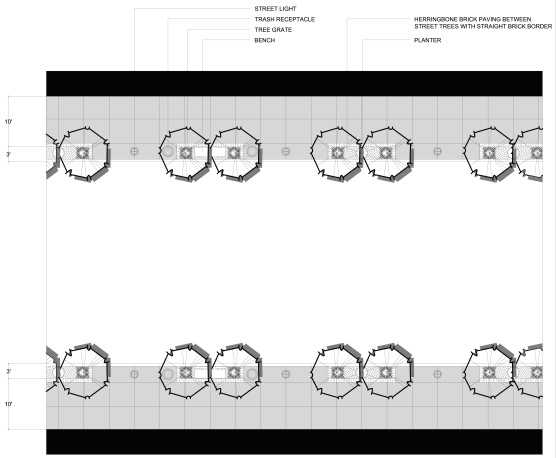


Figure 4.24 Minor Thoroughfare Plan

Dimensions:
Minor Thoroughfare
Right-of-Way - 66’
Pavement - 48’
Travel Lanes - 2 Vehicular
Parking - On-Street Parallel
Sidewalk - 8’
Planter type - Tree Grates
Trees - 20’ O.C.

Minor thoroughfares will need additional space allotted to sidewalks with the addition of street trees and on-street parking to buffer pedestrians from vehicular traffic. The addition of on-street parking for minor thoroughfares will increase activity at the street level and encourage first floor retail use.

BENCH

Figure 4.25 Example Bench

Intent
All benches within River Market should be simplistic in design and made of black iron or metal with a polished appearance. Benches should not include arm rests and should be no longer than 7 ft long. All benches should be securely bolted into place.

Major
- Final placement to be determined by specific design of streetscape.

- No less than 2 benches per block

- Must be placed greater than 100 ft from block corner

- Additional benches required at station loading docks.

Minor
- Final placement to be determined by specific design of streetscape.

- No less than 1 benches per block

- Must be placed greater than 100 ft from block corner

TRASH RECEPTACLE

Figure 4.26 Example Trash Receptacle

Intent
All trash receptacles within River Market should be simplistic in design and made of black iron or metal with polished appearance. Cigarette trays should be incorporated within unit and entire unit should be securely bolted into place.

Major
- Final placement to be determined by specific design of streetscape.

- Trash receptacles should be located in areas with highest use (street corners, near restaurants, etc.) and outside path of travel.

- No less that 3 trash receptacles per block.

- Additional trash receptacles required at station loading docks.

Minor
- Final placement to be determined by specific design of streetscape.

- Trash receptacles should be located in areas with highest use (street corners, near restaurants, etc.) and outside path of travel.

- No less that 2 trash receptacles per block.

PLANTER

Figure 4.27 Example Planter

Intent
All planters within River Market should be simplistic and geometric in design and made of black stone or concrete. Planters may change in appearance throughout block, but can not be taller than 3 ft or exceed widths of 4 feet.

Major
- Final placement to be determined by specific design of streetscape.

- Placement should be outside path of travel.

- No less than 2 planters per block.

Minor
- Final placement to be determined by specific design of streetscape.

- Placement should be outside path of travel.

- No less than 2 planters per block.

PEDESTRIAN LIGHT

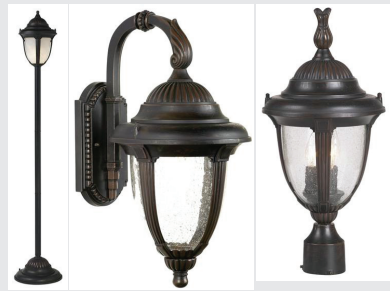


Figure 4.28 Example Pedestrian Light

Intent
All pedestrian lights within River Market should be simplistic in design and made of black iron or metal with a polished appearance. Pedestrian lights should retain historical character with moderately ornate detail. All lights should be within the range of 8 ft - 12 ft in height. Average spacing should be 50 O.C. Pedestrian lights should be used on all sidewalks, parks or plazas.

Major
- Final placement to be determined by specific design of streetscape.

- Placement should be outside path of travel.

- No less than 5 pedestrian lights per block.

Minor
- Final placement to be determined by specific design of streetscape.

- Placement should be outside path of travel.

- No less than 5 pedestrian lights per block.

STREET LIGHT

Figure 4.29 Example Street Light

Intent
All street lights within River Market should be simplistic in design and painted light gray in color. All lights should be above 25 ft in height and maintain night sky standards for Kansas City.

Major
- Final placement to be determined by specific design of streetscape.

- All street lights should be located in center median rather than sidewalks.

- No less than 3 street lights per block.

Minor
- Final placement to be determined by specific design of streetscape.

- All street lights should be located within tree buffers on sidewalk and should be outside path of travel.

- No less than 3 street lights per block.

BIKE RACK

Figure 4.30 Example Bike Rack

Intent
All bike racks within River Market should be simplistic in design and made of black iron or metal with a polished appearance. Bike racks should all be securely bolted into place and should not exceed lengths of 5 ft. Bike racks should be place in areas to promote alternate ways of travel.

Major
- Final placement to be determined by specific design of streetscape.

-Bike racks should be located in areas with highest use (adjacent to retail and office space, near restaurants, etc.) and outside path of travel.

- Additional bike racks required at station loading docks.

Minor
- Final placement to be determined by specific design of streetscape.

-Bike racks should be located in areas with highest use (adjacent to retail and office space, near restaurants, etc.) and outside path of travel.

TREE GRATE

Figure 4.31 Example Tree Grate

Intent
All tree grates within River Market should be simplistic in design and made of black iron or metal with a matte appearance. Tree grates should retain historical character with moderately ornate detail. All lights should be within the range of 8 ft - 12 ft in height. Location should coordianate with street tree placement.

Major
- Final placement to be determined by specific design of streetscape.

- Placement should be outside path of travel.

Minor
- Final placement to be determined by specific design of streetscape.

- Placement should be outside path of travel.

STREET TREE

Figure 4.32 Example Street Tree

Intent
All street trees within River Market should have mature heights of no more than 30 ft. and should not be prone to producing large amounts of natural litter.

Major
- Final placement to be determined by specific design of streetscape.

Minor
- Final placement to be determined by specific design of streetscape.

WAY-FINDING SIGNAGE

Figure 4.33 Example Way-Finding Signage

Intent
All way-finding signage within River Market should be simplistic in design and made of black iron or metal with a polished appearance. All signage will need to be part of a larger district plan and pre-approved by the city. Coordinating colors will be essential for easy understanding. Consider using a simplified icon or logo to identify district as the River Market.

Major
- Final placement to be determined by specific design of streetscape.

- Way-finding signage should be located in areas with highest use (adjacent to light rail line, retail and office space, near restaurants, etc.) and outside path of travel.

Minor
- Final placement to be determined by specific design of streetscape.

- Way-finding signage should be located in areas with highest use (adjacent to light rail line, retail and office space, near restaurants, etc.) and outside path of travel.

SIDEWALK PAVING

Figure 4.34 Sidewalk Paving

Intent
All sidewalk paving within River Market shall be brick pavers or concrete. A variety of brick patterns is encouraged as well as stamped concrete, though concrete should not be dyed in any way. Unified design should be found throughout River Market district, but areas with special interest may be allowed to experiment with other possibilities.

Major
- Final placement to be determined by specific design of streetscape.

Minor
- Final placement to be determined by specific design of streetscape.

PARKING LOT SCREENING

Figure 4.35 Example Parking Lot Screening

Intent
All surface parking in the River Market should be screened from pedestrian paths with vegetative buffers. Shrubs should be evergreen with mature heights of 3 ft and small deciduous trees may be used for color and accent.

Major
- Final placement to be determined by specific design of streetscape.

Minor
- Final placement to be determined by specific design of streetscape.

CROSSWALKS

Figure 4.36 Crosswalks

Intent
All crosswalks in the River Market should be a minimum of 4 ft wide and be easily identifiable as safe for pedestrian use. Brick is encourage is areas of special interest, but typical street paint will also suffice. Crosswalks should be located at each corner of the intersection.

Major
- Final placement to be determined by specific design of streetscape.

Minor
- Final placement to be determined by specific design of streetscape.

SIGHT LINES FROM LIGHT RAIL

Intent
Buildings adjacent to light rail line should maintain clear sight lines to transit route. Increased visibility to transit will increase business opportunities and reinforce the success of development surrounding the light rail. Signs for both office and retail should clearly visible, and be of an appropriate size to be read from a distance of 40 ft.

Major
- Final placement to be determined by specific design of streetscape.

Minor
- Final placement to be determined by specific design of streetscape.

MAINTENANCE

Intent
City maintenance should be provided to a certain degree for all public space in River Market. If a group of individuals who reside in the area would prefer to undertake the maintenance for the River Market, they should be fairly compensated for their efforts.

Major
- Streets and sidewalks should be swept at a minimum of once per month and cleared of all debris.

- All street trees and vegetation in planters should be trimmed and kept neat.

- Planters should be planted with perennials once each spring.

Minor
- Streets and sidewalks should be swept at a minimum of once per month and cleared of all debris.

- All street trees and vegetation in planters should be trimmed and kept neat.

- Planters should be planted with perennials once each spring.

BUILDING WALLS

Figure 4.37 Example Building Walls

Intent

Buildings in the River Market district need to respect the historical significance of the district, but are not bound by restricting preservation laws. A variety of materials is encouraged, but all materials should reflect a permanence after construction. A datum (whether a change in materials, a cornice, etc.) should be present between the first and second floor of each building. No more than 2 materials can be used on the facade of a single building and all transitions must be horizontal.

Townhouse, Low-Rise, Mid-Rise

- Buildings may be between 2 and 4 stories in height.

High-Rise, Parking Structure

- Buildings may be between 5 and 8 stories in height.

ROOFS

Figure 4.38 Example Roofs

Intent
All roofs in the River Market should be either pitched or flat. Green roofs are strongly encouraged and should be visible from street if possible.

Townhouse, Low-Rise, Mid-Rise
- Roofs must appear pitched from street level, but a false roof may be used to hide fans and vents.

-Building utilities can not be visible from the street.

High-Rise, Parking Structure
- Roofs must be flat roofs. Exceptions may occur for iconic buildings.

-Building utilities can not be visible from the street.

DOORS & WINDOWS

Figure 4.39 Doors & Windows

Intent
Doors and windows in the RIver Market define the small details of a building, making it uniquely identifiable.

Townhouse, Low-Rise, Mid-Rise
- All service doors and garages must be located in the exterior of the building and not accessible by the public sidewalk.

- All masonry buildings need to have appropriate linels and sashes above all doors and windows.

- All windows may be set back minimum of 3 in. from exterior wall to create a shadow and doors will have a minimum set back of 6 in.

High-Rise, Parking Structure
- All service doors and garages must be located in the exterior of the building and not accessible by the public sidewalk.

- All masonry buildings need to have appropriate linels and sashes above all doors and windows.

SIGNAGE

Figure 4.40 Example Signage

Intent
All signs should be made of durable material and mounted directly to the surface of the building but in varying locations. Signs should be illuminated at night and visible to both pedestrians and vehicle passengers.

Townhouse, Low-Rise, Mid-Rise
- Signs will be reviewed by the River Market Business Associations on a case by case basis.

