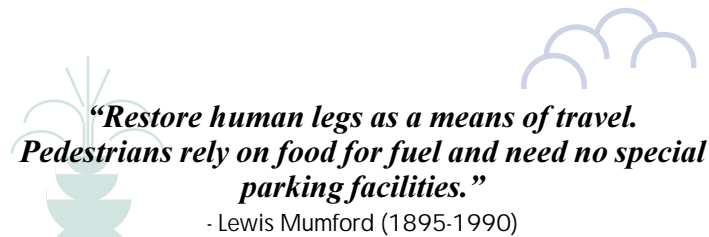




Transit-Supportive Development

introduction



***“Restore human legs as a means of travel.
Pedestrians rely on food for fuel and need no special
parking facilities.”***

- Lewis Mumford (1895-1990)



Across the country, and in our neighborhoods, citizens are tiring of the increase in traffic congestion, deteriorating air quality, and isolation from their neighbors. This challenge is not limited to large urban cities. Managing the future growth of the Kansas City metropolitan area is very real to many community leaders, developers, and transportation and land use professionals. The Mid-America Regional Council (MARC) is assuming the active role of educating those involved in land planning and development, by preparing this guidebook, which recognizes the need to balance land use and transportation.

The SMART CHOICES: Transit-Supportive Development Guidebook will support efforts to enhance regional mobility and quality of life by reinforcing the region's transit system and supporting ridership growth. It recommends, simply, that land use planning be used to create urban and suburban environments where walking and transit are viable transportation options. By making it easier to go from one transportation mode to another, the connection between community and development is enhanced — ensuring that a community is accessible to all.

This guidebook has been specifically designed to assist elected and appointed planning officials, technical planning staff members, community representatives, and individual citizens interested in improving the relationship between transit and land use planning. The transit-supportive development (TSD) principles are explained thoroughly and applied to familiar sites located within the Kansas City region to help build understanding about their application in our metropolitan area. Furthermore, this guidebook provides guidance to communities in determining whether or not their local codes and standards encourage, support or impede transit-supportive development.

If implemented, the transit-supportive development principles presented herein have the potential to reshape the manner in which development occurs within the Kansas City region.

How to Use This Guidebook

This guidebook is divided into four sections: an introduction of transit-supportive development principles, the application of TSD principles to various development scenarios, how to identify barriers to success, and the action necessary to enable change. The intent of the first two sections is to educate interested parties regarding the interaction between land use and transportation, while the final two sections empower them to implement changes in the built environment with policy tools that encourage transit-supportive development.

The six prototypes include a range of suburban and urban, as well as new development and infill. The process outlined in this guidebook is also applied to each prototype, from identifying regulatory and institutional barriers, to recommending policy and design actions. Wherever possible, recommendations are taken directly from jurisdictions where TSD strategies are successfully in place.

The strategies suggested in this guidebook may be appropriate in certain situations or in some communities. Nevertheless, consideration of transit-supportive development principles at appropriate times, such as during periodic review and development of master or specific plans, can help achieve the broader goals of the community and the region.

Relationship to Other MARC Initiatives

The Mid-America Regional Council (MARC) promotes transit-supportive development through its Creating Quality Places program. Creating Quality Places was initiated in 1999 to encourage local government officials as well as those involved in private development to consider design elements that result in broader mobility choices.

As the transportation planning organization for the metropolitan area, MARC is involved with the region's three transit providers and with local governments to design and implement improvements to the region's transit system. The long-term success of the region's efforts to achieve an improved transportation system will depend, in part, on supportive land use and development decisions.

Organization of the Guidebook

Section One - contains a descriptive overview of transit-supportive development principles as well as a discussion of the physical requirements that must exist in order for the region to regain a more balanced transportation system.

Section Two - incorporates the principles of transit-supportive development into local prototype locations, plans, and standards to aid users in deciding which of these are applicable for their community.

Section Three - begins with evaluating plans, codes, and standards often in use by local communities to determine if policies and implementation tools could support transit-supportive development or remove particular obstacles.

Section Four - addresses the barriers identified in the previous section and presents alternative policies and strategies. Initiating transit-supportive development strategies in some communities may not require any change in codes and standards; in others, it may require changes for certain principles to be applied. In some cases, it may require more thorough, systemic change.

The Appendix includes design guidelines and regulations taken from other jurisdictions that, once implemented, will direct future development that supports transit service.



Transit-Supportive Development

section 1: principles



Historically, the relationship between land use and transportation was quite clear and efficient. Communities were organized so that the goods they produced could easily be shipped to others, by road, river, lake, or ocean, as the particular geographic circumstances dictated. Personal travel generally occurred by the same route. The relationship was based on the functional requirements of directly and efficiently moving goods and people, as well as on the limited availability of alternative modes of travel.

As the road network began to expand throughout our country to accommodate increased automobile and truck use, this relationship between land use and transportation changed. The proliferation of the private automobile, as well as the increased number of cars per household, led to the creation of new patterns and densities of development. In the past 40 to 50 years, land use development patterns have generally taken the form of large-lot, decentralized, single-use districts, connected by a hierarchy of ever-expanding roadways. Zoning and other government regulations reinforce this trend.

As undeveloped land becomes scarce and roadways become more congested, people are beginning to reexamine the historically prescribed land use patterns within traditional “urban core communities.” In Kansas City, Missouri, this effect has been strongly supported by the FOCUS Plan. Many area communities, from Liberty to Lenexa to Lee’s Summit, are considering changes to their plans, policies and regulations. The opportunity now exists to promote new patterns of development that encourage vibrant, safe, human-scale communities that offer, and are supported by, transit.

What is Transit-Supportive Development?

Transit-supportive planning and development rethink land use and development patterns so that they will be effectively served by a balanced transportation system where walking, bicycling, and riding transit work in harmony with the private automobile. Transit-supportive development enables citizens to choose an alternative to the automobile for at least one or more of their daily trips between home, work, shopping, school or services. This is primarily accomplished by designing communities so that the physical facilities necessary to walk, cycle, ride transit, and drive a car are convenient and attractive to us.

This section introduces principles that allow growth and redevelopment to take place in a fashion that does not necessitate the need for a single-purpose transportation system. Many communities have successfully adopted development standards that incorporate the principles described herein and have had very positive responses from both citizens and private developers.

This guide focuses on five categories of planning principles that must be addressed when considering a development's ability to accommodate all modes of travel:



- **Travel connections**



- **Building scale and orientation**



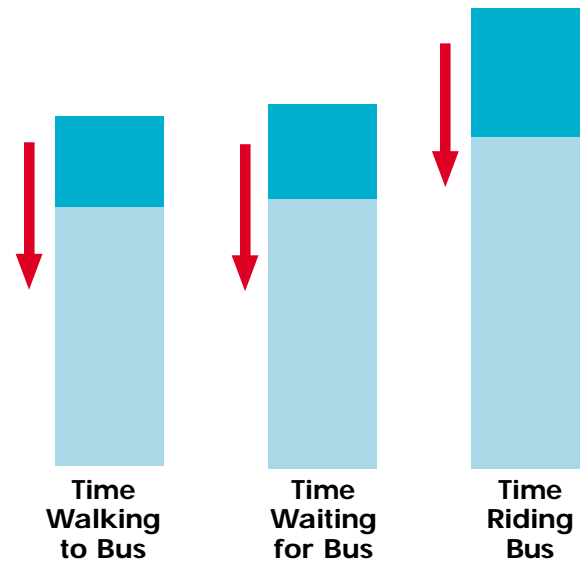
- **Public spaces**



- **Parking**



- **Land use**



Creating development patterns which are transit supportive will reduce time required to walk to transit and be more conducive to direct routing. Direct routing could increase headway frequency and reduce time required waiting for transit.

The principles do not infringe upon land use entitlements (e.g., existing zoning classifications) in any way and are intended to inform “how” development should take place rather than “what” and “where.” More often than not, the incorporation of transit-supportive development standards allow for greater entitlements and more flexibility than existing land development standards.

Opportunities for Communities

The transit-supportive development principles outlined in this section are applicable to the Kansas City region. However, in order to transform these design principles into physical land use patterns, continued action is necessary. Identification is the first step. Policy obstacles still exist. This is why it is important that the public, community organizations, and local governments gain a clear understanding of these principles, identify with the prototype applications, and visualize the potential future of transit-supportive development in their communities.



TRAVEL CONNECTIONS



Convenient and Direct Pedestrian Connections

Multiple connections empower travelers with the ability to choose how to access development. Short, convenient connections and pathways located between and within developments make alternative modes of travel more attractive. By integrating uses within a multiple-use activity center, trip distances are reduced.

Direct pedestrian paths make it easier for people to walk throughout the community as well as to and from transit stops. Sidewalks should be incorporated into the design of all streets, parking facilities and public spaces, and should be designed to connect building entrances. To make walking more attractive, it is important to provide as many pedestrian connections as possible, whether they are linking adjoining buildings, adjoining sites or adjoining neighborhoods.



Walk time for a transit user is reduced with a direct connection to the bus stop

Pedestrian-Scale Blocks

When incorporated into an interconnected street network, short blocks improve the mobility of pedestrians. Block lengths of 300 to 500 feet are desirable as opposed to longer blocks, which discourage walking and result in longer routes.



A system of pedestrian-scale blocks allows buildings to fill in an area over time



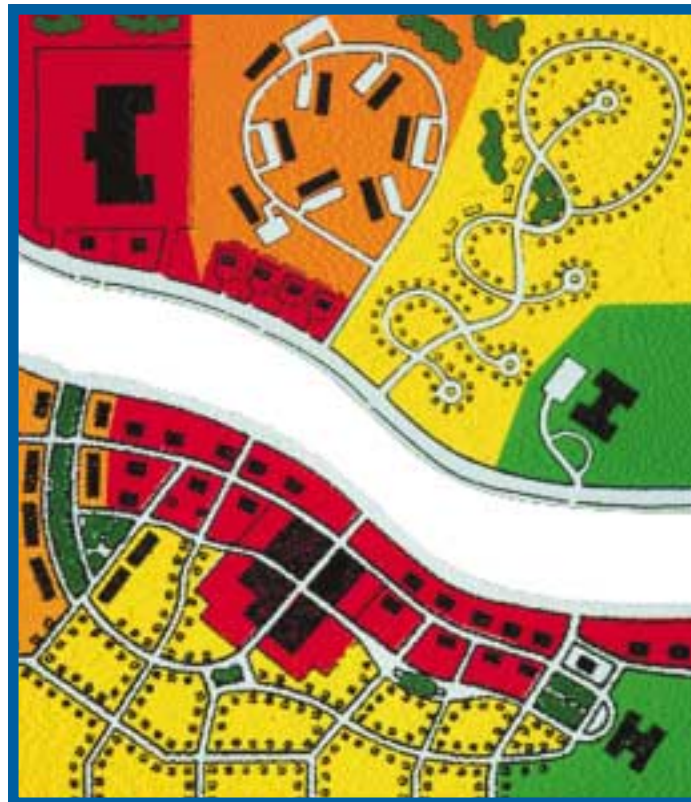
TRAVEL CONNECTIONS



Interconnected Street Network

An interconnected network of streets distributes traffic among all roadways, rather than concentrating it on arterial roads. Such a system improves the mobility of pedestrians and bicyclists by providing multiple travel routes, in addition to allowing more efficient transit routing. In order to be most effective, this connectivity needs to also extend into neighboring developments.

Conventional suburban development with limited connection



Conventional developments use the street network to separate uses, while transit-supportive development brings different uses together through an interconnected street network.

Interconnected street network



Bicycle lanes may be incorporated in roadways with an urban section

Bicycle Circulation and Parking

To ensure a safe and convenient bicycle network that is comparable to the existing automobile network, bicycle accommodations should be provided along every street. For roads with low traffic volumes, the normal travel lane may also serve as a bikeway. Higher volume roads should incorporate bicycle lanes. However, if bike lanes are inappropriate, parallel off-street paths should be provided. Routes should be clearly marked and designed using standards from the American Association of State Highway Transportation Officials (AASHTO) Bicycle Facilities Guidebook. In addition, secure facilities for bicycle parking should be available at common local destinations and should be as close to the building entrance as possible.



BUILDING SCALE AND ORIENTATION



Human-scale architecture and articulated facades help create an interesting pedestrian environment and can improve how people perceive walking.



Streetfront display windows are characteristic of commercial areas that are inviting to pedestrian activity.

Human-Scale Architecture

Sensitivity to the physical design and location of buildings is important in order for travel connections to be attractive. The quality of “out of auto” experiences is influenced by the placement of buildings in relation to the street and other buildings, as well as their height and scale.

The Country Club Plaza provides a local example of how architecture and streetscape design can be used to create a pleasant pedestrian environment. Originally designed in the 1920s, the Plaza’s buildings contain pedestrian-friendly features such as awnings, articulated facades and streetfront display windows. At the same time, motorists are accommodated through appropriately scaled streets and parking facilities that are placed on-street and behind buildings.