- Signs for street level retail should be located within 20 feet of entrance to business.

-Signs to advertise use on upper levels can not be located below the 2nd story.

High-Rise, Parking Structure
- Signs will be reviewed by the River Market Business Associations on a case by case basis.

- Signs for street level retail should be located within 20 feet of entrance to business.

- Signs to advertise use on upper levels can not be located below the 2nd story.

AWNINGS & CANOPIES

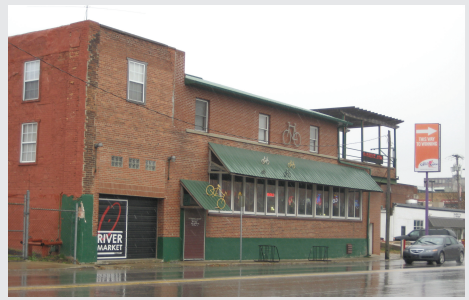


Figure 4.41 Awnings & Canopies

Intent
All awnings and canopies in the River Market are only permitted at street level. Awnings must be triangular in section, but may extend up to 5 ft over sidewalk. Awnings can not drop lower than 7 ft and can not be mounted higher than 11 ft.

Townhouse, Low-Rise, Mid-Rise
- Awnings will be reviewed by the River Market Business Associations on a case by case basis.

High-Rise, Parking Structure
- Awnings will be reviewed by the River Market Business Associations on a case by case basis.

BUILDING ENVELOPES

Figure 4.42 Building Envelope

Intent
Building envelopes in the River Market district are specified to reinforce major pedestrian walkways without inhibiting necessary service vehicle access.

Townhouse, Low-Rise, Mid-Rise
- Building setbacks will be a minimum of 11 ft. from the back of curb of all major and minor thoroughfares, but can not exceed 15 ft.

- Interior parcel edges abutting alleys have a minimum setback of 5 ft, but interior parcel edges abutting neighboring buildings will be allowed 0 ft of setback if approved by both the River Market Business Association and the adjacent neighbor.

Highrise, Parking Structure
- Building setbacks will be a minimum of 11 ft. from the back of curb of all major and minor thoroughfares, but can not exceed 15 ft.

- All interior parcel edges abutting alleys have a minimum setback of 5 ft.

PRESERVATION

Figure 4.42 Example Preservation

Intent
Several historic buildings are located within the River Market district and those identified on the roster made by the Historic Preservation Society will be expected to follow all enforced rules. Historic art murals found in the River Market district should be preserved at all costs.

the district

Figure 4.43 Study Area Location Map

The light rail station at Grand Ave and 3rd street was selected as a special study are due it is unique challenges and combination of difficult elements. The design shown here is an example of what development is possible within the previously specified guidelines and is shown to convey the intended character to be upheld with any new development built in the River Market District.

Specific challenges related directly to design of a new station in this location include:

- Road realignment to include 2 lanes of light rail

- The selection of buildings to be demolished due either to new road alignment or dilapidation

- Adequate loading zones for transit passengers, as well as a station which is easy to maneuver through for easy train connections.

- Streetscape design connecting the station to surrounding amenities

- The balance between a mix of surrounding uses.

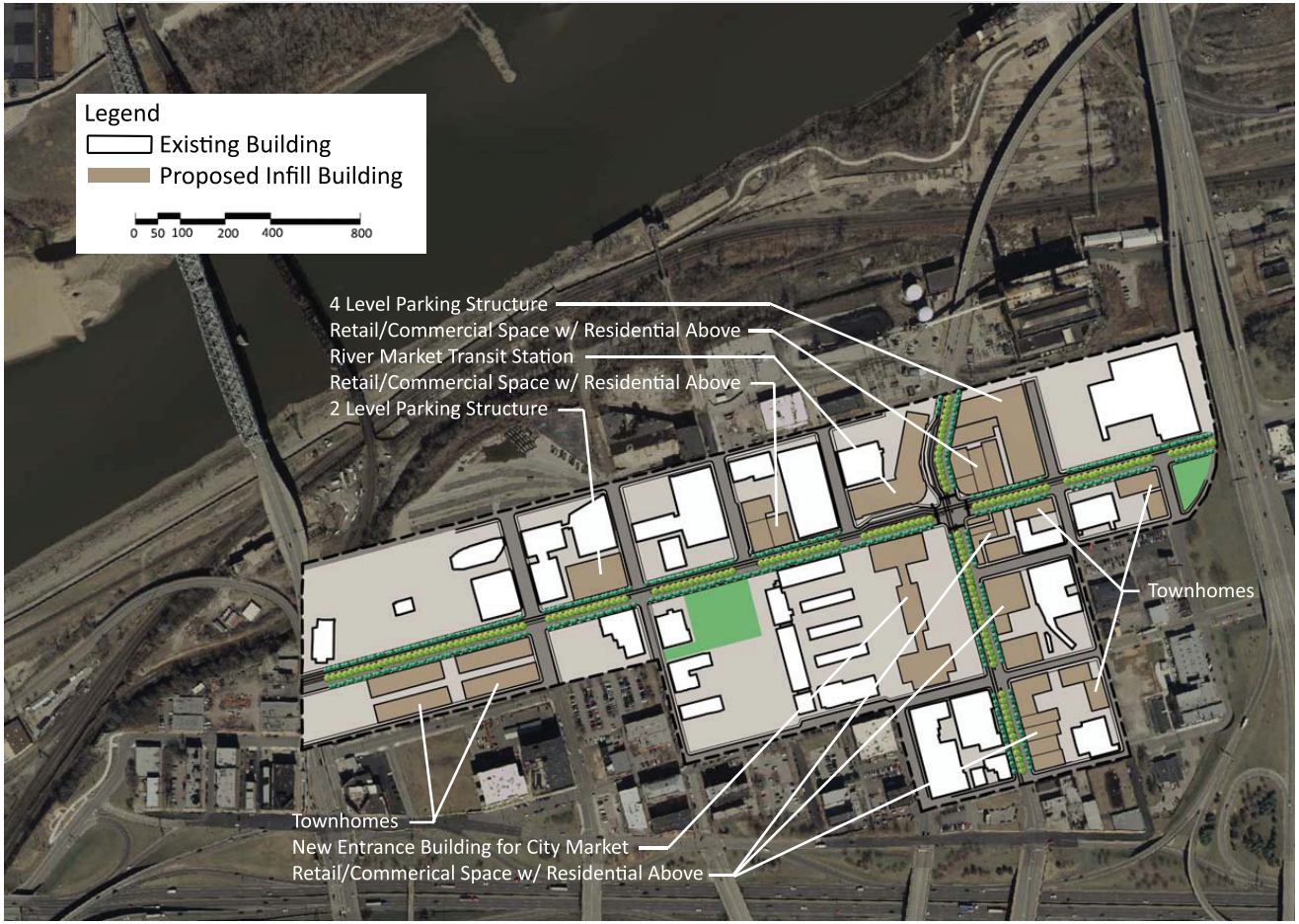


Figure 4.44 Master Plan of Light Rail through River Market

This proposed master plan for light rail implementation in the River Market district as well as accompanying supporting development begins to express the potential for infill development and enhanced pedestrian experience.

By first re-aligning the roads to accommodate light rail, decisions about existing buildings within the proposed right-of-way must be made. All buildings selected for demolition with this plan are either already vacant or in need of extensive renovation.

To support the light rail, the design guidelines specified in this document were then referenced for background information and analysis , then implemented to result in the correct mix of uses. Only then could details such as the streetscape design and building material be chosen to blend in with and maintain the rich existing character of the River Market.

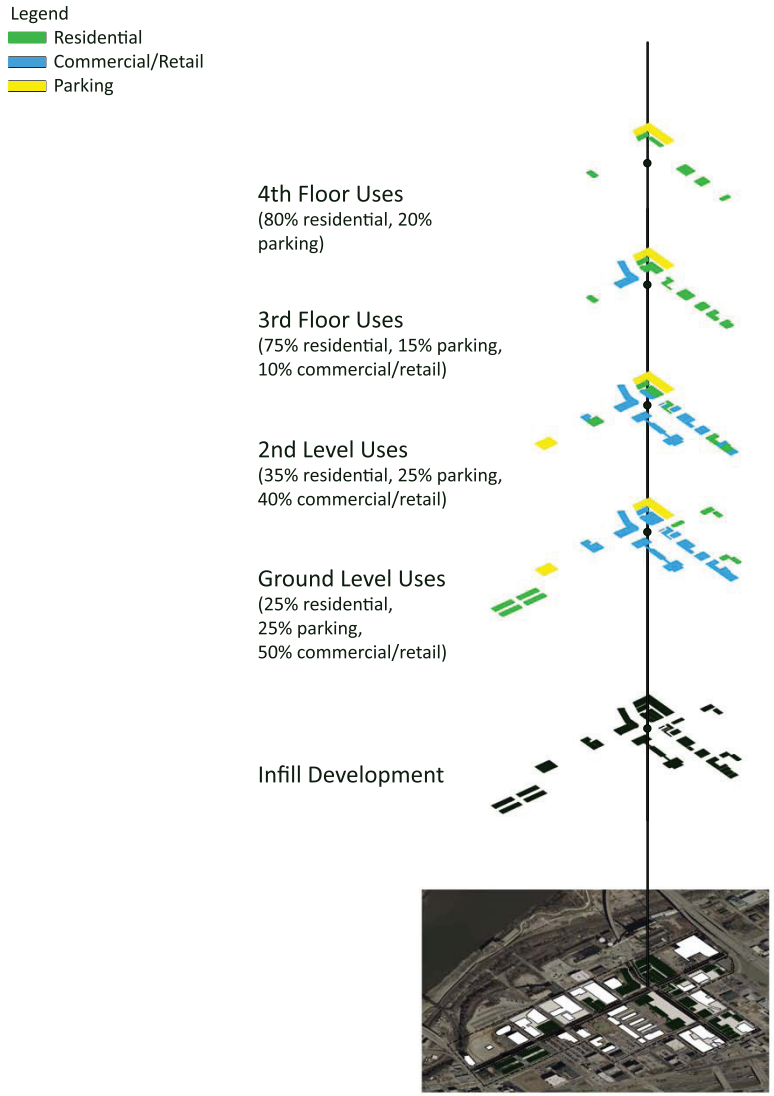


Figure 4.45 3D Diagram of Mixed Uses throughout River Market

This diagram illustrates the overall mix of uses proposed in this document to better begin to understand the balance which must be struck to maintain such a neighborhood feel. New development will radiate from the proposed station, beginning with a higher level of development intensity and gradually ebbing into a higher amount of low-rise and mid-rise buildings around the perimeter.

Figure 4.46 Perspective

Figure 4.46 provides an image of what a pedestrian approaching the station from the opposite side of the intersection will see. A line of retail shops and small restaurants will give the lunchtime transit passenger from downtown a wide selection after only a 2 minute ride.

the future

(photo courtesy of cheezeboy, Flicker, uploaded on April 27, 2006)

Conclusion: Author's Final Comments

A transit district has the distinct opportunity to reinforce a connection between two locations which support each other. In the instance of an entire transit systems, these districts will forever be connected and rely on each other for success.

The impact this choice can have on areas such as the River Market has the potential to raise the quality of life for both residents and the work force located in those areas. Kansas City's downtown development initiative is the first step in bringing these changes about.

While the River Market is undeniably under-utilized at the moment, its opportunities are accompanied by many obstacles. The historic buildings in the River Market are going to require large sums of money to renovate and preserve, not to mention the upgrades in general public infrastructure, such as water and sewer, that the public will need to fund along with the addition of the light rail track. The biggest challenge with designing any district is the careful balance act required by the designer to weigh all viewpoints and determine priority and reason.

The process for this study was not direct, but allowed for a great deal of exploration and discovery. As a student interested in understanding more about the planning process, this opened my eyes to the challenges planners face daily. Large scale projects bring with them enormous responsibility and huge challenges.

Light rail implementation in Kansas City can unite this bi-state metropolis and give the citizens and tourists a reason to refocus their attention on the core of their city. Beginning with a single 14-mile line may bring about an entirely different way of travel in Kansas City. As one of the only cities of its size left without a major source of public transit completed, it is time for Kansas City to step up to the plate and make the choice to be competitive in a world becoming ever focused on efficient, sustainable means of transport.

appendices

Additional Site Information

Literature Information

District C-3b (intermediate business transitional). Sec. 80-153

(a) *Purpose.* A district C-3b may only be established upon land which adjoins and extends not more than a distance of one-half mile from the boundary of a district C-4 and is designed primarily to permit a transitional height provision for multiple-family dwellings and commercial buildings which will support and complement the uses in the central business district. A district C-3b shall consist of not less than six gross acres and shall be related to a plan of redevelopment or rehabilitation. The city plan commission shall determine that the plan is consistent with the development of the city as a whole.

(b) *Use regulations.*

(1) In district C-3b, no building or land shall be used, and no building shall be erected, altered or enlarged, which is arranged, intended or designed for other than a use or accessory use permitted in districts R-4, R-5, C-1, C-2, C-3a1 and C-3a2, inclusive, and as provided in subsection (b)(2) of this section.

(2) Detached residential buildings for one-family, two-family, three-family or four-family occupancy shall be prohibited in this district.

(c) *Height, bulk yard and area requirements.* In district C-3b, the height and bulk of buildings, the minimum dimensions of lots and yards and the minimum lot area per family permitted on any lot shall be as follows:

(1) *Height regulations.*

a. Apartment buildings, apartment hotels and hotels shall not exceed 12 stories or 164 feet in height, whichever is less, except as otherwise provided in subsection (c)(2) of this section.

b. Office buildings, where 55 percent or more of the total gross floor area of the building is devoted to office use, shall not exceed eight stories and shall be not more than 96 feet in height, except as otherwise provided in subsection (c)(2) of this section.

c. Any other use permitted in district C-3b shall not exceed six stories and shall not exceed 75 feet in height, except as otherwise provided in subsection (c)(2) of this section.

(2) *Building bulk regulations.* In order to provide for flexibility of design and to permit higher buildings in this district without increasing the maximum volume or bulk of any building as permitted by this section, the following exception to the height regulations may be permitted and the following bulk regulation is established:

a. Any use enumerated in subsections (c)(1)a and b of this section may exceed the maximum height limitations as set forth in such subsections; provided, however, that the total gross cubical content in the building shall not exceed the total gross cubical content as permitted by subsection (c)(2)b of this section.

b. The total bulk or volume of any building permitted in this district shall be governed by the gross cubical content of the building as permitted by the maximum height and the minimum yard regulations as set forth in this section. Gross cubical content of any building shall be computed on the basis of the outside dimensions of the building and between the mean grade and the roof.

(3) *Yard regulations.*

a. *Front yards.*

1. No front yard shall be required for any use permitted in this district except as provided in subsections (c)(3)a.2 and 3 of this section.

2. Office buildings shall have a front yard with a minimum depth of ten percent of the depth of the lot, but not to exceed ten feet. Any accessory off-street parking structures or areas located on the premises with an office building shall not extend forward of the required front building line for such office building.

3. All residential structures, including apartment buildings, apartment hotels and hotels, and buildings

used for mixed commercial and residential occupancy, shall have a front yard with a minimum depth of 15 percent of the depth of the lot, but such yard need not exceed 20 feet. Any accessory off-street parking structures or areas, located on the premises with the uses enumerated in this subsection a.3, shall not extend forward of the required front building line for such use.

b. *Side yards.*

1. No side yards shall be required for any use permitted in this district except as provided in subsections (c)(3)b.2, 3 and 4 of this section.

2. All one-story, two-story or three-story residential structures, including apartment buildings, apartment hotels and buildings used for mixed commercial and residential occupancy, shall have a minimum side yard equal to ten percent of the width of the lot, but such yard shall not be less than six feet and need not exceed eight feet. When such buildings are more than three stories in height, one additional foot shall be required for each story above three stories, in addition to the minimum side yard.

3. All residential structures as enumerated in subsection (c)(3)b.2 of this section, office buildings and accessory off-street parking facilities, when situated on a corner lot, shall provide a side yard along the side street property line equal to 50 percent of the front yard required in this section for any buildings with an established front yard on the same side street within the same block, unless such buildings are separated from the corner lot by buildings with no front yard requirement. In any case, a minimum side yard six feet in width shall be provided along the side street property line of a corner lot for uses enumerated in this subsection b.3.

4. Off-street parking areas located on the premises with any residential structure, including apartment buildings, apartment hotels, hotels, office buildings and buildings used for mixed commercial and residential occupancy, shall provide a minimum six-foot setback from any side property line adjoining a lot occupied by one of the uses enumerated in this subsection. Any of these uses, when located on adjoining lots with common side lot lines, may jointly provide for off-street parking areas which extend to the common side lot line.

c. *Rear yards.*

1. No rear yards shall be required for any use permitted in this district, except as otherwise provided in subsection (c)(3)c.2 of this section.

2. All residential structures, including apartment buildings, apartment hotels and hotels and buildings used for mixed commercial and residential occupancy, shall provide a rear yard equal to 25 percent of the depth of the lot, but such yard need not exceed 25 feet. The area occupied by a detached accessory building shall not exceed 40 percent of the area of the rear yard.

3. On through lots, the rear yard shall be regarded as a front yard, and the rear yard regulation in this case shall be the same as required for front yards as provided by this section.

4. Off-street parking structures or areas located on the premises with any residential structure, including apartment buildings, apartment hotels and hotels and buildings used for mixed commercial and residential occupancy, shall provide a minimum six-foot setback from any rear property line adjoining a lot occupied by one of the uses enumerated in this subsection; provided, however, that any of these uses, when located on adjoining lots with common rear lot lines, may jointly provide open off-street parking areas which extend to the common rear property line. Where any alley forms the rear property line, no setback from the rear lot line is required for parking areas or parking structures.

(4) *Lot width.* For all residential structures, including apartment buildings, apartment hotels, hotels and buildings used for mixed commercial and residential occupancy, the minimum lot width requirements shall be 50 feet.

(5) *Lot area.* No building shall be erected or altered on a lot which makes provision for less than the following number of square feet of lot area:

a. For any permitted residential occupancy, including conversion of existing residences, other than uses enumerated in subsections (c)(5)b, c and d of this section, a minimum lot area of 6,000 square feet shall be provided. One thousand additional square feet shall be provided for each family in excess of four families.

b. For row houses, 1,000 square feet per family shall be provided.

c. For apartment houses, apartment hotels and buildings used jointly for business and residence purposes, which do not exceed 12 stories in height, 350 square feet per family shall be provided. For further limitations on buildings used jointly for hotel and apartment house use or for business and residence purposes, see subsections 80-250(6)a and b.

d. For apartment houses, apartment hotels and buildings used jointly for business and residence purposes which exceed 12 stories in height and in which the greatest floor area of any one of the several floors or the ground plan of the structure is less than 50 percent of the total lot area, the following minimum lot area for each dwelling unit shall be provided:

1. For one-room efficiency units or those dwelling units without a separate bedroom, there shall be 250 square feet of lot area per dwelling unit.

2. For those dwelling units providing one separate bedroom, there shall be 300 square feet of lot area per dwelling unit.

3. For those dwelling units providing two or more separate bedrooms, there shall be 350 square feet of lot area per dwelling unit.

(6) *Parking and loading regulations.*

a. For all residential structures, including apartment buildings, apartment hotels and hotels, and for portions of any buildings used for residential occupancy, parking and loading regulations shall be the same as provided in section 80-444.

b. For any other uses, off-street parking shall be provided as required by section 80-444, plus an additional 100 percent of that requirement.

c. Off-street loading regulations for any use in district C-3b shall be the same as required in section 80-445.

(7) *Sign regulations.* See section 80-220.

(Code of Gen. Ords. 1967, § 39.153; Ord. No. 65079, 2-8-90

District M-1 (light industry). Sec. 80-180.

(a) *Use regulations.* In district M-1, no building or land shall be used and no building shall be erected, altered or enlarged, which is arranged, intended or designed for other than one of the following uses:

(1) Any use permitted in district C-3a1.

(2) Animals:

a. Chicken batteries or brooders.
b. Creameries.
c. Meat processing (no slaughtering).
d. Milk bottling or central distribution stations.
e. Poultry killing or dressing.
f. Stables, riding.
g. Veterinary hospitals.
h. Kennels provided that all buildings and pens shall be located not less than 200 feet from any residentially zoned district.

(3) Entertainment facilities:

a. Baseball parks.
b. Children's or adult amusement parks.
c. Carnivals.
d. Circuses.
e. Drive-in theaters, under the same conditions as required in district C-3a1.

(4) Food or beverage processing:

a. Bottling works.
b. Brewing or distilling of liquor.
c. Canning or preserving factories.
d. Cold storage plants.
e. Coffee roasting.
f. Cutting or blending of liquors.
g. Manufacture of cigars, cigarettes, snuff or other tobacco products.
h. Manufacture of chewing gum.
i. Manufacture of syrups.
j. Manufacture of fruit juices.
k. Manufacture of extracts.
l. Manufacture of drugs or medicines.
m. Manufacture of ice.
n. Manufacture of ice cream.
o. Manufacture of potato, corn or tapioca chips.
p. Manufacture of sausages.
q. Wineries.