Buildings and Entrances Oriented Along the Street
Transit-supportive design assumes people are willing to walk a maximum of ½ mile for premium transit and rail service and ¼ mile for other bus services. If large parking lots separate buildings from the street, walking is made less convenient. By placing buildings and their entrances along pedestrian walkways, walking distances are shortened. Building placement is a powerful tool in reinforcing streets as public amenities.

The physical location of buildings can not only encourage pedestrian activity, but is also the most powerful tool for framing public spaces for informal gatherings. Such public spaces also make very attractive transit facilities where the transit customer can wait in a safe, comfortable and dignified setting.



Before



After



PUBLIC SPACES



Pedestrian-Friendly Streets

Streets are by far the most prevalent public spaces; as such, they should be designed to accommodate pedestrians comfortably. Fast-moving cars are a safety risk to pedestrians. The speed of traffic can be managed through various traffic-calming measures and by using two-way streets instead of one-way pairs.

Pedestrians must also be protected from moving traffic through features such as street trees, landscaped strips, bicycle lanes or a row of parked cars. The sidewalk itself should also be wide enough to provide a buffer area, with a minimum width of five feet in less traveled areas and 10 to 15 feet in heavily traveled residential, commercial and office areas.

Parks and Plazas as Community Gathering Spaces

In addition to streets, spaces such as parks and plazas can encourage social interaction and create an environment designed around people. In addition, these places often serve as community landmarks and focal points, making them ideal locations for transit stops.

Quality Facilities for Transit Users

Features such as benches, shelters, landscaping and adequate lighting make people feel comfortable while waiting for transit service. Additionally, services such as child care facilities, dry cleaners, postal facilities and health care offices can be included as part of bus transfer centers or rail stations. The quantity and quality of these features is an important part of establishing transit as a respectable and convenient travel option and creating a dignified experience for the transit customer.



This residential street in downtown Kansas City contains features such as parked cars, street trees and a wide sidewalk, all of which protect pedestrians from moving traffic.



This fountain is one feature that makes the space comfortable for pedestrians and transit customers.



Public gathering spaces framed by buildings work to create a comfortable pedestrian environment.



PARKING



Pedestrian-Friendly Parking Facilities

Parking is a critical principle of transit-supportive development. The proper location and size of parking facilities are essential if pathways, buildings and public spaces are to succeed in creating transit-supportive settings.

The size and location of parking facilities should be sensitive to pedestrian and bicycle circulation. On-street parking is a pedestrian-friendly way to provide convenient access to streetfront businesses, as the parked cars provide a buffer between pedestrians and moving traffic. Surface parking lots can be made more pedestrian-friendly by including walkways for through pedestrian traffic. They should also be placed behind buildings to shorten walking distances for those on foot.



Placing parking beside buildings is one way to accommodate both automobile and pedestrian traffic.

If large surface parking lots are necessary, walkways for through pedestrian traffic should be provided.



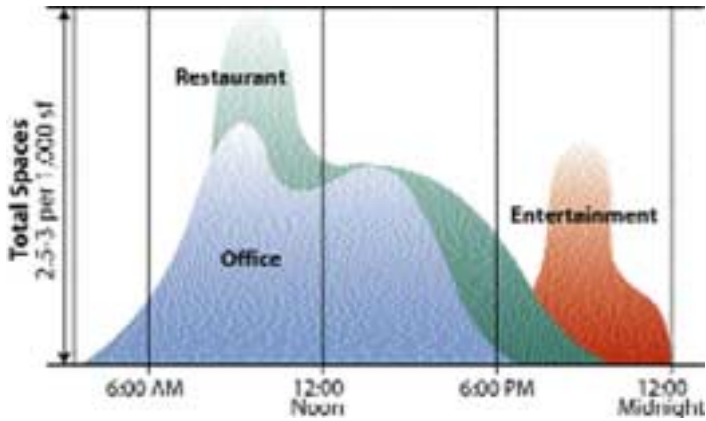
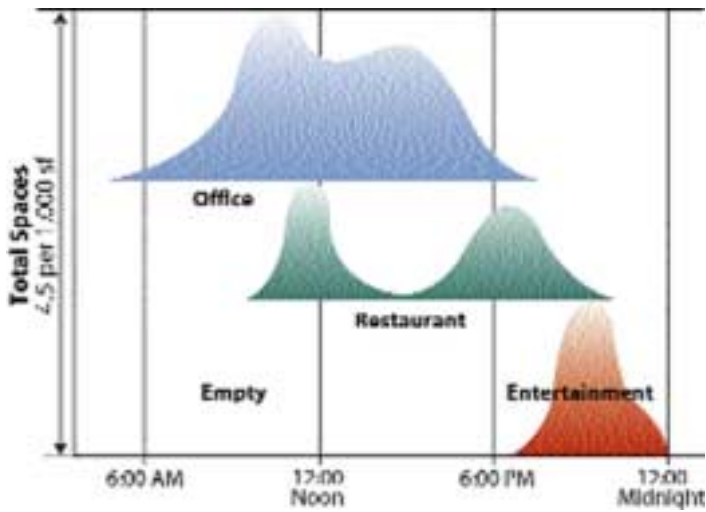


PARKING



Structured and Shared Parking

Parking structures and shared parking lots are two ways to reduce the amount of space occupied by parking facilities. Uses that operate during different times of the day can share parking facilities. Structured parking is useful in dense residential and commercial areas because it allows more direct travel for pedestrians and bicyclists.



Shared parking facilities allow new development to be accommodated with fewer total spaces



Structured parking garages occupy less space than surface parking lots. When designed appropriately, they can blend into the streetscape.



LAND USE



The mix and density of land uses is a powerful tool in the creation of places where travel is best experienced without the aid of the automobile. Appropriate mixes of land uses must be complementary to one another to encourage trip interactions. A connected and integrated land use mix also encourages different activities throughout different times of day, enabling parking facilities to be sized in a manner that is not out of scale to the pedestrian or transit customer.



These mixed-use buildings contain office and residential uses over streetfront retail shops. They are designed to be easily adaptable to different uses.



In transit-supportive areas, it is important to have a concentration of small-scale everyday uses.

Mixed-Use Buildings and Neighborhoods

Mixed-use districts allow people to live within walking distance of or a short transit ride from work, shopping and other services; they also establish “park once” environments where people are able to walk between uses. Additionally, a mix of uses creates a vibrant 24-hour neighborhood with a variety of activities throughout the day and week. Different uses can be incorporated into a single building, or smaller single use zones can be used to create a mixed-use neighborhood. In mixed-use districts, it is important to promote the development of multi-purpose buildings whose uses can be adapted over time. This same flexibility should also be reflected in the network of streets and blocks.



LAND USE



Increased Density in Neighborhood Centers

Land uses such as office, commercial and medium/high density residential are well suited for neighborhood centers and locations next to existing or proposed transit routes. By clustering these uses around community focal points and public spaces, more people benefit from access to transit service and other public amenities. Additionally, increased density makes transit service more cost effective, since each route is able to serve more people.



Before



After

Increased density in neighborhood centers can be accomplished through new infill development.

Eastgate Center, Chattanooga, TN

Transformation from regional mall to mixed use center



Transit-Supportive Development

section 2: prototypes for metropolitan kansas city

Transit-supportive design can increase the trip quality of all users (vehicular, transit, pedestrians). Yet, the principles outlined in Section One are rarely applied to new development plans. In order to facilitate the transition from concept to implementation, prototype sites within the Kansas City region are presented here and evaluated in terms of their local feasibility, benefits and applicability to the Kansas City metropolitan area.

The Mid-America Regional Council, as part of its mission to examine emerging issues and propose creative solutions for improving the quality of land use and development decisions, sponsored a series of planning workshops to explore the implementation of transit-supportive design in six different locations.

Workshops engaged local stakeholders to plan a possible future for each (re)development scenario. The stakeholders, together with planning and design professionals, toured and analyzed six different sites that represent a variety of development opportunities. The chosen sites are prototypical, allowing others to learn from these examples and apply the lessons learned to development in their own community.

The prototype sites selected by the project steering committee are based on the following general criteria:

- The detailed plan will encourage action or direct more appropriate action to occur.
- The property/business owner(s) are interested in transit-supportive design and support the process of preparing the plan.
- The (re)development opportunities exist in the near future (1 to 3 years).
- The concepts of the transit-supportive master plan may be extended to similar sites within the region.
- There is an opportunity to accommodate higher densities of residential activity and promote connections to existing or planned transit stations and centers.

The prototype sites include:

- Beacon Hill, Kansas City, MO – Urban neighborhood redevelopment
- Independence Square, Independence, MO – Historic town center
- Antioch Mall, Kansas City, MO – Suburban mall redevelopment
- Liberty Triangle, Liberty, MO – Suburban commercial infill development
- Rosedale, Kansas City, KS – Urban corridor
- Shawnee Mission Parkway / I-435, Shawnee, KS – Emerging suburban commercial center

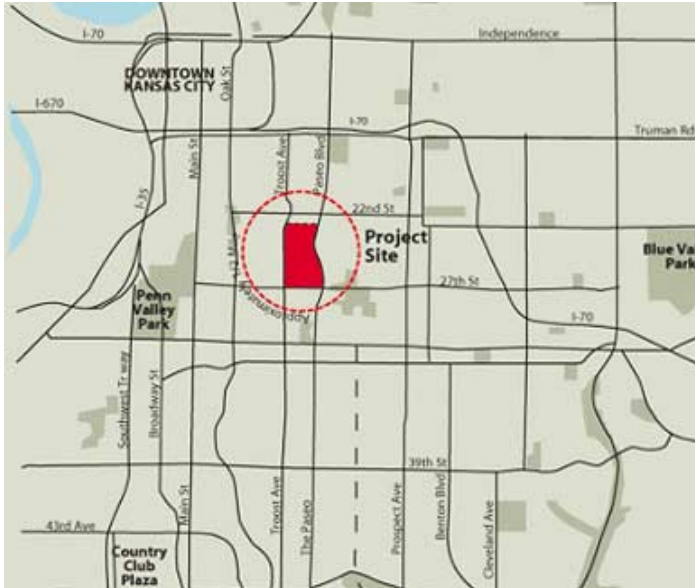


BEACON HILL

Kansas City, Missouri



Urban Neighborhood Redevelopment



Prototype:

Beacon Hill is located on the east side of downtown Kansas City between Bruce Watkins Parkway and Troost Avenue, from 21st to 27th Streets. Vacant lots, single-family residences, multi-family residences, and commercial uses characterize the area. The site is typical of other locations in the urban core, showing evidence of blighted conditions while retaining much of the character of a typical urban neighborhood. The FOCUS Plan identifies the Troost corridor as a “Great Street” and potential redevelopment area. Accordingly, current redevelopment plans submitted to the Kansas City Economic Development Commission incorporate mixed-use development, single-family residential rehabilitation and new construction.





Site Issues:

The arrangement of lots and blocks in the study area is well organized, typical of an older urban environment. Beacon Hill is well served by transit, with the city’s highest used transit route along Troost Avenue. The intersection of Troost Avenue and 27th Street is identified by the city as a mixed-use transit hub.

Proposed redevelopment projects by the University of Missouri-KansasCity (UMKC) and private entities along Troost Avenue further strengthen the likelihood of a successful transit-supportive development plan. The selected developer is finalizing

the land use plan and architectural design for the neighborhood, with construction expected to begin by 2002.

Transit-Supportive Design Issues:

The Beacon Hill site presents an excellent opportunity to showcase streetfront development. Appropriate site planning, with the historic character of Troost Avenue influencing the building/street relationship, and clearly identified travel connections will promote transit ridership and support redevelopment.



Prototype Application:

Transit-supportive designs seeks to balance the density of the urban fabric with a generous amount of public space. “Beacon Hill Commons” is the centerpiece of the development and serves as a focal point for adjacent neighborhoods. The placement of the commons on a block of 25th Street also serves to calm traffic, discouraging cut-through traffic in the residential neighborhood. Within the residential area of Beacon Hill, new townhouses and single-family homes front the Commons with alleys providing vehicular access. Future UMKC development, facing the west side of Troost Avenue, will also be able to take advantage of the Beacon Hill Commons “address.”

The plan takes advantage of the existing dense street network by orienting buildings toward the street wherever possible. Alleys provide direct access to buildings and additional off-street parking. On-street parking is recommended along Troost Avenue and 25th Street with possible "bulb-outs" for street trees. Bulb-outs visually enclose the street, slow down traffic, and enhance the pedestrian experience.