(5) Light manufacturing:

a. Job shop foundries for making brass, bronze or aluminum castings, when the operation is conducted entirely within a building completely enclosed with walls and roof and the nearest point of the building is at least 500 feet from the boundary of an R-1 to C-4 district, inclusive. The activity shall create no regularly recurring noise in excess of 65 decibels as measured at a point 500 feet from the perimeter of the property, and shall create no vibration for a period longer than three minutes in any one hour which is perceptible from any adjoining premises. The activity shall create no smoke exceeding a density of two measured on the Ringelmann Chart published and used by the United States Bureau of Mines, except for a period or periods not exceeding six minutes in any one hour. The activity shall create no unusual dust, fly ash, dirt, odor, noxious gases, heat and unscreened glare which is perceptible on any adjoining premises. The activity shall be free from fire hazard and excessive industrial wastes.

b. Machine shops, when the operation is conducted entirely within a building completely enclosed with walls and roof and the nearest point of the building is at least 500 feet from the boundary of an R-1 to C-4 district, inclusive. The activity shall create no regularly recurring noise in excess of 65 decibels as measured at a point 500 feet from the perimeter of the property, and shall create no vibration for a period longer than three minutes in any one hour which is perceptible from any adjoining premises. The activity shall create no smoke exceeding

a density of two measured on the Ringelmann Chart published and used by the United States Bureau of Mines, except for a period or periods not exceeding six minutes in any one hour. The activity shall create no unusual dust, fly ash, dirt, odor, noxious gases, heat and unscreened glare which is perceptible on any adjoining premises. The activity shall be free from fire hazard and excessive industrial wastes.

c. Manufacture of goods from aluminum, brass, bronze, copper, steel, tin or other metal.
d. Manufacture of goods from bone, leather, paper, rubber, shell, wire or wood.
e. Manufacture of artificial flowers, feathers or plumes.
f. Manufacture of bags.
g. Manufacture of bicycles.
h. Manufacture of boats.
i. Manufacture of blacking, cleaning or polishing preparations.
j. Manufacture of brooms or brushes.
k. Manufacture of buttons and novelties.
l. Manufacture of canvas products.
m. Manufacture of cement products, including cement and cinder blocks.
n. Manufacture of clothing of all kinds.
o. Manufacture of cosmetics.
p. Manufacture of electrical signs.
q. Manufacture of furniture, including upholstering and rebuilding.
r. Manufacture of gas or electric fixtures.
s. Manufacture of mattresses or their renovation.
t. Manufacture of musical instruments.
u. Manufacture of plastics and plastic products, including assembly or processing, when the operation is conducted entirely within a building completely enclosed with walls and roof and the nearest point of the building is at least 500 feet from the boundary of an R-1 to C-4 district, inclusive. The activity shall create no regularly recurring noise in excess of 65 decibels as measured at a point 500 feet from the perimeter of the property, and shall create no vibration for a period longer than three minutes in any one hour which is perceptible from any adjoining premises. The activity shall create no smoke exceeding a density of two measured on the Ringelmann Chart published and used by the United States Bureau of Mines, except for a period or periods not exceeding six minutes in any one hour. The activity shall create no unusual dust, fly ash, dirt, odor, noxious gases, heat and unscreened glare which is perceptible on any adjoining premises. The activity shall be free from fire hazard and excessive industrial wastes.
v. Manufacture of radio or television sets.
w. Pattern shops.
x. Stamping, dieing, shearing or punching of metal not exceeding one-eighth inch in thickness.
y. Welding shops.

(6) Services:
a. Assaying (other than gold or silver).
b. Carpet cleaning.
c. Chemical laboratories.

(7) Storage, entirely enclosed within a wall or cyclone-type fence at least eight feet in height:
a. Asphalt.
b. Brick.
c. Building material.
d. Butane (less than tank car lots).
e. Cement.
f. Clay products.
g. Coal.
h. Contractor's equipment.
i. Cotton.
j. Feed.
k. Fertilizer.
l. Food.
m. Fuel.
n. Gasoline (less than tank car lots).
o. Grain.
p. Gravel.
q. Grease.
r. Hay.
s. Ice.

t. Lead.
u. Lime.
v. Liquor.
w. Lumber.
x. Machinery.
y. Oils.
z. Plaster.
aa. Pipe.
bb. Propane (less than tank car lots).
cc. Roofing.
dd. Rope.
ee. Sand.
ff. Stone.
gg. Tar.
hh. Tarred or creosoted products.
ii. Terra cotta.
jj. Timber.
kk. Wine.
ll. Wood.
mm. Wool.

(8) Transportation-related activities:
a. Aviation schools.
b. Body and fender work.
c. Terminals, freight, rail or water.
d. Terminals, truck, provided that all access is from a major thoroughfare and the property is screened by an eight-foot-high fence.
e. Tracks, spur, loading or storage, and freight yards.

(9) Material or waste processing facilities; each of the following must be conducted entirely within a building completely enclosed with walls and roof with an eight-foot solid fence erected along all property lines adjacent to properties zoned residential:
a. Auto wrecking.
b. Junk handling (yard).
c. Materials recovery facility.
d. Used tire facility.

(10) Miscellaneous:
a. Cold storage plants.
b. Electroplating.
c. Forging.
d. Galvanizing.
e. Monument or marble works, finishing and carving only, and excluding stonecutting.
f. Oil compounding or barreling.
g. Spray painting or paint mixing.
h. Wholesale produce markets.

(11) Accessory uses, the same as for district C-3a1.

(b) *Height, yard and area regulations.* In district M-1, the height of buildings, the minimum dimensions of lots and yards, and the minimum lot area per family permitted upon any lot shall be as follows, provided that buildings erected for dwelling purposes exclusively shall comply with the front, side and rear yard requirements of district R-4:

(1) *Height.* Buildings or structures shall not exceed six stories and shall not exceed 75 feet in height.

(2) *Front and side yards.*
a. There need be no front or side yard in this district, except when the district abuts or adjoins a district R-1, R-2, R-3, R-4, R-4-O, R-5 or R-5-O within the same block and on the same side of the street. Provided this situation occurs, and the majority of the buildings or lots in the residential district face on the street, there shall be a setback from the street for any building in the industrial district equal to one-half of the front yard requirement for the abutting or adjoining residential district as given under the height, yard and area regulations for that district; and, when the side property line of residential property forms the greater portion, at least 70 percent of the street property line in the residential district, there shall be a setback in the industrial district equal to the side yard requirement for the residential district as given in paragraph 2 or 3 under the height, yard and area regulations for that district, but such setback need not be more than eight feet.
b. There shall be a side yard along the side line of a property in the industrial district which abuts, adjoins or is within eight feet of a boundary of a residential district, equal to eight feet measured from the residential district boundary line.

(3) *Rear yards.*
a. The rear yard for business and industrial buildings shall be at least three inches in least dimension for each foot of height of the building at any given level, but must be at least four feet. Where there is an alley, the rear

yard shall be measured to the center of the alley. Where the rear yard abuts or adjoins a residential district R-1, R-2, R-3, R-4, R-4-O, R-5 or R-5-O, it shall be at least ten feet in depth. Within 50 feet of the nearest street, no rear yard is required where a rear line of a lot zoned for business or industry abuts or adjoins the side or rear line of a lot zoned for business or industry.

b. An accessory building shall be allowed in the rear yard referred to in this subsection, but shall be kept at least four feet from the rear and side lot lines unless there is an alley. Where there is an alley, it may extend to the property line along the alley. On a corner lot, the accessory building shall be set back at least 15 feet from any street line.

(4) *Lot area.* No building, to be used wholly or partially for dwelling purposes, shall be erected or altered on a lot which makes provision for less than the following number of square feet of the lot area:

a. For one- and two-family dwellings, 4,000 square feet.

b. For three-family dwellings, including conversions, 5,000 square feet.

c. For dwellings with more than three families, other than row houses, hotels, apartment houses and apartment hotels, 5,000 square feet, with 1,000 square feet additional for each family over three.

d. For row houses, 1,000 square feet per family.

e. For apartments, apartment hotels, hotels and buildings used jointly for hotel and apartment house uses, or for business and residential purposes, or for industrial and residential purposes, 1,000 square feet per family.

(c) *Parking and loading regulations.* Parking and loading regulations shall be as provided for in sections 80-444 and 80-445.

(Code of Gen. Ords. 1967, § 39.180; Ord. No. 53173, 9-3-81; Ord. No. 910247, 4-4-91; Ord. No. 910686, 10-1-92; Ord. No. 020132, § 1, 3-6-02)

District m-2 (heavy industry). Sec. 80-190.

(a) *Use regulations.* District M-2 is divided into two subdistricts, M-2a and M-2b. The distinction between the two districts is as to use as provided in this section. No building or land shall be used and no building shall be erected for any purpose other than one of the following uses:

(1) Permitted uses with exceptions: Any use permitted in district M-1 shall be permitted, except that no building or structure shall be erected in district M-2b to be used for residential purposes and no existing building or structure shall be converted for additional dwelling units, except hotels, provided that a building or structure to be used as a dwelling for caretakers or guards for any business or industrial establishment shall be permitted.

(2) Animal-related activities:

a. Animal burial grounds.

b. Animal refuges.

(3) Chemical processing:

a. Ammonia, bleaching powder or other chemical plants, other than those listed for district M-3.

b. Assaying.

c. Reclamation of chemicals, other than acids or radioactive materials; provided the operation is conducted entirely within a building completely enclosed within walls and roof, or some other structure approved by the director of health and the director of codes administration, and that, for any chemical regulated by the United States Environmental Protection Agency pursuant to the authority granted by section 6 of the Toxic Substances Control Act (15 USC 2605), the nearest point of the building or structure must be located at least 300 feet from any residentially zoned property, or any dwelling unit, whether vacant or occupied, in existence and not abandoned as of the date of application for a zoning clearance certificate. For the purpose of this subsection, the term "reclamation" shall also include the destruction, detoxification and recycling of chemicals, and the term "acids" shall mean any acid whose pH is equal to or below 2.0.

d. Reducing or refining aluminum, copper, tin or zinc.

(4) Construction-related activities:

a. Asphalt mixing plant.

b. Concrete mixing plant.

(5) Foundries:

a. Brass, bronze or aluminum.

b. Iron or steel.

(6) Manufacturing:

a. Any manufacturing use not heretofore enumerated or included in district M-3.

b. Any manufacturing use heretofore conditionally permitted is permitted without conditions.

(7) Mills:

a. Blooming or rolling.

b. Cider.

c. Feed and flour.

d. Lumber, power saw or planing.

e. Steel.

f. Wire.

(8) Processing:

a. Coal distillation, including manufacture or derivation of byproducts.

b. Coke ovens.
c. Enameling.
d. Sugar refining.
e. Tanning or curing of rawhides or skins.
f. Tar distillation.
g. Wood distillation.
h. Wool scouring.

(9) Railroad-related activity.

(10) Storage of:

a. Butane, gasoline, petroleum or propane.
b. Hides and skins.
c. Iron, tin, junk, paper and rags; provided all storage is carried on within a building completely enclosed with walls and roof or within a yard, enclosed on all sides, except on a side or portion of a side abutting a building, by a wall or a cyclone-type fence, at least eight feet high. The board of zoning adjustment may modify these requirements where a railroad track adjoins or enters the property. There shall be only one opening in the wall or fence facing any public street or alley, for each 200 feet of length. The opening shall not exceed 12 feet in width and shall be provided with a gate or door, which must be kept closed whenever the establishment is closed for business. The nearest point of the property shall be at least 350 feet distant from the boundary of any residentially or commercially zoned district.

(11) Waste processing, provided that the operation is carried on within a building completely enclosed with walls and roof or within a yard, enclosed on all sides, except on a side or portion of a side abutting a building, by a wall or a cyclone-type fence at least eight feet high. The board of zoning adjustment may modify these requirements where a railroad track adjoins or enters the property. There shall be only one opening in the wall or fence facing any public street or alley for each 200 feet of length. The opening shall not exceed 12 feet in width and shall be provided with a gate or door, which must be kept closed whenever the establishment is closed for business. Unless the operation is conducted entirely within a building enclosed with roofs and walls, the nearest point of the property shall be at least 350 feet distant from the boundary of any residentially or commercially zoned district. The following uses are permitted:

a. Auto wrecking.
b. Junk handling (yard).

(12) Miscellaneous:

a. Central station light or power plants.
b. Fish packing.
c. Grain elevators.
d. Haunted houses which are establishments open to the public which provide Halloween-related amusement activities, entertainment or displays, operated in a building.
e. Ore docks.
f. Power forges.
g. Rock crushing and quarrying, including but not limited to the removal, screening, crushing, washing or storage of ore, sand, clay, stone, gravel or similar materials, which may be allowed as a special use permit by the city council after public hearing and recommendation of the city plan commission, subject to the following conditions:

1. Mines or quarry operations shall be located abutting or adjacent to secondary or primary arterial streets capable of handling the expected highway loads of heavy vehicular traffic; provided such requirement may be waived by the city council, upon submission by the applicant of sufficient evidence to demonstrate that the operation abuts or is adjacent to a street which is improved to a width and thickness sufficient to withstand truck traffic, that such street involves a minimum of turning maneuvers, that current and future traffic volume on the street will not be adversely impacted, that present and future development along the access street will not be adversely impacted, and that traffic signalization is appropriate.
2. All aboveground mine or quarry activity shall be located so as to minimize the adverse impact upon surrounding properties.
3. The city council may impose such conditions as to operation, site development, signs, times of operation or any other matter as may be deemed necessary in order that such use shall not materially injure or curtail the appropriate use of neighboring property; shall not jeopardize the public health, safety and welfare; and does not violate the general spirit or intent of this chapter or this section. The special use permit may be revoked at any time by the city council upon notice to the permit holder and after a hearing before the city council when violations of any provision of the Code of Ordinances has occurred. This provision shall not limit the city council from pursuing any other remedies available under the law.

h. Salt works.
i. Stonecutting.

(13) Customary accessory uses.

(b) *Height, yard and area regulations.* In district M-2, the height of buildings, the minimum dimensions of lots and yards, and the minimum lot area per family permitted upon any lot shall be as follows, provided that buildings erected for dwelling purposes exclusively shall comply with the front, side and rear yard requirements of district R-4:

(1) *Height.* Buildings or structures shall not exceed 12 stories and shall not exceed 120 feet in height.
(2) *Front yards.* Same as for district M-1.
(3) *Side yards.* Same as for district M-1.
(4) *Rear yards.* Same as for district M-1.
(5) *Lot area.* Same as for district M-1.

(c) *Parking and loading regulations.* Parking and loading regulations shall be as provided for in sections 80-444 and 80-445.

(Code of Gen. Ords. 1967, § 39.190; Ord. No. 53173, 9-3-81; Ord. No. 56558, 8-29-85; Ord. No. 900624, 1-31-91; Ord. No. 920593, 7-1-92; Ord. No. 910687, 10-1-92; Ord. No. 950111, § A, 5-4-95; Ord. No. 990780, § 1, 9-16-99; Ord. No. 030226, § 1, 5-22-03)

Purpose and intent of URD district (urban redevelopment district). Sec. 80-170.

(a) The purpose of the urban redevelopment district is to encourage and accommodate development and redevelopment of underdeveloped and blighted sections of the city and to encourage the latitude and flexibility in design to ensure the stated purposes of a redevelopment plan.

(b) Planned districts are intended to facilitate the following development objectives:
(1) Encouragement of a more efficient and effective relationship among land use activities.
(2) Preservation and enhancement of natural phenomena and or architecturally significant features.
(3) Enhancement of redevelopment areas to accommodate effective redevelopment.
(4) Assurance of a redevelopment project that will integrate full development of the property and maintain harmonious uses within and without the district.

(Code of Gen. Ords. 1967, § 39.170; Ord. No. 56959, 10-11-84; Ord. No. 961596, § A, 6-26-97)

Cross references: Urban redevelopment, ch. 74.

Conditions for establishment of URD district. Sec. 80-171.

a. No urban redevelopment district shall be established unless and until a property has been designated as a blighted area, a conservation area, or an economic development area and a redevelopment plan has been approved by the city council which includes the property subject to the rezoning as a part thereof. However, designation of a blighted area, a conservation area, or an economic development area and approval of a redevelopment plan may occur simultaneously with the rezoning to district URD which is in conformance with a redevelopment plan approved pursuant to a declaration of a blighted area, or an economic development area. For purposes of this district, the declaration of blighted area, conservation area, or an economic development area shall be pursuant to the provisions of the Land Clearance for Redevelopment Law (RSMo 99.300), Real Property Tax Increment Allocation Redevelopment (RSMo 99.800), Urban Redevelopment Corporations Law (RSMo ch. 353) or Planned Industrial Expansion Authority (RSMo 100.300). Further, the redevelopment plan as referenced in this section shall be that plan required by such statutory sections.

b. An application for an urban redevelopment district under the declaration as a blighted area, a conservation area or an economic development area under the Real Property Tax Increment Allocation Redevelopment Act may only be filed with the city after the Tax Increment Financing Commission has provided the 45-day notice of public hearing provided for under RSMo 99.830.3. the city plan commission shall conduct a public hearing on the application for an urban redevelopment district but shall not vote on said application until a recommendation has been made to the city council from the Tax Increment Financing Commission regarding approval of the Tax Increment Financing Plan or the designation of a developer to implement a redevelopment plan affecting the property.

(Code of Gen. Ords. 1967, § 39.171; Ord. No. 56959, 10-11-84; Ord. No. 65482, 5-24-90; Ord. No. 931085, 10-14-93; Ord. No. 961596, § A, 6-26-97)

Application for establishment of URD district. Sec. 80-172.

(a) Any governmental agency or corporation having the power of eminent domain or an owner or owners of assembled properties or successors in interest or designated developers or an applicant for designation as a developer under RSMo 99.800, may submit an application for an urban redevelopment district subject to the procedure set forth in sections 80-350 and 80-360.

(b) An application for an urban redevelopment district shall be accompanied by a development plan. The plan shall include the following information:
(1) Name of development.
(2) Name, address and phone number of person or firm that prepared the plan.
(3) Date plan prepared and any revision dates.
(4) Graphic and written scale of one inch equals 10, 20, 30, 40, 50, 60 or 100 feet. A scale of one inch equals 200 feet may be used for applications consisting of over 200 acres.
(5) A legal description of the property.
(6) A general plan for landscaping, signage, lighting and architectural features, if such architectural features are critical to the development of the project site.
(7) North arrow.
(8) Location map identifying boundaries of property in relation to major streets.
(9) Existing property lines identifying point of beginning and distances and bearings of property lines, consistent with the submitted legal description of the application.
(10) Identification and written dimensions of the width from centerline and total width of existing perimeter and

annual report on the ridesharing/public transit program to the director of the department of city development on a yearly basis. The report shall contain information on total number of employees, number of employees using public transit, number of employees ridesharing, number of parking spaces provided for the building, and number of spaces reserved for fleet vehicles. Any other information on parking, leased or otherwise, provided for use by customers and employees, as well as data on employees who may not be located within the building on a full-time basis, shall be provided.

(2) Parking and loading facilities shall be located within the development area and at a site reasonably related to the intended use which the parking and loading is to serve.

(3) Parking facilities need not be in the same ownership as the intended uses which they are intended to serve; provided, however, that adequate provisions are made for the availability of the parking for the intended uses in a recorded document.

(4) All parking and loading areas shall be surfaced and screened in accordance with the provisions in section 80-444.

(c) *Lighting.* All parking and loading facilities and areas of general usage shall be appropriately lighted to provide for safe and orderly usage thereof. Where such public areas are located adjacent to residential uses, all light fixtures shall be so arranged as to avoid glare on adjoining premises.

(d) *Outdoor storage.* No outdoor storage of any materials or any items shall be permitted unless the storage is delineated on the development plan and appropriate screening is provided.

(Code of Gen. Ords. 1967, § 39.173; Ord. No. 56959, 10-11-84; Ord. No. 961644, § A, 1-23-97)

Site plan for development in URD district. Sec. 80-175.

(a) No building permit shall be issued for development in the URD district unless and until a site plan has been approved by the director of city development.

(b) The site plan shall include the information required on the development plan, and additionally include specific information regarding the location of the use on the subject property defined by legal description, precise setback distances, specific method of lighting and landscaping, and, if included in the development plan, the details regarding architectural character. The director of city development is authorized to require any further information necessary to effectuate the purpose of the development plan.

(c) If the director of city development determines that the site plan conforms to the requirements of the development plan as approved by the city council, the director shall so notify the director of codes administration. If the director of city development determines that the site plan does not conform to the requirements of the approved development plan, the director shall notify the developer in writing of the points which do not conform to the approved development plan. Upon receipt of the notice, the developer shall have the following options:

(1) Correct the site plan to conform to the approved development plan;

(2) File an amendment pursuant to section 80-176; or

(3) File an appeal for a hearing with the city plan commission. The hearing shall not require a public notice as provided in this chapter and shall be limited to a determination of the conformance of the site plan with the development plan. The decision of the city plan commission may be appealed as provided for district CP final plans, in section 80-110(d).

(d) Failure to comply with any of the specifics detailed on the site plan and the actual construction and further use of the property shall be considered a violation of this chapter and subject to action thereunder.

(e) Certain exemptions exist for the issuance of a building permit without a site plan, as follows:

(1) A building permit may be issued for any structure or use within the district provided a certificate of legal nonconformance has been issued, pursuant to section 80-230.

(2) The owner of any property which is the subject of eminent domain within the district but which has not been acquired by the condemning authority shall have the right to continue to use the property for any use permitted within the district classification existing immediately preceding the adoption of the URD district. At the time of request for a permit, the property owner, or his agent or tenant, shall file an affidavit with the director of codes administration stating that the property owner is not in any way affiliated with the condemning authority and further has no intention of securing any of the benefits provided under the redevelopment plan approved pursuant to the declaration of blight.

(Code of Gen. Ords. 1967, § 39.175; Ord. No. 56959, 10-11-84)

Amendments to development plan for URD district. Sec. 80-176.

(a) In the course of carrying out any part of the development plan for a URD district, the developer may submit a revised development plan which, for purposes of section 80-355, shall be considered a zoning change.

(b) If any development plan covering all or a portion of the land so rezoned to district URD shall be abandoned, or if any stage thereof shall not be completed within the time therein provided and is no longer feasible for the proposed development, or if the declaration of blight area, a conservation area, or an economic development area required by section 80-171 is declared null and void by any court of competent jurisdiction, the director of city development may recommend that the area be rezoned to its former or other appropriate classification. No such amendment, however, shall be effective until approved by the city council after recommendation by the city plan commission.

(Code of Gen. Ords. 1967, § 39.176; Ord. No. 56959, 10-11-84; Ord. No. 60150, 10-30-86; Ord. No. 961596, § A, 6-26-97)

interior streets, other rights-of-way, and existing easements.

(11) Identification and written dimensions of the total width of pavement of existing streets.

(12) Identification and written dimensions of additional street right-of-way to be dedicated and width of any proposed interior streets and easements.

(13) Location and written dimensions of the widths of existing or proposed private vehicular access into the property from perimeter streets and location of existing or approved accesses on properties adjacent or opposite the property, with off-set dimension from the centerlines of such streets and private access.

(14) Name of adjacent platted subdivision and identification of lot number and tracts.

(15) Location, identification and dimension of proposed lots and tracts.