BEACON HILL

Kansas City, Missouri



Transit-Supportive Elements



- On-Street Parking
- Use of Alleys



- Convenient and Direct Pedestrian Connections
- Pedestrian-Scale Blocks
- Interconnected Street Network



- Increased Density in Neighborhood Centers
- Mixed-Use Buildings and Neighborhoods



- Human -Scale Architecture



- Pedestrian-Friendly Streets
- Parks and Plazas as Community Gathering Spaces



Existing Troost Avenue



Proposed University Development on Troost Avenue



Proposed Beacon Hill Commons

INDEPENDENCE SQUARE

Independence, Missouri



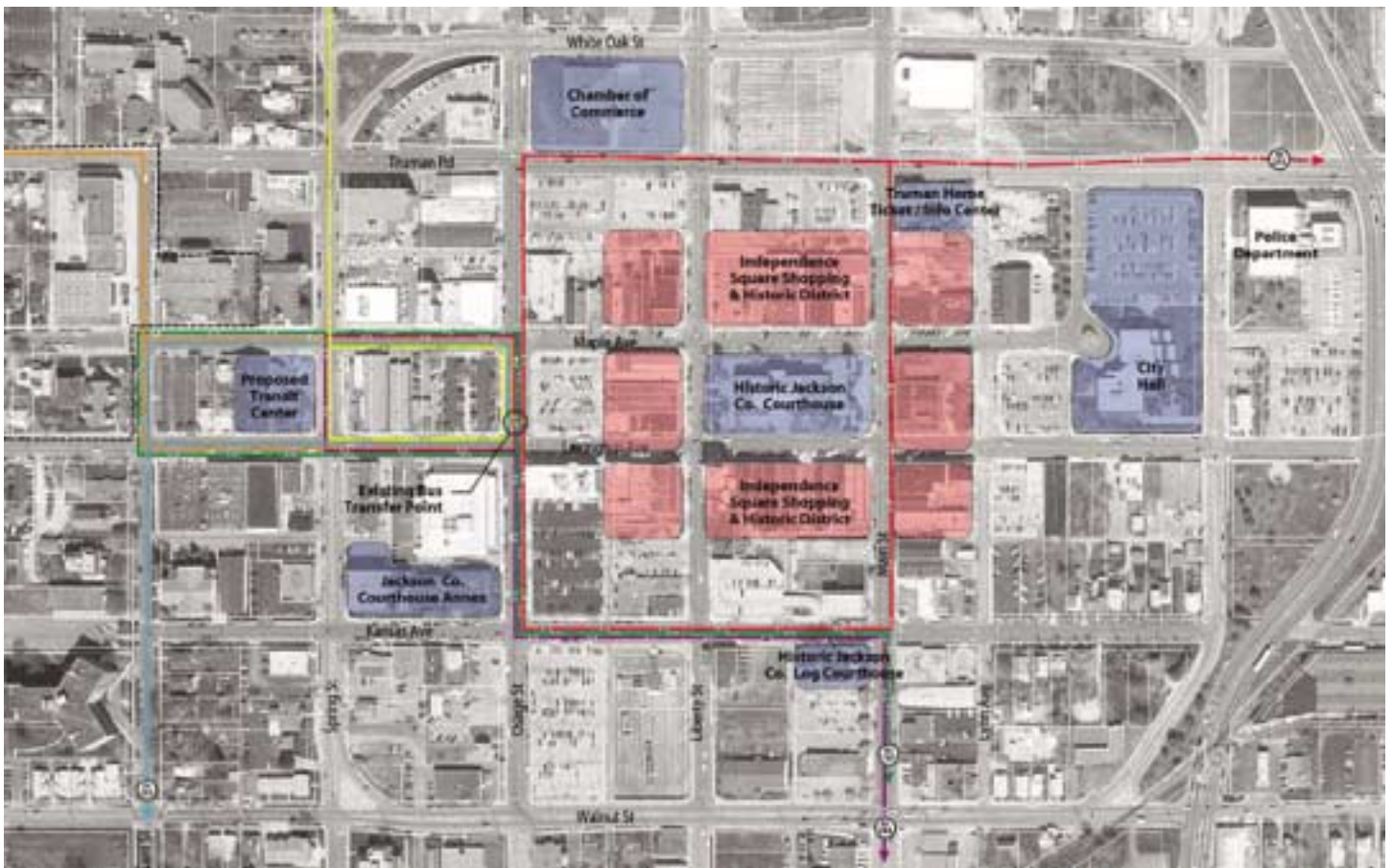
Historic Town Center



Prototype:

Independence Square, with a well-defined town square surrounded by retail and residential uses, is typical of many downtowns in the region. The town square serves as the center of government activity and provides a strong sense of community identity. Improving the pedestrian environment will help ensure that transit use will increase. Traditional town squares that exist throughout the Kansas City region are proven examples of transit-supportive design.



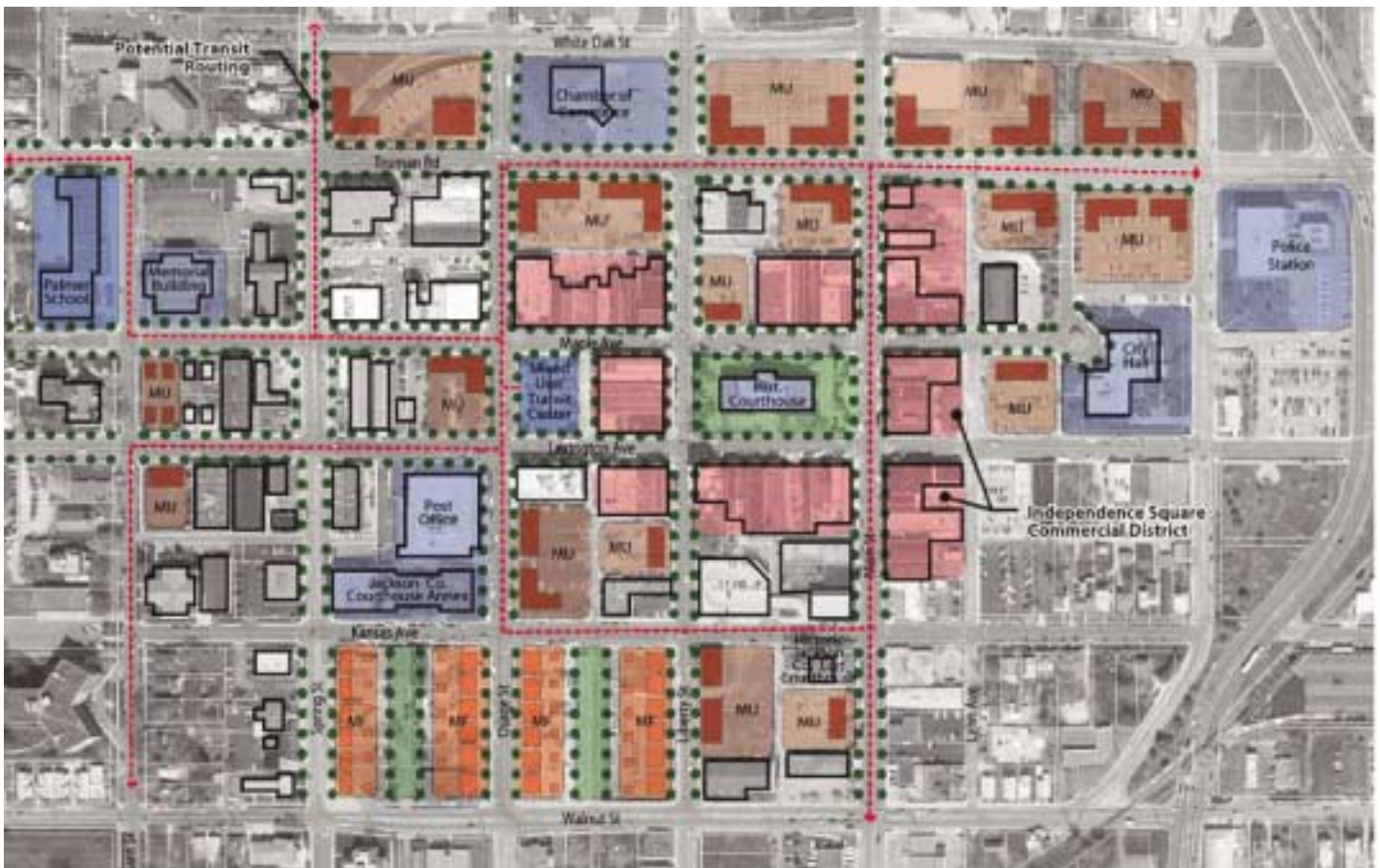


Site Issues:

The government complex anchors the square and is surrounded by a redeveloping commercial district. The Truman Historic District, which includes the Truman Home and Visitor Center, is another popular destination within the study area. Uses within the square are well served by transit, with seven routes and a future transit center planned. However, over time buildings were cleared to provide additional parking while street blocks were rounded to ease the flow of traffic into and out of downtown.

Transit-Supportive Design Issues:

Independence Square provides the opportunity to build on the architectural character of the neighborhood and historic urban fabric through residential infills. This site also provides the opportunity to improve the pedestrian environment, examine new locations for commercial development, and maximize the design and placement of the new transit center.



Prototype Application:

The recommended plan respects the relationship of the downtown square to the courthouse and core retail district. Retail infill, close to the core, completes the street wall and serves the increasing number of downtown residents. New residential development, south of the square, insures 24-hour activity.

Conversion of one-way streets to two-way improves retail exposure and calms through traffic. The provision for on-street parking throughout the study area meets the need of additional parking capacity while protecting pedestrians from moving vehicles. Streetscape improvements further enhance the pedestrian environment and connect the square to the Historic District and other historic attractions.

With proper design and incentives, the proposed transit center will complement existing uses and attract additional activities and uses (retail, community services and special events).

The potential transit center is located on a public parking lot site with joint use structured parking and street level retail. The transit center extends the “main street” character of the square. New mixed-use development on Osage Street helps to complete the urban pattern while locating infill development near transit service.

INDEPENDENCE SQUARE

Independence, Missouri



Transit-Supportive Elements



- Pedestrian-Friendly Parking Structure
- Structured and Shared Parking
- On-Street Parking



- Convenient and Direct Pedestrian Connections
- Pedestrian-Scale Blocks
- Interconnected Street Network
- Landscaping
- Conversion to Two-Way Traffic



- Increased Density in Neighborhood Centers
- Mixed-Use Buildings and Neighborhoods



- Human-Scale Architecture



- Pedestrian-Friendly Streets
- Wide Sidewalks



Before



After



Before



After

ANTIOCH MALL

Kansas City, Missouri



Suburban Mall Development



Prototype:

Antioch Mall is an existing first ring suburban mall located on the northern side of the region. Originally designed as an open air shopping center in the 1950s, the mall underwent extensive renovation to enclose the mall in the 1970s. Today, the mall is struggling to compete with larger regional malls and big box centers. The site, with good access to major roadways and the potential for higher density redevelopment on mall property and/or adjacent parcels, is representative of at least five locations in the Kansas City region.





Site Issues:

The study area is characterized by large underutilized parking lots, strip commercial that is disconnected from surrounding neighborhoods, and wide roadways that are hostile to pedestrians. Retail activity at the mall remains strong in the face of increased competition from newer regional malls. The mall is poised for another major renovation with the owner expressing interest in creating a transit-supportive development. The existing regional park-and-ride facility, also located on the site, is identified in Kansas City's FOCUS land use plan as a mixed-use community center.

Mixed-use community centers are concentrations of commercial and other community-based activities, including

residential uses. This designation opens the opportunity for strategically targeted public investment to further enhance the location as a future transit and mixed-use center.

Transit-Supportive Design Issues:

This site presents an opportunity to illustrate the manner in which a transit center can support a redeveloped town center. Existing underutilized sites also provide the opportunity for future infill to increase the density and mix of uses within the development. Large seas of parking also provide the opportunity to improve the pedestrian environment and connect existing commercial activity to surrounding neighborhoods.



Prototype Application:

The recommended plan re-introduces the classic grid pattern of streets. A long-term recommendation to extend 52nd Street west to Antioch Road enhances the local road network and provides vehicles an alternative to Antioch and Vivion Roads. Chouteau Trafficway redesigned as a boulevard supports new residential uses.

The recommended plan also introduces residential, office and structured parking onto the site creating a denser, mixed-use environment. New residential development is planned on underutilized parcels located at the northwest and northeast periphery of the site. Office space is promoted within the mall and in the adjacent mixed-use development located south of Vivion Road. All of the new mixed-use development occurs on streets and blocks that connect to surrounding residential neighborhoods.

Finally, the transit center becomes a major component of the former mall now redeveloped as a town center. Acting as a stimulus for commercial redevelopment and neighborhood buildings, the transit center will contribute toward the identity of the entire area. The enhanced transit center incorporates a public square, structured parking, and the opportunity for additional streetfront commercial uses.

The recommended plan develops over time with the first phase calling for the development of the transit center around a new public square and additional street-oriented commercial uses south of the mall between Vivion Road and the south mall entrance. The second phase incorporates new residential development along the periphery and on underutilized parcels as well as new street-oriented commercial uses east of the existing mall. Long-term recommendations include the 52nd Street extension and pedestrian-friendly, commercial redevelopment on property south of Vivion Road.

ANTIOCH MALL

Kansas City, Missouri



Transit-Supportive Elements



- Pedestrian-Friendly Parking Structures
- Structured and Shared Parking



- Pedestrian-Scale Blocks
- Interconnected Street Network
- Quality Facilities for Transit Users



- Increased Density in Neighborhood Centers
- Mixed-Use Buildings and Neighborhoods



- Human-Scale Architecture



- Pedestrian-Friendly Streets
- Parks and Plazas as Community Gathering Spaces



Initial Phase (2-5 years)



Short Term (5-10 years)



Long Term (10+ years)



Before



After — Proposed Antioch Mall Town Center

LIBERTY TRIANGLE

Liberty, Missouri



Suburban Commercial Infill Development



Prototype:

The intersection of Interstate 35, Highway 291 and Highway 152 in Liberty, Missouri, forms an area known as Liberty Triangle. With major roadways leading into and out of the city crossing at the triangle, the site is the unofficial gateway of the city of Liberty. For this reason, the redevelopment of Liberty Triangle is a priority for the city. There is potential for infill development in the center of the study area and redevelopment of existing uses.





Site Issues:

The irregular configuration of the site created deep lots with minimal frontage. Access provided by major roadways led to auto-oriented commercial development along the front of parcels. Consequently, the center of the triangle is largely undeveloped. Future plans developed by the city of Liberty envision a campus-like development pattern. Yet, lured by the excellent roadways that serve the site, development pressure from big box retailers is increasing.

An existing park-and-ride facility is located at the southwestern corner of Liberty Triangle. The facility is used

primarily for carpooling. However, as transit develops, there is great potential for the lot to move to another location within the triangle, expand its current use and serve as a transit center.

Transit-Supportive Design Issues:

The primary design challenge of Liberty Triangle is reconfiguring the “big box” site plan such that it accommodates both automobiles and pedestrians. From an architectural standpoint, the triangle offers the opportunity to showcase an alternative design for suburban commercial uses that is accessible to all users.



Prototype Application:

The recommended plan for Liberty Triangle is based on a foundation of interconnected streets and the existing drainage system. Extending existing streets such as Conistor, Blue Jay, and Forest creates a street grid. Newly created roadways and intersections minimize the need for single-use driveways that empty directly onto the major roadways. Driveway standards and streetscape enhancement on Highways 152 and 291, in partnership with the Missouri Department of Transportation, will manage congestion and safety while still providing much needed access. The existing Stewart Road continues to provide access to development fronting Interstate 35 while a new roadway parallel to Stewart Road allows for additional development to occur on previously inaccessible property.

The existing drainage system is retained as an amenity and master stormwater management system for the project area. A comprehensive stormwater system minimizes the need for

parcel specific retention ponds, leaving additional property available for commercial development. It also serves as the primary open space for the project, connecting the northern and southern end of the site.

Land use in the triangle is diversified to include residential uses as well as the commercial uses and professional offices historically proposed. Big box retail is accommodated within a larger system of streets and blocks and retains visibility from Interstate 35. Office and residential development is oriented toward the new and extended roadways. Wherever possible, residential buildings face the public greenway.

The proposed transit center, currently a park-n-ride lot, is relocated closer to Highway 152 and is incorporated into new mixed-use development. Commercial development is also oriented around a new MODOT-funded traffic circle.

LIBERTY TRIANGLE

Liberty, Missouri



Transit-Supportive Elements



Before



After — Multi-family residential



After — Main Street Office and Retail



Before



After — Liberty Triangle



- Pedestrian-Friendly Parking Structures



- Convenient and Direct Pedestrian Connections
- Interconnected Street Network
- Quality Facilities for Transit Users



- Increased Density in Neighborhood Centers
- Mixed-Use Buildings and Neighborhoods
- Inclusionary Housing



- Human-Scale Architecture
- Buildings and Entrances Oriented to Street



- Parks and Plazas as Community Gathering Spaces

ROSEDALE

Kansas City, Kansas



Urban Corridor Redevelopment



Prototype:

Rosedale is a developed urban neighborhood located in Kansas City, Kansas. The University of Kansas Medical Center, south of 39th Street, is a major employer and destination. Strip retail activity is located west of the medical center while traditional neighborhood commercial buildings are found east of 39th Street.

Currently, seven bus routes serviced by three transportation providers converge in and around the medical center. A commuter rail station is proposed along Southwest Boulevard at the northern end of Rainbow Avenue. This prototype presents the opportunity to promote redevelopment and integrate a commuter rail facility into the existing urban fabric.





Site Issues:

The proposed commuter rail station will serve patients and employees of the University of Kansas Medical Center, in addition to the larger neighborhood. Rainbow Avenue accommodates pedestrian traffic, but the quality of the walk trip is low. In addition, hilly terrain poses challenges.

Transit-Supportive Design Issues:

Given the high number of bus routes in the area and the potential of a commuter rail station, this prototype presents the opportunity to evaluate efficient transit service/routing from the rail station to the University of Kansas Medical Center. The study area is also a prime example to illustrate the provision of “front door” transit service, allowing direct pedestrian access from transit to destinations.

ROSEDALE

Kansas City, Kansas



Transit-Supportive Elements



Existing 39th Street



- Pedestrian-Friendly Parking Structures



Proposed Phase I



- Convenient and Direct Pedestrian Connections
- Interconnected Street Network
- Bicycle Circulation and Parking



Proposed Phase II



- Increased Density in Neighborhood Centers
- Mixed-Use Buildings and Neighborhoods
- Inclusionary Housing



- Human-Scale Architecture
- Buildings and Entrances Oriented to Street



- Pedestrian Friendly Streets
- Parks and Plazas as Community Gathering Spaces

SHAWNEE

Shawnee, Kansas



Emerging Suburban Commercial Development

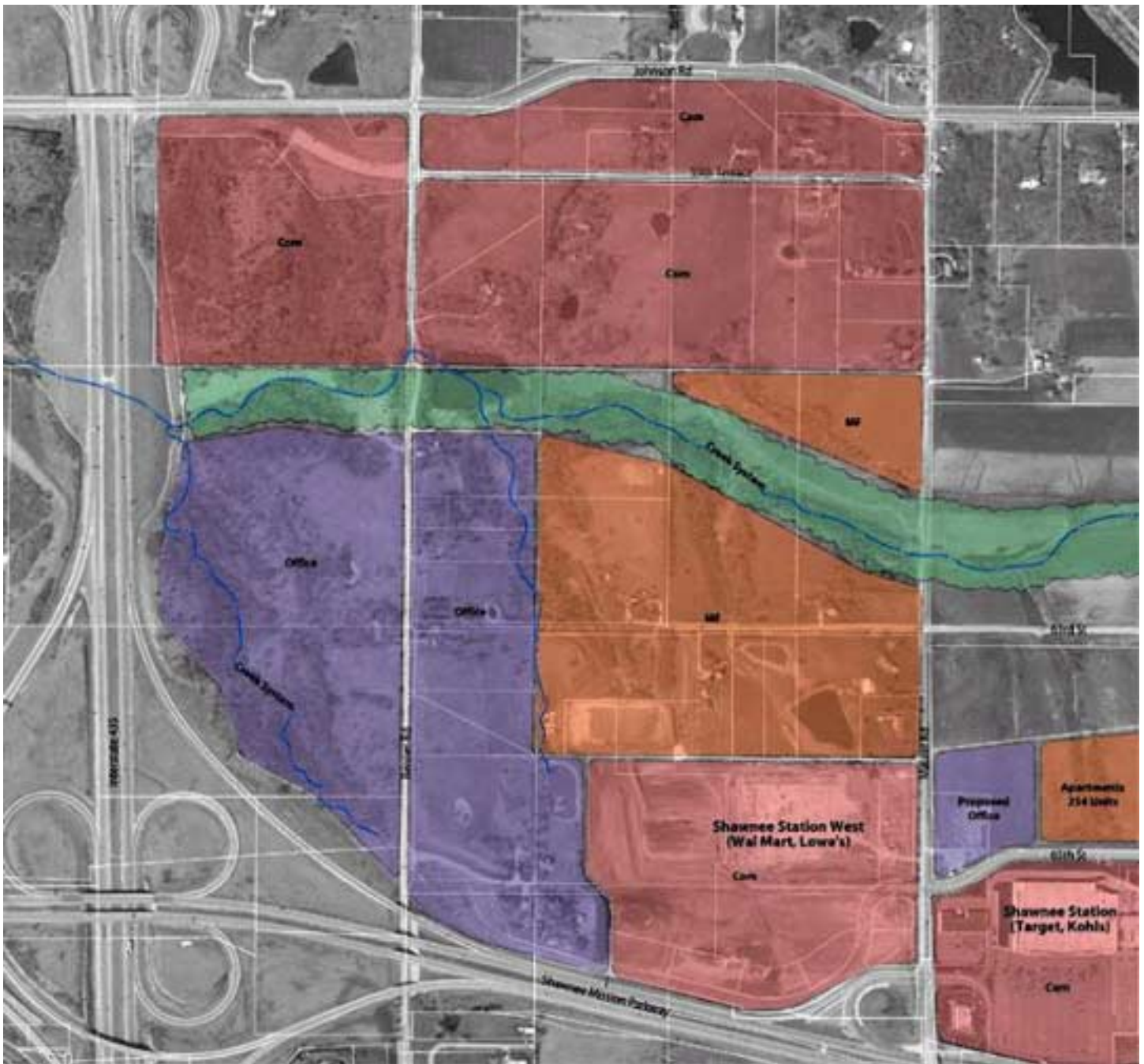


Prototype:

Located at the crossroads of Interstate 435 and Shawnee Mission Parkway, the site is an emerging suburban commercial center. The city of Shawnee’s adopted land use plan specifies separate commercial, office, and multi-family land uses. This land use classification, in conjunction with large parcels of undeveloped property, led to the development of big box retailers such as Wal-Mart and Lowe’s. The site is typical of previously rural areas that, after the introduction of a major interchange, experience substantial growth pressure.

Large scale retail and new planned development have specific requirements for drainage and stormwater. Addressing the need for drainageways early on allows the entire site to draw on and improve existing natural features. A comprehensive drainage system combined with the creek’s system provides important open space for surrounding development.





Site Issues:

Excellent regional roadway access is provided to the site by the Shawnee Mission Parkway and Johnson Drive interchanges with Interstate 435. Much of the land is undeveloped and assembled in large parcels. An existing conventional big box retail center is located on the site. A major drainage way runs east-west through the site.

Transit-Supportive Design Issues:

This site was originally planned by the city for a regional mall. The city is interested in encouraging a mixed-use development that could incorporate transit-supportive design. A mix of uses, developed on pedestrian and transit-supportive streets and blocks creates a built environment that serves both neighborhood and large-scale retail activity.



Prototype Application:

The recommended plan overlays a strong street grid throughout the project area. Renner Road and Maurer Road continue to serve as arterials. The comprehensive street network allows different uses to be developed in a compatible manner, with a mix of office, multi-family and retail uses. The grid street pattern also serves as an organizing element as uses change and properties redevelop. New development is kept at a pedestrian scale by virtue of the block size and street network. The natural drainageway is retained as an amenity, with the beginning of greenway connections running north, south, east and west, and a master stormwater management system.

The proposed town center incorporates a transit stop surrounded by a neighborhood commercial center that creates a gateway to the city off Johnson Drive and

I-435. Commercial and retail activity is concentrated near the interchanges, allowing the highest and best use of the land. The concentrated mixed-use neighborhood commercial centers are also easily served by transit in the future. Office development east of Interstate 435 maintains high visibility while serving as a buffer to residential development.

By using a network of streets and blocks as the foundation, mixing land uses, providing clear and efficient pedestrian connections to and from the various developments, and respecting the waterway’s natural drainage system, a development is created that meets the needs of today while remaining well poised for transit service in the future.

SHAWNEE

Shawnee, Kansas



Transit-Supportive Elements



- Structured and Shared Parking



- Convenient and Direct Pedestrian Connections
- Pedestrian-Scale Blocks
- Interconnected Street Network



- Increased Density in Neighborhood Centers
- Mixed-Use Buildings and Neighborhoods
- Inclusionary Housing



- Human-Scale Architecture
- Buildings and Entrances Oriented to Street



- Pedestrian-Friendly Streets
- Parks and Plazas as Community Gathering Spaces



Future Shawnee neighborhood



Future Shawnee town center



Before



After — Future Shawnee town center



Transit-Supportive Development

section 3: obstacles to success



Transit-supportive development has the potential to provide a wide range of mobility options, use land efficiently, conserve environmental resources and create affordable housing opportunities. Despite these benefits, there are regulatory, institutional, financial and market-based obstacles to achieving transit-supportive development patterns in metropolitan Kansas City.