(16) Location of proposed buildings and structures and existing buildings and structures to remain, with written dimensions of setback form proposed street right-of-way and adjacent property lines, dimensions of building width and length, number of floors, gross floor area per floor, and total building area. Residential buildings shall identify, in addition, the number of dwelling units per floor and the total number of dwelling units.

(17) Identification of proposed or existing use or uses within each building, building entrances and exits, docks or other service entrances, outdoor storage and sales areas, and other paved areas.

(18) Location of proposed or existing parking spaces, aisles, and drives with written setback dimensions from proposed street rights-of-way and adjacent property lines; typical width and length of parking spaces; number of parking spaces per row; and width of parking aisles.

(19) Location and identification of proposed and existing signs to be retained, with written setback from proposed street right-of-way, and type, height and area of sign. Elevations of freestanding signage to portray this information may be provided on the site plan.

(20) Location and identification of boundaries and phase numbers of the development if proposed to be platted or developed in phases, including the buildings, structures, access and parking areas in each phase.

(21) Existing and proposed topography with contours at an interval of not less than five feet and with approximate first floor elevations of buildings.

(22) Location and identification of any proposed and any existing site features to be retained, including detention areas, retaining walls, and other pertinent site features.

(23) A written legend which utilizes numbers or letters to allow cross reference and includes the following information in the following order:

a. Existing zoning of property and proposed zoning, including types of planned district requested.

b. Total land area in square feet or acre.

c. Land area or acres for existing and proposed street right-of-way.

d. Net land area or acres.

e. Proposed use or uses of each building and structure.

f. Height above grade of buildings and structures and number of floors of each building.

g. Gross floor area per floor and total of each building. Residential buildings shall also include type of dwelling units, number of dwelling units per floor, and total number of dwelling units.

h. Building coverage and floor area ratio.

i. Residential development shall, in addition, identify gross and net density.

j. Ratio of required number of parking spaced for each use and amount of required proposed parking spaces.

k. Commencement and completion dates for each phase.

l. Applications for amendments to development plans shall include a written description of the changes to the approved development plan, including any changes in use, phases, parking, signage or site arrangement.

(24) Any other information necessary for a determination as to the suitability of the plan for the site.

(Code of Gen. Ords. 1967, § 39.172; Ord. No. 56959, 10-11-84; Ord. No. 961596, § A, 6-26-97)

Specific requirements for URD district. Sec. 80-173.

(a) *Use, height, floor area ratio, density, bulk and setback requirements.* The use, height, floor area ratio, number of dwelling units, bulk and setbacks in the URD district shall be those as established on the development plan as approved by the city council, with the following exceptions:

(1) The uses in a URD district shall include residential, commercial or light industrial. No use shall be permitted which is deemed to be obnoxious or heavy industrial in the opinion of the city council after recommendation by the city plan commission.

(2) The height of any building or structure within the proposed district shall be compatible with the land area and overall development, but in no event shall the height exceed the height limits set forth in the airport zoning maps as provided in chapter 6, unless a variance is granted by the board of zoning adjustment pursuant to section 6-80 prior to issuance of a permit.

(3) The floor area ratio shall in no event exceed ten times the total lot area, excluding streets and alleys.

(b) *Parking and loading facilities.*

(1) Parking and loading facilities must be provided at a ratio in accordance with sections 80-444 and 80-445 unless, in the opinion of the city council, after recommendation by the city plan commission, it is determined:

a. That a mixed use as proposed would demand less than the required parking as otherwise provided; or

b. That an agency or corporation which provides to its employees incentives to rideshare and use public transit would demand less than the required parking as otherwise provided. Said agency or corporation shall provide an

River Market Business Directory

ALPHABETICAL (by business)

Building Use	Business	Address	Phone #	Website
Living Space	310 Delaware LLC	306 Delaware	474-1144	
Shopping	All Nations Flag Co.	118 W. 5th	842-8798	http://www.kcflag.com/catalog/indes.php
Attraction/Restaurant	Arabia Steamboat Museum	400 Grand	471-1856	http://www.1856.com
Attraction/Restaurant	Argento Italian Gelato - CM	510 W. 5th St. 100	803-6023	
Business	Arnold Imaging LLC	210 W. 5th St. Suite 203	595-5000	http://www.arnoldimaging.com/content/view/12/26/
Shopping	Babycakes, Inc	108 Missouri Ave.	841-1048	http://www.babycakeskc.com
Business	Blacktop Creative	512 Delaware Suite 105	221-1585	http://www.blacktopcreative.com/
Attraction/Restaurant	Blue Nile Ethiopian Café - CM	510 W. 5th St. 100	283-0990	http://www.bluenilekc.com/
Attraction/Restaurant	Bo Lings Fine Chinese Restaurant - CM	510 W. 5th St. 100	423-8036	http://www.bolings.com/main/home.html
Attraction/Restaurant	Burrito Brothers - CM	510 W. 5th St. 100	842-0152	http://www.burritobrotherskc.com/
Bar/Restaurant	Café Al Dente	412 Delaware	472-9444	
Attraction/Restaurant	Carollo's Italian Deli - CM	510 W. 5th St. 100	474-1860	
Business	Cascade Health Services	510 W. 5th St. 100	269-8952	http://www.cascadestaff.com/cm5/
Attraction/Restaurant	City Market	510 W. 5th St. 100	842-1271	http://www.thecitymarket.org
Attraction/Restaurant	City Market Coffee Company - CM	510 W. 5th St. 100	718-3005	
Business	Clear, LLC	423 Delaware Suite 101	668-1143	http://www.clearkc.com
Business	Clockwork LLC	423 Delaware Suite 102	694-0750	http://www.clockwork-ad.com/
Living Space	Cold Storage Lofts	500 E. 3rd Street	362-7817	http://www.kc-lofts.com/bldgs/coldstorage.htm
Business	Colonial Patterns Inc.	340 W. 5th Street	471-3313	http://www.colonialpatterns.com
Business	Confluence	415 Delaware Suite 400	531-7227	http://www.thinkconfluence.com
Business	Consolidated Development Partners	523 Walnut St	472-4900	http://cdpkc.com
Attraction	Corbin Bronze	201 Wyandotte Suite 102	842-0496	http://www.corbinbronze.com
Restaurant	Delaware Café	300 Delaware	842-0303	http://www.delawarecafe.com
Living Space	Delofts	500 Delaware	842-5800	http://www.delofts.com
Business	Development Initiatives	423 Delaware Suite 101	916-3664	http://www.di-kc.com/
Bar/Restaurant	Dos Hombres	528 Walnut St.	474-4696	http://www.doskc.net

Business	Downtown Council	911 Main Street Suite 110	421-5243	http://www.downtownkc.org/index.aspx
Business	DST Realty	333 W. 11th Street	435-6403	http://www.dstsystems.com/index_noflash.html
Business	Economic Development Corporation	10 Petticoat Lane	221-0636	http://www.edckc.com
Business	Eidson & Partners	507 Walnut 2nd Floor	474-0747	http://eidsonandpartners.com/
Restaurant	Eljays River Market Coffeehouse	412 Delaware	472-5552	http://www.eljays.com
Living Space	Embassy Properties Inc.	410 W. 8th Street	215-0901	http://www.kcloftcentral.com/epi.html
Shopping	Emblazon Gifts	400 Grand	221-1616	http://www.emblazongifts.com/
Business	Evans & Kuhlman LLC	102 East 5th St. Suite 102	799-0330	http://www.evanskuhlman.com/
Business	Evenergy Marketing LLC	524 Walnut Suite 230	421-2341	http://www.evenergy.com
Business	Faultless Starch	510 Walnut	329-1328	http://www.faultless.com/
Bar/Restaurant	Garozzos	526 Harrison	421-3505	http://www.garozzos.com/home.php
Business	Gooch Brake & Equipment Co.	506 Grand Blvd.	421-3085	http://www.goochbrake.com
Attraction/Restaurant	Habashi House Middle Eastern Café - CM	510 W. 5th St. 100	421-0414	http://www.habashihouse.com/
Business	Hammer Brothers	407 Grand Blvd.	842-7290	http://www.hammerbrothers.com/
Bar/Restaurant	Harry's Country Club	112 E. Missouri Ave	421-3505	http://www.kansascitymenus.com/harryscountyclub
Attraction/Restaurant	Hien Vuong Vietnamese Restaurant - CM	510 W. 5th St. 100	842-1020	
Business	HOK Sport	300 Wyandotte Suite 300	221-1500	http://www.hoksport.com
Business	Index Store Fixture Co.	521 Main Street	842-9122	
Business	Integrative Health Center	317 Delaware	282-8400	
Attraction	Isle of Capri	1800 E Front Street	855-4180	http://www.isleofcapricasino.com
Business	Jane Mobley Associates	116 W. 3rd St	472-1930	http://www.janemobley.com
Attraction/Business	Josh Solar Photo - CM	510 W. 5th St. 100	522-8010	http://www.joshsolarphoto.com/
Business	Kansas City Light & Fixture Inc.	525 Walnut	842-4201	http://www.kclightandfixture.com
Business	Kay-See Dental Mfg.Co.	124 E.Missouri Ave.	842-2817	
Attraction	KC Artist Coalition	201 Wyandotte	421-5222	http://www.kansascityartistcoalition.org
Living Space	KC Loft Space	200 Walnut Street Suite 102	474-5638	http://www.kcloftspace.com/
Living Space	Latshaw Development	524 Walnut Suite 310	842-9813	http://latshawdevelopment.com/images/shape4.swf
Restaurant	Le Fou Frog	400 E. 5th Street	474-6060	http://www.kansascitymenus.com/lefoufrog/
Business	Lee Mathews Equipment	318 Broadway	221-0650	http://www.leemathews.com
Attraction/Restaurant	Lollicup-Kansas City - CM	510 W. 5th St. 100	527-0056	http://www.lollicup.com/
Living Space	Mallin/Gibson Real Estate	201 Wyandotte	471-6789	http://www.kcloft.com/about.htm
Living Space	Master Realty Properties	410 W. 8th Street	474-2299	http://www.kcloftcentral.com/mrp.html
Business	Maximus Signs	208 Delaware	556-4703	http://www.rivermarketart.com
Business	Mid-America Merchandising inc.	204 W. 3rd Street	471-5800	http://www.mmipromo.com/
Bar/Restaurant	Minsky Pizza	427 Main St.	421-1122	http://www.minskys.com/
Business	Morgan Group	5606 S. Rice Rd	361-7221	http://www.morgangroup.com/missouri
Business	Nikki Deal Design	401 Wyandotte Suite 401	221-2325	
Business	OConner Law Firm P.C	110 E. 5th Street	842-1111	http://ockclaw.com/index.htm
Business	OGGI Consulting	508 Charlotte	550-7235	
Attraction/Business	Outdoor Design Group - CM	510 W. 5th St. 100	518-8049	
Attraction/Business	Paul Davies Design, Inc. - CM	510 W. 5th St. 100	913-859-0868	http://www.pauldaviesdesign.com/