REGULATORY OBSTACLES



Most Kansas City area communities have adopted comprehensive or land use plans, many of which are supplemented by area or sector plans. These plans are implemented primarily through adopted zoning and subdivision ordinances or unified development codes. Generally, these codes contain highly-detailed procedures that applicants must follow to obtain approval of proposed developments, including application submission requirements; process and time frames for staff; commission and governing body consideration; and evaluation and ultimate determination for each different type of development application (such as rezonings, special or conditional use permits, site or development plan, subdivision plats, building permits and the like.)

Generally, all the components (connections, building scale and orientation, public spaces, parking and land use mix and density) of a transit-supportive development pattern are addressed in most local government land development regulations. However, it is both the specific standards and their cumulation that all too often preclude a development pattern that allows transit and pedestrian travel to compete fairly with the automobile.

Regulations related to the subdivision of land set out the required improvements, the standards to which improvements must be built and provide for performance and maintenance guarantees.

By far, the largest and the most important component of these codes is the set of regulations that apply in each zoning district, including permitted uses, height, setbacks, lot size, floor area ratios, landscaping and parking requirements.

Some codes include performance standards that apply to specified districts or to designated uses.

Most developers, home buyers and business owners are comforted by regulations because they offer some degree of investment protection and market predictability. However, most existing development regulations are cumbersome documents that are composed of a number of prohibitions on what may be developed — they set forth **proscriptive** requirements for development. Minimum building setback and a minimum number of parking spaces for a given increment of development are two examples of **proscriptive** development regulations.

As a result, rather than providing an applicant with a clear picture of the type of development that the community desires and therefore what is most likely to be approved, the proscriptive regulations can become significant obstacles to achieving a transit-supportive environment.

It is becoming more and more obvious that the preferred approach may be to adopt **prescriptive** development regulations, which *prescribe* what is expected of development in different locations so the market can respond to the community's plan. "Build-to" lines and maximum parking standards are common examples of prescriptive development regulations.

When a code tries to list everything that is prohibited, the list grows and grows. The knowledgeable developers and builders often try to find a weakness in the ordinance. Once the weakness is uncovered, it is followed by staff and citizen attempts to tighten the regulations by adding additional prohibitions. This piecemeal approach to code drafting also creates problems because invariably the result is internal inconsistency due to the difficulty of identifying each and every interface between a new prohibition and the existing prohibitions. These inconsistencies create a whole new set of unintended but real prohibitions.

Over-sized public infrastructure requirements are a significant impediment to transit-supportive development. Often, these requirements are the result of our society's ever increasing dependence on the automobile as the sole source of

transportation and the notion that the only purpose for streets, regardless of their functional classification, is to move as many cars as quickly as possible from one destination to the next.

The demise, during the 1960s and 1970s, of our region's comprehensive public transportation system, rapid suburban development, increased concern over traffic safety, and the resulting need to move people longer distances from home to work, shopping, child care and the like, has resulted in the view that our local and regional street networks should be designed and built to serve only one function, the movement of automobiles. The important and historic purposes of streets as public space for community identity, for recreation

and for commerce have been lost as we build 45-mile-per-hour facilities.

One of the goals of transit-supportive development is to recapture the notion that new development, as well as in-fill development, can be designed to provide a mix of uses within close proximity to each other, thereby facilitating an individual's ability to choose to walk or ride a bike, rather than jump in the car, to reach daily destinations of necessity. A mixed use environment reduces dependence on the automobile as the sole means of travel and consequently, the need to build street networks designed only to serve one function.

CHECKLIST OF OBSTACLES



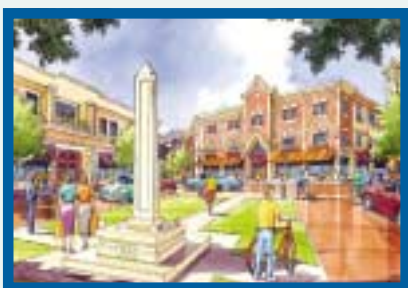
The following checklist highlights potential regulatory obstacles to a transit-supportive pattern of development.

Parking

- Limitations for on-street parking
- Lack of provision for shared parking
- On-site parking requirements
- Requirements to locate parking in front of buildings
- Minimum number of parking spaces per thousand square feet of non-residential development
- Minimum landscaping/screening requirements

Streets

- Street layout encouraging cul-de-sacs rather than a grid system
- Profile and design requirements focused on motor vehicles (e.g., no provision for bike lanes)
- Prohibitions on trees/landscaping in rights-of-way
- Long block lengths
- Wide pavement widths
- Wide rights-of-way requirements
- Traffic-calming limitations
- Private streets
- Prohibitions on alleys



Access

- Ingress and egress restrictions
- Median design that restricts pedestrians

Setback and Yard Restrictions

- Lack of requirements for build-to lines
- Minimum setback requirements
- Limitation on yard encroachments
- Large front and rear yard proportions
- Minimum lot size
- Open space requirements
- Deep yard depths

Uses

- Non-cumulative zoning
- Prohibitions/limitations on mixed-use and mixed-density development
- Separate location of community/civic and public facilities and common open space from commercial and residential development
- Orientation of building facades to parking areas
- Height and intensity limitations and floor area ratios

Pathways

- Minimum width
- Placement with respect to rights-of-way lines
- Prohibitions on substitution of trails and pathways for sidewalks where appropriate
- No requirements for sidewalks from street to commercial building entrance

Public Spaces

- Failure to encourage or require public spaces
- No performance standard or locational requirements for public spaces

A companion goal is to design development so that it provides a functional interface with existing public transportation. This could result in increasing the willingness of individuals to use public transit and providing a built environment that encourages expansion of the existing transit system and the addition of new types of transit, such as light rail and commuter rail.

In some respects, the metropolitan area has gotten away from the principles of urban design that once made it the envy of many other regions of the country. In doing so, the result has been development patterns that reflect a reliance on the automobile as the sole source of transportation and a pattern of seclusion instead of neighborhood or community. Not surprisingly, development, is frequently not responsive to the spirit of a community's comprehensive plan or the principles expressed in this guidebook.

INSTITUTIONAL, FINANCIAL & MARKET RELATED OBSTACLES



The creation of an institutional environment in which those who want to develop transit-supportive projects or reside in a transit-supportive community are allowed to do so is not easy. Like nearly all change, it neither occurs overnight nor comes easily. The key to successful change is increased understanding by the persons and entities affected of the impact that change will have on them and their interests. At least in the initial stages, this can only be achieved through education about transit-supportive development and what it means to the different interests within the community. It is necessary to create a sufficient level of comfort with the precepts and benefits of transit-supportive development among affected institutions.

Though our metropolitan area has numerous nationally recognized examples of successful transit-supportive development, virtually all of them are products of an earlier era. Successful transit-supportive developments across the nation can and do serve as powerful examples of how they benefit a community and its residents, and how, if properly done, they can be profitable to various institutional participants. However, without recent examples of projects that have a track record here in the Kansas City region, there is always the concern that what works on the coasts or in other metropolitan areas, for a litany of reasons, may not



work in our area. To get beyond this initial hurdle and facilitate the development of some successful local examples to which we can point and from which we can learn, we must focus on education and planning.

Institutional obstacles often emerge whenever change is proposed. Fortunately, many institutional obstacles can be surmounted through education. Developers, citizens, public sector staff, transit users, and elected officials must all be part of the education process, both as teachers and as students.

Financial obstacles are often the result of the absence or limited availability of market feasibility data, and take the form of concerns over the financial risks of a particular project. Project designs with the most proven track records are the ones that typically receive the least rigorous scrutiny from lenders and the most favorable financing terms. In the Kansas City metropolitan area, these projects are generally single-use projects (particularly at greenfield locations, but also in-fill projects). New residential development, with very few exceptions, tends to be large lot subdivisions with a curvilinear/cul-de-sac street network and private amenities, such as pools, clubhouses and open space. In many respects, these conventional development patterns — the ones with the proven track record — are the antithesis of transit-supportive development, which is characterized by mixed-use projects with pedestrian-friendly street networks and public amenities.

Transit-supportive development is frequently multi-phased and longer-term projects. Because of their proven track record, and thus greater predictability, conventional projects are generally more quickly and easily financed. For private sector participants in the development process, “time is money.” Furthermore, the increased complexity of multi-use projects is likely to increase the cost of project financing.

CHECKLIST OF OBSTACLES



The following is a checklist of institutional, financial and market-related obstacles that have to be addressed to achieve transit-supportive development in our region.

Lack of familiarity with and understanding of transit-supportive principles and their benefits by:

- Public sector staff
- Elected officials and planning commissioners
- Developers
- Commercial tenants
- Lenders
- Citizens

Lack of clear transit-supportive goals by local communities

Lack of understanding or presence of regional and local multi-modal transportation plans, that include transit, bicycle and pedestrian travel accommodations and facilities

Lack of understanding of the market for transit-supportive development

- Lack of public recognition that the ability to walk to destinations is not limited to certain times of year or weather conditions
- Perceived security that comes with conventional, particularly residential, subdivision development
- Lack of awareness that transit-supportive developments are quality living, working and entertainment environments
- Perception by commercial tenants that they require low density auto-oriented locations for their customers and employees
- Difficulty of getting adjacent landowners/ developers to work together or to assemble land for development of a comprehensive transit-supportive development project
- Lack of any recent projects in the area that demonstrate transit-supportive development principles for all the different stakeholders to study
- Difficulty of getting comprehensive/master plans in place to guide development before critical tracts get developed in a manner that is not consistent with transit-supportive development

Limited financing options for transit-supportive development

- Reluctance of lenders to finance other than tried and true approaches to development and concern by developers in being able to secure financing at reasonable cost and in a reasonable timeframe
- No clear identification of public sector incentives and financing mechanisms to assist in transit-supportive projects
- Need for coordination between multiple financing sources for mixed-use development

Development approval processes

- Lack of understanding of what the term “Transit-Supportive Development” means
- Time is money — the concern that unconventional projects will take too long in staff (planning, public works, traffic engineers and public safety) reviews, in consideration by decision makers and will create unnecessary public controversy
- Perception that a transit-supportive project will never get approved because of regulatory obstacles or will require so many variances or exceptions that are time-consuming and expensive to obtain and may be denied
- Perception that entire new code provisions (district or overlay district regulations) may be needed to accommodate transit-supportive development.
- Lack of awareness that conventional development patterns can become more transit-supportive with minor changes
- Perception that transit-supportive development is always very dense/intense development
- Perception of the effect of transit-supportive development on adjoining and nearby property owners in terms of property values
- Perception that transit-supportive development means unacceptable financial, race, age, ethnic and other integration
- Perception that transit-supportive development automatically means unqualified support for public transit
- Desire by some members of the development community to get the project built, get their return on investment and sell. For many, this translates into only doing the tried and true.



This is not to say that transit-supportive development projects are not able to be financed, but it is more a recognition of this significant hurdle that must be overcome during this period of change.

Recent research suggests that infill transit-supportive projects in urban locations are more easily financed than mixed-use, transit-supportive projects in new growth/greenfield locations. Lenders often cite the following concerns with suburban infill projects:

- Limited number of comparables to the unique nature of transit-supportive projects.
- Neighborhood opposition to higher densities and mixed uses.
- Potential buyers and tenants may not respond favorably to higher densities or pedestrian orientation.

One thing that is readily apparent is that institutional lenders and development partners are much more likely to respond quickly and favorably to a transit-supportive development plan when there is a strong developer with similar experience and where the plan was developed in a highly participatory public setting with full buy-in from neighborhood groups, property owners and elected officials.

Another key market obstacle to transit-supportive development is consumers' lack of understanding of new development. Persons looking to locate a business or to choose a place to live generally are not familiar with real examples of quality transit-supportive development. Those vaguely familiar with the term and its principles often have mistaken impressions of what it is and particularly of its benefits.

In a market dominated by conventional development approaches, with wide open personal spaces and relative seclusion from neighbors, some perceive the more dense, multi-use transit-supportive development as unsafe, congested and lacking privacy. These perceptions also

include reduced property values because of the mixing of residential with commercial uses as well as persons of varied economic income levels.

Statistics on operating transit-supportive projects show these perceptions to be inaccurate, but they are, nevertheless, difficult to overcome. More and more people are beginning to appreciate the benefits of transit-supportive development and a change in perception is becoming evident. The change in market understanding is slow and the obstacles are large and real though, not insurmountable. Again, the keys to overcoming these market obstacles are education and track records of local success.



Transit-Supportive Development

section 4: enabling smart choices



Conquering Regulatory Obstacles

Each of the potential obstacles to transit-supportive development (TSD) implementation identified in Section 3 have been overcome by hundreds of successful local governments and developers in diverse regions around the nation. The following table summarizes regulatory barriers that the principles of transit-supportive development are likely to encounter and offers a suggested solution to surmount them.

Where appropriate, example codes are suggested. A collection of suggested codes from other jurisdictions are included in the Appendix of this guidebook. Design review strategies addressing regulatory obstacles related to the specific site-planning elements of transit-supportive development are also reviewed in this section.



DIRECT PEDESTRIAN CONNECTIONS



Example Codes:

An on-street pedestrian circulation system that links the street and the primary structure(s) on the site shall be provided. Sidewalks or pedestrianways must connect the required pedestrian system on adjacent developments if adequate safety and security can be maintained. Convenient pedestrian access to transit stops shall be provided. (Clark County, Washington)

Pedestrian walkways shall form an on-site circulation system that minimizes conflicts between pedestrian and traffic interface at all points of pedestrian access to on-site parking and to building entrances. Pedestrian walkways shall connect building entrances to one another, to on-site parking and from building entrances to public street entrances and existing or planned transit stops.

Pedestrian walkways shall be provided when the pedestrian access point or any parking space is more than 75 feet from the building entrance or principal on-site destination as follows:

- 1. All developments that contain more than one building shall provide walkways between the principal entrances of the buildings.*
- 2. All nonresidential buildings set back more than 100 feet from the public right-of-way shall provide for direct pedestrian access from the building to buildings on adjacent lots. (Metro-proposed language for King County, Washington)*



PEDESTRIAN SCALE BLOCKS



Identified Obstacle

Land development codes often do not reflect an overall vision for urban design. Most communities experience development one parcel at a time. Without a pedestrian plan or clear standards for pedestrian accommodation, initial increments of development do not set a precedent for walkable blocks.

Suggested Solution

Short, walkable blocks increase the pedestrian attractiveness of an area, increase opportunities for retailers and set a precedent for subsequent development. Most people will walk about 1500 feet to shopping areas or to transit.

Example Code: The street shall be designed to create blocks that are generally rectilinear in shape...or another strict geometric shape. Amorphously shaped blocks are generally discouraged, except where topographic or other conditions

necessitate such a configuration. To the greatest extent possible, blocks shall be designed to have a maximum length of 480 feet. Alleys shall be permitted to bisect blocks. (Nelessen Model Ordinance)



BUILDING SCALE AND ORIENTATION & PUBLIC SPACES



Identified Obstacle

Without a highly detailed, illustrative master plan, it becomes impossible to ensure that prominent sites are reserved for either public open space or important civic uses or that buildings are constructed in a fashion to lend dignity to these spaces.

Development standards often do not take into account a project's relationship to future or existing development. Consequently, each increment of new development has its own unique context, which often results in the project's inability to coexist with the surrounding built environment in a manner that does not necessitate automobile use. New development rarely happens in a single phase constructed by a single applicant. Therefore, even though subsequent increments of development may be responding to the same code, the overall pattern appears uncoordinated.

Suggested Solution

Where a community has identified a particular area for the encouragement of a transit-supportive development pattern, an illustrative plan should be prepared to show the desired location of buildings, streets and pathways. The preparation and local acceptance of such a plan will set the standard by which development proposals are reviewed.

Establishing an overall specific or “master” plan in advance can ensure that an area is built in a coordinated fashion. A specific plan for a moderately sized geographic area should be adopted to prescribe the location of buildings, parks, streets and neighborhoods. This plan is most effective when prepared with a high degree of public involvement and includes input from neighborhood groups, property owners and city staff.

This planning effort should result in an amended land development code to include both regulatory language and the physical plan itself. Some jurisdictions might choose not to limit transit-supportive development to a particular district, but instead choose to either enable or require such development for the community at-large. This is more difficult to accomplish without a physical plan, but has been accomplished through the development of precise land development regulations, performance standards and policy incentives, such as those identified in this guidebook.



PARKING



Identified Obstacle

It is the automobile’s need to be stored that presents one of the largest barriers to transit-supportive development. Parking standards are often oversized when developers are required to build parking facilities to a minimum size as dictated by a regulatory standard that is gauged for peak season. Institutional lenders often dictate minimum parking standards without an understanding of the true costs or an understanding of the ability to share parking facilities among complementary uses.

Suggested Solution

Parking provisions are one of the most important tools for ensuring a transit-supportive pattern of development. TSD parking standards simply balance the needs of the automobile with those of the pedestrian and transit customer. Balance is the key term here. Revised code standards can remedy ill-advised size and location requirements on parking. Parking code revisions should address the following requirements:

- Dividing parking area into smaller segments to the side or rear of the buildings
- Landscaping between parking area and sidewalk to protect the pedestrian
- Restrictions on parking between buildings and the street
- Developing maximum parking standards for TSD sites
- Preferential park-and-ride and rideshare parking
- Sizing parking facilities to reflect a mix of uses
- Shared and combined parking arrangements.



LAND USE



Identified Obstacle

The largest barriers to the development of mixed-use buildings, neighborhoods and commercial centers are zoning ordinances that dictate separated single uses. Under many of these codes, a corner store in a residential neighborhood or an apartment building near an employment center is treated as noxious uses — not unlike an oil refinery or hog rendering works. Planned Unit Developments (PUDs) were intended as a mechanism to encourage mixed uses. Unfortunately, this policy mechanism lacks the necessary precision to foster the mix of uses needed to enable transit-supportive patterns.

Suggested Solution

Begin by updating zoning ordinances to allow the following land use mix: limited commercial in residential zones, multi-family residential in commercial zones, and limited retail in industrial zones.

For commercial centers, modify zoning ordinances to encourage a mix of uses that allow for apartments and offices as well as stores.

Provide and encourage density bonuses and/or an expedited review for mixed-use development proposals. Allow certain home occupations in residential neighborhoods.

RELATED OBSTACLES



Institutional Obstacles

Many people who are thoughtful about our built environment feel the public and private institutional arrangements associated with the land development process conspire against the establishment of any development form besides the “same old thing.” If “location, location, location” is the first rule of real estate, it seems as if, “do not attempt anything new” might be the second rule. Developers, lenders, even elected officials and planning commissions do not like to risk their resources or reputations on a new product if they believe it to be “untested.” This challenging obstacle can be overcome through education, planning and community empowerment.

Education

The five transit-supportive development principles are by no means new or innovative in and of themselves. Effective use of each principle can be found in many of the metropolitan region’s most valued places. In many respects, education is the core purpose of MARC’s Smart Choices initiative. The initiative has attempted to achieve this purpose by holding public meetings to inform the community about the principles that underlie transit-supportive development and how they can work in concert with one another to produce a more desirable environment.

Smart Choices has shared the experiences of national entrepreneurs and local elected and appointed officials and demonstrated that transit-supportive development is profitable for the developer and local government. The MARC program has demonstrated that the principles of transit-supportive development can be applied to Kansas City area sites. This guidebook should motivate local government officials to evaluate their own development codes and identify changes that can be made to facilitate or encourage use of the principles to guide development in their communities.

Planning and Community Empowerment

In addition to change through education, institutional barriers to transit-supportive development are often directly addressed during the planning process itself. Each of the prototype (re)development scenarios contained in Section 2 were developed with participation of actual property owners, elected officials, planning staffs, developers and neighborhood leaders. The prototypes are the result of a two-way learning process between these stakeholders and the planning and urban design team.

These prototypes demonstrate that, when presented with a clear set of design principles, and the opportunity to make their voices heard, community stakeholders almost always develop planning and urban design solutions that are workable and innovative. Because of the plan’s high degree of public ownership, institutional barriers to change become much less daunting.

MOLDING A NEW REALITY: IMPLEMENTATION



Implementation really takes place on two levels: planning and development review. Implementation at the planning level requires the ability to reach a consensus between diverse stakeholders and to graphically illustrate the plan. Implementation at the development review level requires that local governments have in place land development regulations, guidelines and incentives that are precise enough to express community goals and objectives without sacrificing flexibility for innovative approaches.

The Planning Process

When a local government has targeted a specific site or district as a candidate for transit-supportive development, a prescriptive master plan should be developed in order to ensure there is no confusion regarding community expectations.

An intensive and formal public planning process is encouraged for large-scale (re)development at the neighborhood or commercial activity center levels. The checklist below provides an evaluation methodology for this planning process:

Extensiveness of Public Involvement

A public involvement program does not have to incorporate all of the study methodologies provided below. A citizen survey may be effective in measuring local priorities and issues in one setting, while a charrette in another setting may be more successful.

- Was a workshop or charrette held that actively involved stakeholders in the planning and design process?
- Were focus groups created?
- Was a citizen task force formed?
- Were citizen surveys conducted?
- Did the process have an adequate and active representation of community stakeholders?

Responsiveness of Public Involvement Program

The public involvement process should be a two-way discussion. The purpose of developing a project in a highly public forum is to encourage and facilitate feedback. Simply providing information to the community without any room for flexibility is self-defeating.

- Were the goals and objectives of the project refined to reflect the public input received?
- Were a distinct set of guiding principles introduced?
- Did the process include a diversity of ideas?
- Were these ideas integrated through public discussion?
- Was a wide range of solutions considered?

Physical Characteristics

The physical aspects of the project should work towards creating an environment where all modes of transportation are convenient, safe and comfortable. At the same time, the design of the project should be sensitive to surrounding uses. Engineering documents and architectural plans are produced in great detail and with care, yet the successful incorporation of each element with the existing surroundings and complementary design elements does not always occur. While the elements of the design are not impacts themselves, they do affect the transportation, economic and social impacts created by the project.

The following checklist provides guidelines for evaluating specific elements of the plan developed and their transit-supportive potential.

- Are building entrances oriented along the street and sidewalk?
- Is the building architecture sensitive to the surrounding context?
- Are buildings designed with overhangs, awnings, and highly articulated facades?

Streets and Parking

- How well connected is the street network?
 - Are there cul-de-sacs and/or dead end streets?
 - Are there multiple access routes to destinations within the site?
- What pedestrian amenities are provided?
 - Are there street trees to provide shade?
 - Are benches and other seating areas present?
- Does the placement of parking facilities interfere with pedestrian movement?
- Are surface lots placed behind buildings?
- Are pedestrian pathways provided through parking lots?
- Is joint/shared parking used?
- Is on-street parking (parallel or angled) used?

Transit

- Are transit stops located close to building entrances?
- Are transit stops located near major employment and commercial centers?
- Do waiting areas at transit stops include seating and weather protection devices?

Pedestrians

- Are public gathering spaces such as parks and plazas present?
- Is there a convenient, well-connected network of sidewalks throughout the development?
- Are sidewalks provided along all streets? Are they wide enough to accommodate pedestrian movement? (Commonly used standards for sidewalk width are 5' in low-traffic areas and 10-15' in high-traffic residential and commercial areas.).
- Are there sidewalk connections between adjacent buildings?
- Are there pedestrian connections from the development to surrounding areas?

Bicyclists

- Are streets designed to be bicycle-safe?
 - Are "Share the Road" signs posted along low-volume streets?
 - Are high volume streets (ADT of 10,000+ cars per day) designed with bike lanes?
 - If high-volume streets cannot be designed with bike lanes, is the street traffic calmed with posted speed limits of 25 to 30 miles per hour?
- Are secure bicycle parking facilities provided at transit stops, commercial districts, office buildings and at automobile parking areas?

Site Plan

The overall site plan should establish an appropriate relationship with surrounding neighborhoods. The design along the edges of the site should be compatible in scale and appearance with adjacent uses. Just as important, however, is that the site be well integrated into surrounding areas and not be designed with barriers to isolate it from nearby developments. This makes it easier for the pedestrian-friendly environment created on the site to spread into adjacent areas.

- Are the buildings along the edge of the site oriented outward along existing streets?
- Does the site contain multiple connections to surrounding neighborhoods?
- Does the development contain a high mix of land uses (proximity of residential, commercial, and employment centers)? More is better.

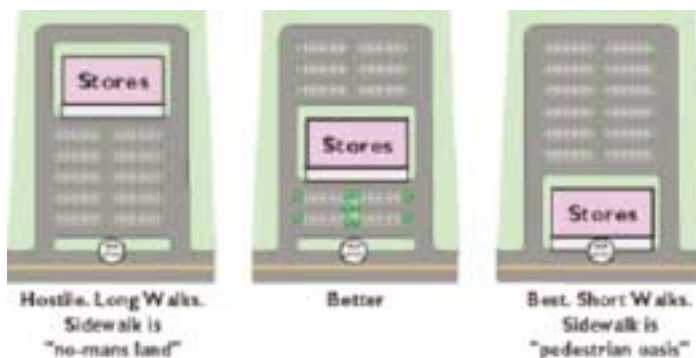
SITE LEVEL DESIGN ELEMENTS THAT PROMOTE TRANSIT-SUPPORTIVE DEVELOPMENT



Through precise development review standards, a local government can encourage transit-supportive development without the adoption of a detailed master plan. The following section identifies physical design elements typically addressed during the review process and recommends transit-supportive design guidelines. The codes located in the appendix should assist local governments in refining the recommendations into standards suitable to their individual community needs.