Business	Peopleworks	210 W. 5th St. Suite 103	471-8555	http://www.theidealoft.com/about.html
Business	PKMR Engineers	521 Walnut St.	268-0934	http://www.pkmreng.com
Business	Planned Ind. Exp. Auth	20 E. 5th Street	474-2227	http://www.edckc.com/home/home.htm
Attraction/Business	Planned Industrial Expansion Authority/ ForeignTrade Zone - CM	510 W. 5th St. 100	474-2227	
Shopping	Planters Seed Co.	513 Walnut Street	842-3651	http://www.plantersseed.com
Business	Police Department	1200 E. Linwood	719-8350	http://www.kcpd.org/
Shopping	Polivka	258 W. 3rd Street	221-2027	http://www.dpolivka.com
Business	Port Authority	10 Petticoat Lane Suite 250	691-2115	http://www.kcportauthority.com
Attraction/Business	Professional Ordering Systems - CM	510 W. 5th St. 100	888-477-7711	
Business	Prudential CREW Commercial	3101 Broadway Suite 300	931-3101	http://www.crrkc.com/
Business	River City Solutions	116 W. 3rd St	300-4357	http://www.rivercitysolutions.com/
Business	River City Studio	116 W. 3rd St	474-3922	http://www.rivercitystudio.com/index.html
Antiques	River Market Antique Mall	115 W. 5th Street	816.221.0220	http://www.rivermarketantiquemall.com
Bar/Living Space	River Market Brewery	500 Walnut	471-6300	http://www.rivermarketbrews.com/id20.html
Business	Robstan Group Inc.	14 West 3rd Street Suite 20	472-8870	http://www.robstan.com/
Business	Rudd Clutch	414 Oak Street	474-9199	
Business	Rumbleset Publishing	258 W. 3rd Street	527-0079	
Business	Scott Fitness Inc.	200 Wyandotte	950-0502	http://www.scottfitness.com/
Business	SE Fox & Company, Inc.	2021 E. 18th St	221-7920	http://se-fox.com/
Business/Shopping	Shabobba International, LLC	425 Washington Suite 109	746-7830	http://shabobba.com/
Bar/Retaurant	Slows Barbecue	20 East 5th St.	471-7427	http://www.slowsbbq.com
Attraction/Restaurant	Succotash Catering & Bruncheonette - CM	510 W. 5th St. 100	421-2807	
Attraction/Restaurant	Tikka House - CM	510 W. 5th St. 100	842-7232	
Business	Trigen - KC	115 Grand Ave	889-4900	http://www.trigen.com/
Business	Tri-State masonry Inc.	316 Oak Street	221-6067	
Business	Troutman-Truster	6500 Overbrook Rd	289-6610	
Bar/Restaurant	Vivace	529 Walnut St	527-0999	http://www.kansascitymenus.com/vivace/
Business	Walnut Street Transcription & Business	507 Walnut Street	421-8348	http://www.wstbs.com
Business	Warner Nease Bost Arch.	517 Delaware	283-3731	http://www.wnbarchitects.com/
Business	Watkins & Co. Real Estate	100 E. 7th Suite 401	421-1130	http://www.watkinsre1.com
Business	Webb Throckmorton and Associates	415 Delaware 2W	842-4300	http://www.webbthrockmorton.com
Attraction/Restaurant	Winslow's City Market Barbeque - CM	510 W. 5th St. 100	471-7427	http://www.kc-bbq.com/

Literature Reviews

WRITTEN REVIEWS (IN CHRONOLOGICAL ORDER)
*B: BOOK A: ARTICLE W: WEB * MAIN SOURCE*
ALL SOURCES

1971 B: THE LAND-USE/TRANSPORT SYSTEM: ANALYSIS AND SYNTHESIS
By W. R. Blunden
Provides general knowledge of the logistics of implementing any transportation system. Gives general knowledge, but not many specifics.

1974 B: RAPID TRANSIT PLANNING STUDY: AN INTERIM REPORT
Compiled by the Kansas City Transit Associates for the Mid America Regional Council
Addresses the various options of adding additional bus and rapid transit options for Kansas City Missouri in combination with existing bus and commuter trains. Includes many bus improvements thought necessary immediately along with long term alternatives.

1975 B: LONG RANGE TRANSIT PLAN: FINAL REPORT
Compiled by the Kansas City Transit Associates for the Mid America Regional Council
Overview and plan for entire Kansas City transportation plan. Addresses existing and potential transportation options including suggested rapid transit corridors and a wealth of tables and charts with projected population, land requirements and capitol costs.

1976 B: LIGHT RAIL TRANSIT: A STATE OF THE ART REVIEW
By the Department of Transportation
Excellent source of information on light rail transit systems. Includes precedents, costs, technical details, city requirements, but does not address surrounding development.

***1979 B: URBAN PLANNING AND PUBLIC TRANSPORT**

Edited by Roy Cresswell

Urban Planning and Public Transport was one of the first major books written on light rail and its impacts relating to development. Although this book is the oldest of my main sources, the information it provides relating to development references examples all over the world and discusses success and failures they were already encountering. Specific items I am taking from this source are: how overlapping transit systems can be effective, the role transit plays in a urban core and appropriate surrounding land uses for stations. This book is an excellent general source for how light rail should be implemented into an urban core, but does not specifically address station transit planning.

1982 B: LIGHT RAIL TRANSIT: PLANNING, DESIGN, AND IMPLEMENTATION

Compiled by the National Academy of Sciences Transportation Research Board

Collection of articles by a range of authors related to the general topic of Light Rail. Topics covered are grouped into the following categories: Overview of Light Rail Transit, Policy and Planning Considerations, Facility Design and Railcar Technology, and Operating Strategies and Issues.

***1997 B: MOVING BEYOND GRIDLOCK: TRAFFIC AND DEVELOPMENT**

By Robert Dunphy for the Urban Land Institute

Moving Beyond Gridlock provides specific information on light rail transit systems that have been in effect for 5 years or more. These in depth case studies provides specific numbers relating to density, land use and floor ratios that will be beneficial to use in my project. Not only does this source look at current benefits to light rail in each city, but address the need for future expansion plans in each place. This reference to future planning provides many solid reasons for why transit station planning is essential to the success of any transit system implementation. This source also provides a general background explaining the benefits to light rail and why the push for light rail began in the mid-1970s and became what it is today.

1999 B: TRANSPORTATION FOR LIVABLE CITIES

By Vukan R. Vuchic

Gives general knowledge of transportation types in various sizes of cities. Provides more detail on funding for light rail transportation and which cities may support such transportation.

***2004 B: DEVELOPING AROUND TRANSIT: STRATEGIES AND SOLUTIONS THAT ORK**

By Robert Dunphy, Robert Cervero, Frederick Dock, Maureen McAvey, Douglas Porter & Carol Swenson for the Urban Land Institute

Developing Around Transit is my primary source for station transit planning. It specifically addresses what I hope to accomplish in Kansas City and gives a

2006 range of recommendations when developing around transit. Not only does it provide current specifics on land use, zoning, cost projections, density requirements but also provides many examples of both successful and failed projects that have been developed around transit. It also addresses

2006 the challenges of developing a transit station in an urban area vs. in a more suburban area which provide very different challenges.

2006 **A: TRANSIT AS A TOOL FOR SHAPING DEVELOPMENT**
By Robert Dunphy in Urban Land
Address public funding of transit development and presents relevant issue of transit shaping all development in America.

2008 **A: THE SPREAD OF TODS**
By Joseph Geller and Stephen Plunkard in Urban Land
Gives information about current cities who are encouraging and supporting development around light rail systems already implemented. Also provides names of specific developments to reference in the future.

2008 **W: WWW.KCLIGHTRAIL.COM**
A forum to respond to current news regarding light rail happenings in Kansas City. Gives the most current information available.

2008 **W: WWW.LIGHTRAILNOW.ORG**
Provides general information on light rail developments around the country. Good for general knowledge, but lacking in specifics.

2008 **W: WWW.KANSASCITYLIGHTRAIL.ORG**
By Kansas City Area Transportation Authority
This web site is provided by the Kansas City Area Transportation Authority and is updated nearly daily. When it comes to specifics relating to the light rail project in Kansas City, this is my best resource. It includes up-to-date articles, discussions, meeting notes and images communicating what is being discussed and decided upon relating to the light rail project in KC.

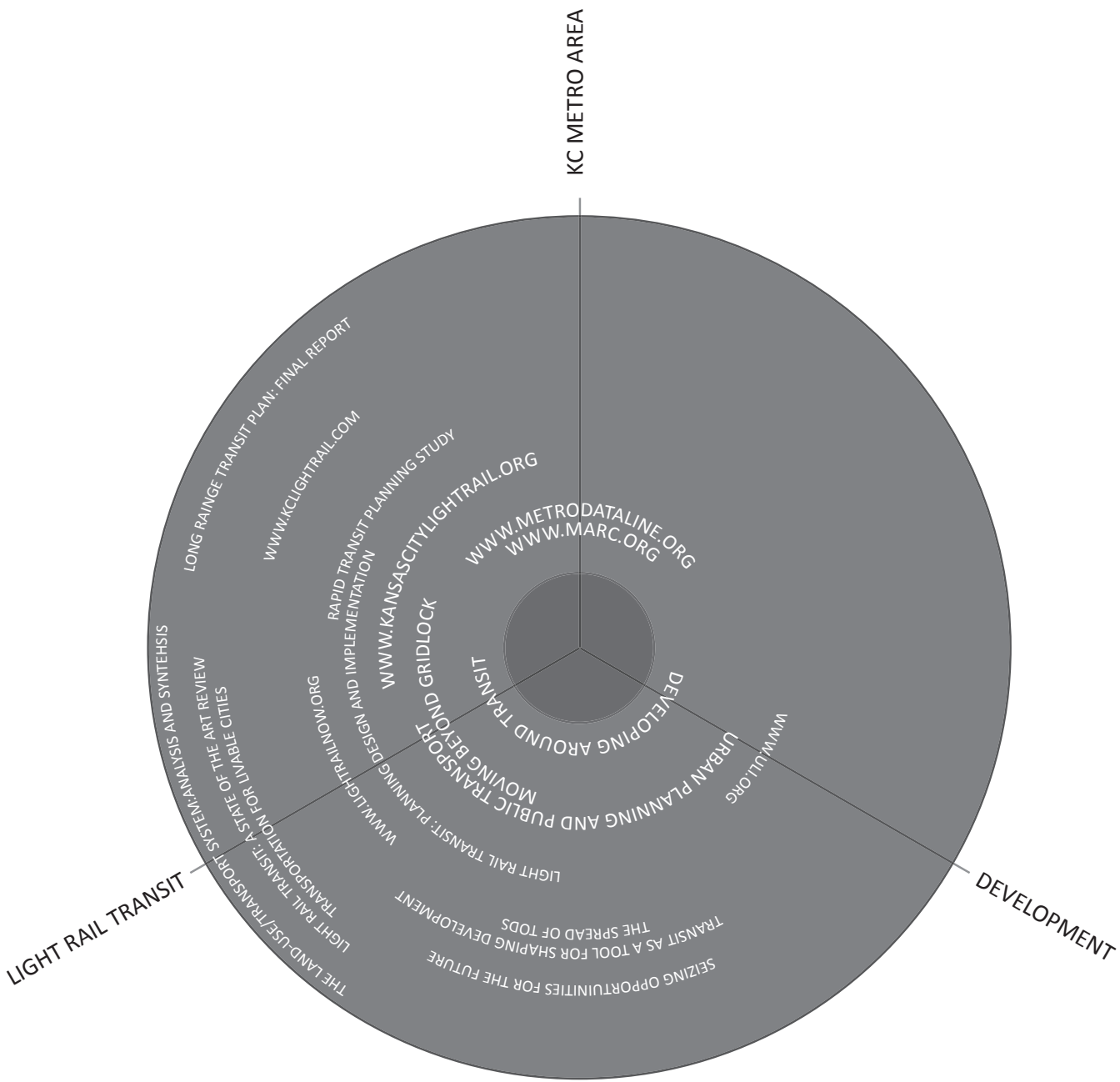
*2008 **W: WWW.MARC.ORG**
By Mid America Regional Council
This is one of two websites which I have pulled almost all of my base material from. I also have a contact at the Mid America Regional council to get any information they may have that is not accessible through their website. Information I have downloaded so far includes, but is not limited to: county/city boundaries, streets, natural systems (hydrology), voting districts, population statistics and major transportation systems.