Building Placement

Much of the current development pattern is oriented toward the automobile. A building can reduce walking distances for customers and make streets more useful for pedestrians, transit customers and cyclists.



Orienting building entrances along the street reduces walking distances and also helps create a continuous street wall over time

Site Design Review Recommendation: Encourage the placement of buildings up to the building line with parking behind the structures. The type of placement will facilitate walking by minimizing travel distances, providing direct access to buildings, and thereby creating a pedestrian- and transit-friendly streetscape.

Moving parking facilities from between the front of the building and the street

A vast sea of parking adjacent to sidewalks and surrounding buildings gives the automobile an unfair advantage over transit or non-motorized modes of travel. Shifting parking to the sides of buildings reduces the walking distance from the sidewalk and helps to create an interesting street wall. Parking in unchanged quantity, but in a new layout is as accessible as before.

Site Design Review Recommendation: Discourage parking between buildings and the primary street. Commercial establishments may require parking directly accessible from the street. This can be accomplished by rotating the building 90 degrees to allow for sidewalk frontage and visible parking.



With parking rearranged, the sidewalk is transformed into a viable pedestrian facility.

Create spatial enclosure/definition

Enclosure/definition means the degree that the edge of the street is defined. Commercial streets typically lack enclosure when parking lots dominate the streetscape. Residential streets lack enclosure when trees fail to make up for large setbacks and empty spaces between residences.



Enclosure creates a human-scaled pedestrian environment by clearly defining the edge of the street.

Site Design Review Recommendation: Establish maximum setbacks (build-to) in commercial areas and visually fill in spaces between sidewalks and buildings. Ideally, maximum setbacks should be established so that the building height to street width ratio is no less than 3:1, thereby creating a feeling of spatial enclosure which dignifies the street as a public space, calms traffic and creates a pedestrian amenity. Residential subdivision requirements should specify street trees.



Features such as street trees and buildings are placed near the street in order to minimize vast transit unfriendly "voids" beside the paved roadway.

Promote highly-articulated buildings

Highly articulated storefronts and homes add interest and variety to the pedestrian experience. Detailed building facades generally provide unique visual sequences that focus pedestrian attention on the setting rather than the walk itself. Many studies conducted throughout the country have documented how redundant environmental forms and sequences have the ability to extend the pedestrian's perception of time and space.

Site Design Review Recommendation: Encourage the use of interest-creating features on ground floor facades. A minimum of 75 percent of new or reconstructed first-floor wall shall contain interest-creating features.



Highly articulated buildings such as these visually shorten perceived distances and encourage pedestrian activity.

Encourage Overhangs, Awnings, and Balconies

Drivers and passengers in automobiles have the advantage of heating and air conditioning to protect them from weather. This advantage is not available to the pedestrian. Overhangs, awnings, and balconies provide shade and cover.

Site Design Review Recommendation: Where possible, building designs should attempt to incorporate awnings, arcades and shelters into their architecture.



Awnings and overhangs protect pedestrians from rain, snow, and sun.

Incorporate Transit Stops into Building Architecture, Provide Shelters, Waiting Areas and Seating

It is unfair to place the responsibility for encouraging transit ridership solely upon the transit agency. Private employers and developers should use underutilized land to provide facilities that encourage transit use.

Site Design Review Recommendation: Encourage inclusion of transit waiting areas into either site plans or building architecture. Include transit operators in the site plan review process.



Developers and employers can support transit by providing convenient and comfortable waiting areas.

Connections within Developments and to Adjacent Properties

Improved internal pedestrian circulation is a fundamental element of the both the transit-supportive and “park-once” environment, where citizens can comfortably walk between buildings and are not required to use the car (or transit coach) for any trip other than arrival and departure from an activity center.

Site Design Review Recommendation: Require new developments to feature walkways among all buildings, public open spaces and parking areas. Additionally, there should be direct linkages to neighboring land uses without requiring use of the primary street.



By providing walkways between buildings and properties, the needs of pedestrians are better balanced with those of the driver.

Allow for future street extensions

New development should provide street connections for vehicles in all major directions to and from a site. They should also connect the development to existing neighborhoods, as well as anticipated neighboring development with street dedications or interim “stub-outs.” The future developer of the adjacent property must then connect to the stub-out and maintain a permeable street network. As development intensifies, street connections will evolve into a complete street system, providing a high level of mobility and adding to the value of the served properties.

Site Design Review Recommendation: Encourage the use of stub-outs at locations that are consistent with proper block length.

Parking

Over one-half of the built environment in urbanizing areas is devoted to automobile storage. This makes transit-supportive development patterns very difficult to achieve. Minimum parking standards often do not allow for sharing between adjacent complementary uses.



Because lenders and zoning codes often gauge the number of required spaces to the highest possible demand, these parking lots are often empty for the largest percentage of business hours.

Site Design Review Recommendations: Require large parking lots to be divided and separated by landscaping or a building. Site design standards should ensure that the entrances of a multi-building site are clustered. Also, eliminate or reduce parking requirements for transit-supportive development proposals, downtowns and pedestrian zones that are well served by transit. Allow developers to negotiate for reduced parking minimums for mixed-use projects.

Provide and encourage use of on-street parking

On-street parking is a powerful tool for pedestrian safety, parking capacity, and street-front retail viability. Parked cars act as a buffer between moving traffic and the sidewalk, and the visible parking spaces counterbalance the need to locate parking between buildings and the primary street.

Site Design Review Recommendation: Promote walking by providing a buffer between the pedestrian and moving traffic with on-street parking. Allow on-street parking spaces to be included in the count of available spaces.



These valuable Kansas City area addresses are on streets designed with on-street parking, street trees and wide sidewalks, all of which buffer pedestrians from moving traffic.

CREATING INCENTIVES



Incentives available to local governments for the implementation of transit-supportive development fall into three categories: public investment, public policy, and fiscal.

Public Investment Incentives

Public investment is the one of the most powerful tools local governments have available to them for shaping the form and function of development. In fact, much of today's conventional, auto-oriented environment is a market reaction to public investment in a new or improved highway or interchange. Public investment can serve as a powerful inducement for transit-supportive development.

Such types of investments might include well-designed and placed transit facilities such as "super stops," park-and-ride stops or the construction of starter buildings around transit stations. These transit facility investments may support economic development goals as well as set a precedent (form and scale) for future development. Other public investment opportunities that have proven potential to foster a transit-supportive development pattern include: brownfields redevelopment, farmers' markets, schools or libraries, local housing authority projects, parks and other public spaces or facilities.

Public Policy Incentives

Local governments can also build powerful incentives into the development approval process through the development of high quality plans and by streamlining the often burdensome approval process.

The Plan as Incentive

Quality planning, as demonstrated in the prototypes, in and of itself can be a powerful incentive for developers. The creation of a highly detailed master plan (and regulating code) for a district or large site targeted for transit-supportive development has proven to be a powerful way for a community to attract smart developers. If prepared with the full "buy-in" of the local development community, business and political leaders and neighborhood groups, development under the new plan will ease a lot of headaches for developers, because they already know exactly what is "pre-approved" in the minds of local planners and neighborhood groups. More often than not, the pre-approved development program is of a higher value than what would have been allowed under the previous entitlement.

The Approval Process as Incentive

Local governments can leverage the development approval process in a manner that encourages locally desirable projects. Many local governments have successfully used the approval process to both educate applicants about smart growth concepts and encourage implementation at the project level. Developers are always on the lookout for ways to reduce the "soft costs" associated with a process that is seen as cumbersome and time- (*read: money-*) consuming.

A prescriptive land development code is one that is easily interpreted. Many jurisdictions have condensed their codes into checklists or evaluation matrices for quick approvals, fee reductions, density bonuses, and parking reductions. The city of Austin, Texas, is currently experiencing success with its "Smart Growth Criteria Matrix." This easy to use matrix measures a proposed development's ability to satisfy adopted community goals. Projects earning high scores receive waived or reduced fees and protection from property tax increases for up to 10 years.

Because transit-supportive development has the unique ability to not only generate less traffic, but reduce traffic, local governments could allow applicants to submit special traffic studies in return for an excise tax reduction. These credits can not only be applied to proportionate-share transportation taxes, but to parks or other impact-type fees.

Fiscal Incentives

Local governments also have the ability to provide fiscal incentives to developers willing to depart from conventional projects. One such incentive might include tying the formation of tax increment financing or municipal services taxing districts to a transit-supportive design. Fiscal incentives may also be used to encourage public-private partnerships through the sharing of infrastructure costs, the structuring of bond issues, and the formation of community improvement districts.

FINANCIAL OBSTACLES



There are two forms of financing for development projects: equity and debt. Equity is simple ownership — money invested in hope of a return that justifies its risk. Debt is a contract for the use of funds in return for repayment of such funds with interest. Equity financing typically comes from individual investors, real estate investment trusts, non-profits and insurance companies. Historically, transit-supportive developments have relied upon equity financing, but more and more lenders are starting to realize the value of non-conventional development patterns, especially, local banks with a good handle on their markets and local preferences.

Non-conventional development proposals often fare poorly when tested using conventional market feasibility analysis techniques, but almost always succeed nonetheless. For instance, there has been a recent housing boom in downtown Kansas City, which could not have been predicted by conventional techniques. This may be because traditional market analysis relies upon comparables and retail demand analysis rather than identifying and targeting historically proven demographic groups that have an unsatisfied demand for walkable and compact neighborhoods and commercial centers. The identification of these groups and sharing information with them are important steps in developing market studies that are predictive of actual outcomes.



Transit-Supportive Development

appendix: sample transit-support ordinance provisions



Travel Connections



Convenient and Direct Pedestrian Connections

An on-site pedestrian circulation system that links the streets, parking and the primary entrances of the structure(s) on the site shall be provided. The pedestrian system may include sidewalks or pedestrian trails. These sidewalks or pedestrian ways must connect the pedestrian system to existing and/or proposed pedestrian systems on adjacent developments unless it is determined that adequate safety and security can not be maintained. Convenient pedestrian access to transit stops shall be provided.

[Clark County, Washington]



Convenient and Direct Pedestrian Connections

Pedestrian circulation systems must be provided to facilitate movement within the Urban Planned Unit Development (PUD) and to ensure pedestrian access to adjacent walkways and residential streets and to public uses, including school, parks and transit facilities. The City Engineer may require the walkways to be within public right-of-way or easements dedicated to allow rights of passage.

[Tri-Met: Portland, Oregon]



Convenient and Direct Pedestrian Connections

Pedestrian walkways shall form an on-site circulation system that minimizes conflicts between pedestrian and traffic interface, at all points of pedestrian access to on-site parking and to building entrances. Pedestrian walkways shall connect building entrances to one another, to on-site parking and from building entrances to public street entrances and existing or planned transit stops. Pedestrian walkways shall be provided when the pedestrian access point or any parking space is more than 75 feet from the building entrance or principal on-site destination as follows:

1. All developments that contain more than one building shall provide walkways between the principal entrances of the buildings.
2. All nonresidential buildings set back more than 100 feet from the public right-of-way shall provide for direct pedestrian access from the building to buildings on adjacent lots.

[Metro-proposed language for King County, Washington]



Convenient and Direct Pedestrian Connections

Pedestrian-way easements (10) feet wide, through the center of blocks more than 600 feet long, may be required by the approving agency in order to provide convenient pedestrian access to transit stops, a station, to shopping, or other community facilities.

[State of New Jersey Model Site Plan Approval Ordinance]



Pedestrian Scale Blocks



Pedestrian Scale Blocks

The street shall be designed to create blocks that are generally rectilinear in shape, a modified rectilinear shape, or another distinct geometric shape. Amorphously shaped blocks are generally discouraged, except where topographic or other conditions necessitate such a configuration. To the greatest extent possible, blocks shall be designed to have a maximum length of 480 feet. Lanes (alleys) shall be permitted to bisect blocks.

[Anton Nelessen]



Pedestrian Scale Blocks

Street block lengths shall not exceed six hundred sixty (660) feet (1/8 mile) between intersecting through streets, on each side of the street.

[Proposed Lee’s Summit, Missouri]



Convenient and Direct Pedestrian Connections

The proposed subdivision is laid out to provide safe, convenient, and direct bicycle and pedestrian access to nearby and adjacent residential areas; transit stops; neighborhood activity centers such as schools and parks; commercial areas; and industrial areas; and to provide safe, convenient and direct circulation. At a minimum, “nearby” is interpreted to mean uses within ¼ mile that can reasonably be expected to be used by pedestrians and uses within 1 to 2 miles that can reasonably be expected to be used by bicyclists.

[Decision Criterion for Subdivisions: Eugene, Oregon]



Bicycle Circulation and Parking



Interconnected Street Network

Cul-de-sacs, dead end streets and flag lots* shall only be permitted when the following condition is met:

One or more of the following conditions prevent a required street connection: excess slope (20 percent or more); presence of a wetland or other body of water that cannot be bridged or crossed; existing development on adjacent property that prevents a street connection; presence of a freeway or railroad.