*2008 **W: WWW.METRODATALINE.ORG**
By Mid America Regional Council
This is the second of two websites which I have pulled base material from. Information I have pulled from this site if related more directly to census information. Combining this census information with base material from www.marc.org is where most of my site analysis will come from. Also found on this website is several metro outlook documents communicating future predicted statistics for Kansas City, based on population projections. This information will be vital to reference, so the decision I make regarding my project will make sense in the future.

2008 **W: WWW.ULI.ORG**
By Urban Land Institute
Provides current articles and applicable current projects that address station transit planning.

Literature Map

This literature map illustrates the three main topics of research pertinant to the project reviewed in this document. Each of the three main topics is represented with a spoke and each reference is located closest to the topic reviewed by the source. Main sources are located toward the center, while less relevant sources are located towards the perimeter.


KC METRO AREA
DEVELOPMENT
LIGHT RAIL TRANSIT
WWW.METRODATALINE.ORG
WWW.MARC.ORG
WWW.KANSASCITYLIGHTRAIL.ORG
WWW.KCLIGHTRAIL.COM
WWW.ULI.ORG
WWW.LIGHTRAILNOW.ORG
DEVELOPING AROUND TRANSIT
URBAN PLANNING AND PUBLIC TRANSPORT
MOVING BEYOND GRIDLOCK
RAPID TRANSIT PLANNING STUDY
DESIGN AND IMPLEMENTATION
LONG RAINGE TRANSIT PLAN: FINAL REPORT
LIGHT RAIL TRANSIT: PLANNING
SEIZING OPPORTUNITIES FOR THE FUTURE
TRANSIT AS A TOOL FOR SHAPING DEVELOPMENT
THE SPREAD OF TODS
THE LAND-USE/TRANSPORT SYSTEM:ANALYSIS AND SYNTEHSIS
LIGHT RAIL TRANSIT: A STATE OF THE ART REVIEW
TRANSPORTATION FOR LIVABLE CITIES

Process Diagram

GATHER MATERIALS
1. Gather contacts
2. Find base material
3. Find research material

RESEARCH
1. Light rail transit (history, impacts, general regulations, etc.)
2. KC Metro Area (development restrictions, maps, background on light rail project, etc.)
3. Transit Station District Planning (precedents: access, added infrastructure, zoning overlays, land use ratios, FARs, public vs. private zones, public incentives, density, sense of place, etc.)

DEFINE PROGRAM /SET GOALS AND STANDARDS
1. Access
2. Added infrastructure
3. Zoning overlays
4. Land use ratios
5. FARs
6. Public vs. private zones
7. Public incentives
8. Density
9. Sense of place

INVENTORY AND ANALYSIS (based on selected programs needs)
1. Required density
2. Available public incentives
3. Required supporting land use
4. Land value change
5. Political boundaries
6. Available research material
7. Zoning
8. Existing FARs
9. Existing parking
10. Existing infrastructure

CONTACT COMMUNICATIONS
1. Assistance in gathering base material
2. Provide history of light rail project in KC
3. Provide update on current light rail issues
4. Give recommendations based on already gathered information

PRELIMINARY DESIGN
1. Final site selection
2. Adjacency studies
3. Needs evaluation
4. Amount of available space
5. Identify surround market needs

FINAL DESIGN
1. Identify all access points (pedestrian, vehicular, & bicycle
2. Note all added infrastructure
3. Added overlays districts
4. Land use ratios
5. Selected FARs
6. Public vs. private zones
7. Public incentives
8. Density
9. Sense of place

COST ANALYSIS
1. Before and after land values
2. Projected use of light rail transit
3. Projected fares for transit
4. Projected developer costs and profits for selected areas

INCENTIVE RECOMMENDATIONS
1. Existing recommendations in KC
2. Previously used recommendations used in conjunction with light rail
3. Recommended incentives for KC

FINAL PRESENTATION
1. Pin-ups
2. Site plans
3. Diagrams
4. Tabular data
5. Significant findings

DOCUMENT DEVELOPMENT
1. Design format
2. Editing
3. Printing
4. Binding
5. Distribution

line of priority
% of time
august
september
october
november
december
january
february
march
april
may
month

glossary

C

Commuter Transit

Commuter transit provides service exclusively for commuters traveling between suburban areas and the city center or other major activity centers. Thus, it provides “many-to-one” and “one-to-many” types of travel during the morning and afternoon commuting hours, respectively. (Vuchic 1999, 47)

D

Decentralization

Decentralization occurs when the population and industry is redistributed from urban centers to outlying areas. (http://www.merriam-webster.com/dictionary /decentralization)

Density

Development at relatively high densities yields many benefits, including more transportation and housing options in suburban settings. A minimum density of 15 units per acre can support bus service with 15 minute or lower headways. A minimum density of nine units per net residential acre is needed to support light rail, and a density of 12 units per residential acre is needed to make heavy rail a feasible option. (Dunphy 2004, 61-62)

F

Floor Area Ratios

Achieving relatively high levels of mixed-use or employment density typically requires development with high floor/area ratios (FARs), which has important implications for how parking is provided in transit districts. Surface parking is not feasible with FARs above 0.50 to 0.85. To achieve transit-supportive densities in a suburban transit station area, vertical mixed-use development projects should have a FAR in the range of 1.00 to 2.00. Such

projects will require structured parking, which, among other advantages, allows more street fronting buildings to be placed on sites- an important factor in creating streetscapes that are attractive and interesting to pedestrians. (Dunphy 2004, 62)

L

Land Use

A land use/transport system may be represented by a spatial array of land-use zones overlaid with a network representing the transport system. Such a system is shown diagrammatically in Fig. 1.1 below. (Blunden 1971, 2-3)

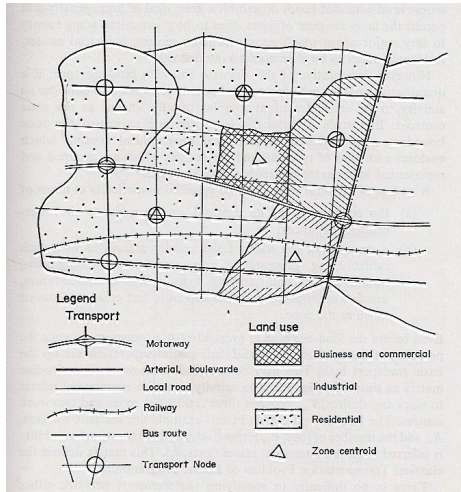


FIG. 1.1. Representation of a land-use/transport system.

Light Rail Transit

Light rail or light rail transit (LRT) is a form of urban rail public transportation that generally has a lower capacity and lower speed than heavy rail and metro systems. The term is used to refer to modern streetcar/tram systems with rapid transit-style features that usually use electric rail cars operating mostly in private rights-of-way separated from other traffic but sometimes, if necessary, mixed with other traffic at grade in city streets. Given the mixed-traffic nature of light rail, whether it is true rapid transit system depends on its implementation.
(http://en.wikipedia.org/wiki/Light_rail)

Table 1. Technical and System Characteristics of Urban Rail Modes

	Light Rail Transit	Rail Rapid Transit	Regional Rail Transit
Fixed Facilities			
Right-of-way category	A, B or C	A only	A or B (occasionally)
Control	Visual/signal	Signal	Signal
Fare collection	On board/at station	At station	At station/on board
Power supply	Overhead/third rail	Overhead/third rail	Overhead/third rail or diesel
Stations: Platform height	Low or high level	High level	Low or high level
Access control	May be controlled	Fully controlled	Often controlled
Vehicle/Train Characteristics			
Minimum operational unit	1	1-2	1-2
Typical number of vehicles	2-4	2-10	2-10
Vehicle length (ft/m)	46-108/14-33	49-75/15-23	68-85/20-26
Vehicle capacity (seats/vehicle)	22-93	32-86	80-125
Vehicle capacity (total/vehicle) (for 2.7 ft^2 [0.25 m] per standee)	74-200	100-300	100-290
Operational Characteristics			
Operating speed (mph/kph)	10-30/15-45	15-40/25-60	20-45/30-70
Typical frequency peak hour, (per hour)	Up to 60	Up to 30	Up to 20
Capacity (passengers/hour)	Up to 20,000	Up to 40,000	10,000-40,000
Reliability	Moderate to high	High	High
System Aspects			
Network and area coverage	Good CBD coverage, branching capability	Predominantly radial, some CBD coverage	Radial, limited CBD coverage
Station spacing (ft/m)	800-2500/250-800	1600-6500/500-2000	4000-15,000/1200-4500
Average trip length	Short to long	Medium to long	Long (U.S. average: 22 miles [35 km])
Interface with other modes	Auto, pedestrian and bus feeders; can also feed other transit modes	Auto, pédestrian and bus feeders; can also feed other transit modes	Outlying: auto and bus feeders Center city: auto, pedestrian, bus, light rail and/or rail rapid transit

NOTE: Figures shown are based on existing systems.
The traditional form of streetcar operation is represented by the low end of the light rail transit performance spectrum.

P

Park & Ride

Park and ride (or incentive parking) facilities are public transport stations that allow commuters and other people wishing to travel into city centers to leave their personal vehicles in a car park and transfer to a bus, rail system (rapid transit, light rail or commuter rail) or carpool for the rest of their trip. The vehicle is stored in the car park during the day and retrieved when the commuter returns. Park and rides are generally located in the suburbs of metropolitan areas or on the outer edges of large cities. (http://en.wikipedia.org/wiki/Park_%26_Ride)

Proforma

A proforma analysis is a set of calculations that projects the financial return that a proposed real estate development is likely to create. It begins by describing the proposed project in quantifiable terms. It then estimates revenues that are likely to be obtained, the costs that will have to be incurred, and the net financial return that the developer expects to achieve. (Planning Commissioners Journal, Number 65, Winter 2007)

T

Transit Oriented Development

A transit-oriented development (TOD) is a mixed-use residential or commercial area

designed to maximize access to public transport, and often incorporates features to encourage transit ridership.
(http://en.wikipedia.org/wiki/Transit_oriented_development)

references

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Cresswell, Roy, trans. 1979. *Urban Planning & Public Transport.* Lancaster, England: The Construction Press.

Department of Transportation. 1976. *Light Rail Transit: A State of the Art Review.* Chicago, Illinois: De Leuw, Cather & Company.

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