Cul-de-sacs, when permitted shall be as short as possible and shall in no event exceed 400 feet in length.

(*Note: Flag lots are lots that do not front on or about a public street and that are accessed via a narrow, private right-of-way. They can result in an increased number of curb cuts.)

Cul-de-sacs shall be permitted only where there is no feasible connection with an adjacent street. If cul-de-sac streets represent more than 10 percent of the total lane miles in a development, the subdivider shall be required to demonstrate that alternative internal circulation systems that would minimize use of cul-de-sacs are infeasible.

[Tri-Met: Portland, Oregon]



Interconnected Street Network

Street networks shall be designed and laid out to provide direct connections between light rail transit stations and transit stops, commercial and residential areas, schools, parks and other public facilities. New local streets, including extensions of existing local streets, shall connect with existing local streets and arterials. Cul-de-sac streets shall be permitted only where it is determined there is no feasible connection with an adjacent local street. If cul-de-sac streets represent more than 10 percent

(or alternative threshold) of the total lane miles in a development, the subdivider shall be required to demonstrate to the satisfaction of the _____ (City Engineer or other reviewing authority), that alternative internal circulation systems which would minimize use of cul-de-sac streets are infeasible.

[Tri-Met: Portland, Oregon]



Convenient and Direct Pedestrian Connections

Where the subdivision or lot division is adjacent to land likely to be divided in the future, streets, bicycle paths, and accessways shall continue through to the boundary lines of the area under the same ownership as the subdivision or lot division, where the planning or public works director determines that the continuation is necessary to provide for the orderly division of the adjacent land or the transportation and access needs of the community.



Interconnected Street Network

Where the subdivision or partition will result in a lot or parcel one-half acre or larger in size, which, in the judgment of the planning director is likely to be further divided in the future, the planning director may require that the location of lot and parcel lines and other details of layout be such that future division may readily be made without violating the requirements of this code and without interfering with orderly extension of adjacent streets, bicycle paths and accessways.



Bicycle Circulation and Parking

Where the subdivision or partition includes only part of the area owned by the applicant, the planning director or public works director may require a sketch of a tentative layout of streets, bicycle paths, and accessways in the remainder of the ownership.

[Eugene, Oregon]



Bicycle Circulation and Parking

Bicycle parking spaces shall be provided as required by this section. Bicycle parking shall be in addition to automobile parking spaces.

Residential Use Classifications

- Multi-family: 1 space per unit
- Dwelling: (0.25 per unit if occupancy restricted to 55 years or older)

Public and Semi-public Use Classifications

- Colleges: 0.25 spaces per full-time equivalent student
- Elementary Schools: 4 spaces per 4th, 5th and 6th grade classroom
- Jr. High Schools: 4 spaces per classroom
- High Schools: 8 spaces per classroom
- Other Uses: As specified by conditional use permit. A requirement for annual or periodic review of bicycle usage may be imposed, and additional spaces may be required if demand warrants.

Commercial and Industrial Use Classifications: 5 percent of the requirement for automobile parking spaces, except for the following classifications, which are exempt:

- A. Animal Sales and Service
- B. Auto-related Uses
- C. Warehousing: Wholesale and Distribution

Bicycle Parking Space and Aisle Dimensions

1. Uncovered spaces shall be at least 6 feet long and 2 feet wide.
2. Covered spaces shall be at least 7 feet long and 2 feet wide.
3. A 5-foot wide aisle is required adjacent to each row of bicycle parking.

Design Requirements. For each bicycle parking space required, a stationary rack shall be provided which can accommodate bicyclists' locks securing the frame and wheels, or a lockable enclosure in which the bicycle is stored.

1. All of the required bicycle parking for colleges, schools, multi-family residences, and industrial uses and at least 50 percent of the required bicycle parking for commercial uses shall be covered to provide rain protection.
2. If the required vehicle parking spaces are covered, then the bicycle parking spaces shall be covered.
3. Required bicycle parking shall be provided within a building or in well-lighted, secure locations within 50 feet of an entrance to a building occupied by the use served, but no further from the building entrance than the closest automobile parking space.
4. Bicycle parking may be provided within the public right-of-way in zoning districts where no front setback is required, subject to approval of (appropriate local official).

[Tri-Met: Portland, Oregon]



Bicycle Circulation and Parking

A system of interconnected bikeways, consistent with the Comprehensive Plan and any applicable Specific Plan or corridor plan, shall be provided. Designated bike lanes (*Class II or alternate designation*) shall be provided on collector and arterial streets that converge on light rail transit stations or transit centers. Bikeways shall be provided at ends of cul-de-sacs between subdivisions where the routes would otherwise require deviations of over 100-400 feet. Sidewalk bike paths shall be avoided because they put cyclists in conflict with pedestrians. Bikeways shall be constructed at the same time that new streets are improved, unless a deferred completion agreement is approved by (*cite appropriate reviewing authority*).

[Tri-Met: Portland, Oregon]



Quality Facilities for Transit users

If a development is located within 250 feet of an existing or proposed transit stop, the applicant shall work with the transit agency in locating a transit stop and shelter directly adjacent or as close as possible to the main building.

[Clark County, Washington]

Public Spaces



Pedestrian Friendly Streets

Freestanding walls, fences and hedges along public streets may be used under the following conditions:

- a) Solid walls, fences and hedges four feet in height or less shall be allowed.
- b) Decorative walls, fences and hedges that allow visibility such as wrought iron and split rail fences, shall be allowed throughout the Transit Overlay District and shall not exceed six feet in height.
- c) Barbed wire, razor wire, electric fences, and other dangerous fences are prohibited in the Transit Overlay District.
- d) All allowable walls, hedges and fences between a building and public street must provide for access at least every 100 feet.
- e) Solid walls greater than four feet in height shall be allowed only if required by the director to mitigate significant noise impacts.

[Vancouver, Washington, Transit Overlay District]



Pedestrian Friendly Streets

Pedestrian access and walkways shall meet the following minimum design standards:

- Access and walkways shall be well lit and physically separated from driveways and parking spaces by landscaping, berms, barriers, grade separations, or other means to protect pedestrians from vehicular traffic;
- A crosswalk shall be required when a walkway crosses a public driveway or a paved area accessible to vehicles;
- Whenever walkways are provided, raised crosswalks (or other traffic-calming measures designed to slow traffic) shall be located at all points where a walkway crosses the lane of vehicle travel.

[Metro-proposed language to King County, Washington]



Pedestrian Friendly Streets

Provide amenities to protect pedestrians from wind, snow and excessive heat or sunlight.

- Where appropriate, canopies or arcades should be provided along the street frontage of buildings. However, they should be carefully designed not to obstruct views and access between building entrances, the sidewalk, and the street.
- Shade trees may be planted to provide additional climate protection and contribute to an attractive pedestrian environment.
- Landscape and building should be designed to improve wind patterns.

[Ontario Ministry of Transportation Guideline 3.5.2]



Parks & Plazas as Community Gathering Spaces

Pedestrian plazas shall be designed to allow some direct sunlight to enter the plazas. Pedestrian plaza landscaping shall be designed in a manner that does not block the entrance of direct sunlight.

[Olympia, Washington]



Parks & Plazas as Community Gathering Spaces

A Residential Open Space Plan that includes the following elements shall be provided with every residential preliminary development plan submittal.

A minimum of ten (10) acres for every three hundred fifty (350) dwelling units (approximately one thousand (1,000) persons) shall be designated as common open space. The proportion of public to private open space and the designated uses of the open space shall be determined by the City, based upon particular recreational, environmental, cultural, and scenic objectives in the area where the development is to be located.

Common open spaces shall be designed with usable sizes and proportions.

Common open spaces shall be distributed throughout the neighborhood. No residence shall be located farther than a ¼ mile walking distance from a common open space.

Existing natural features on a development site shall be preserved by incorporating them into common open space.

[Proposed Lee’s Summit, Missouri]

Building Scale & Orientation

At least one major building entry shall be oriented to the adjacent transit street and/or to the pedestrian route linking the site to the nearest transit street.



Building & Entrances Oriented to Street

The land between a building or exterior improvement and a street must be landscaped and/or hard-surfaced for use by pedestrians. If hard-surfaced, the area must contain two or more pedestrian amenities such as benches, drinking fountains, and/or other design elements (such as public art, planters and kiosks), and be physically separated from parking areas by a 3-foot deep landscaped area. Single-family dwellings, duplexes, and attached houses are exempt from this requirement.
[Tri-Met: Portland, Oregon]



Human Scale Architecture

No structure shall exceed 65,000 square feet in gross floor area. For the purpose of this section, the term “gross floor area” shall include outside retail areas.
[Easton, Maryland]



Human Scale Architecture

In the RPC and C-2 zones, no retail establishment shall exceed 65,000 square feet of total gross floor area. Retail establishments containing greater than 25,000 square feet of gross floor area and shopping centers of any size shall be subject to the design and site development guidelines below.

Aesthetic and Visual Characteristics

- a. Facades and Exterior Walls including Sides and Backs. The building shall be designed in a way that will reduce the massive scale and uniform and impersonal appearance and will provide visual interest consistent with the community’s identity, character and scale. Long building walls of at least 100 feet shall be broken up with projections or recessions of sufficient depth along all sides, and in sufficient number, to reduce the unbroken massing into lengths of approximately 50 feet or less along all sides of the building. . . Along any public street frontage the building design should include windows, arcades, awnings or acceptable features along at least 60 percent of the building length. Arcades and other weather protection features shall be of sufficient depth and height to provide a light-filled and open space along the building frontage. Architectural treatment, similar to that provided to the front façade shall be provided to the sides and rear of the building to mitigate any negative view from any location off-site and any public area (e.g., parking lots, walkways, etc.) on site.

[Rockville, MD Zoning Code]

Maximum Building Size.

No building except grocery stores in this district shall exceed 10,000 square feet in area for any single floor. “Building” for this purpose is defined as a separate structure or a building or tenant space sharing a common wall through which no access is allowed. Grocery stores shall not exceed 25,000 square feet in area for any single floor.

Architectural Standards

1. Structures other than single-family residential dwelling structures. All structures, except for single-family residential dwelling structures, shall be built to the street right-of-way line. Such structures on lots with frontage on more than one street line need only be built to one street line. At least three square feet of window

or door openings per lineal foot of street wall frontage shall be provided on the first floor elevation. For new construction or exterior renovation of existing structures, exterior materials, except doors and windows, shall be of stone, brick, stucco or wood.

2. Screening. Parking for nonresidential or mixed-use structures must be screened from the street by a wall, fence, landscaping or berm between 18 inches and 42 inches in height. Roof-mounted mechanical equipment must be screened from the view of the street and adjacent property. Dumpsters and other waste receptacles must be enclosed by a solid wall or fence at least as high as the receptacles.
3. Fences. New fences for nonresidential or mixed-use structures, other than those erected in satisfaction of the screening requirements of Section 52-34 (Parking Stations) of the Code of Ordinances or those enclosing dumpsters and other waste receptacles per this subsection, must be of wrought iron or decorative steel construction. Chain link fences, with or without opaque slat inserts, are prohibited in this district.
4. Lighting. Floodlights or lights which illuminate open areas in connection with any of the uses listed in this section shall be so arranged as to reflect the light away from any adjoining residential property, and the intensity shall not exceed two lux measured at any property line.

[Kansas City, Missouri: Brookside Business District]



Human Scale Architecture

Commercial and Industrial Size Limitations.

Notwithstanding the lot coverage requirements of each zone of Article IV, individual buildings in a non-residential development shall comply with the gross floor area (GFA) size limitations established in the table below. This table specifies the maximum gross floor area allowed above ground in an individual building.

GROSS FLOOR AREA (GFA), in square feet:

<u>Zone</u>	<u>Maximum square footage</u>	<u>Provisional square footage</u>
C-1	10,000	Not applicable
C-2	30,000	80,000
HCPD	30,000	80,000
CBD	30,000	Not applicable
M-1	30,000	80,000

Any business of the same type which occurs individually or jointly in a single structure or combination of structures situated upon a single tract of and under the same ownership, shall be considered one business and together restricted to the maximum GFA provided in this section.

Provisional Permit.

The GFA may be increased to the size shown for a provisional permit in the above table, following the application procedure outlined in this Code. The GFA allowed by a provisional permit shall not be increased by variance. The Commission and Town Council shall use the criteria outlined below for evaluation of a provisional permit.

- A. The size of the development is consistent with the uses in the general vicinity;
- B. The infrastructure will support the size of the building and development;
- C. The health, safety, and welfare of the Town of Taos are maintained;
- D. Compliance with all other requirements of this Code.

[Taos, New Mexico]



Human Scale Architecture

Downtown Commercial District Site Development Standards

- A. Each lot must abut a public street.
- B. Maximum residential density: 48 bedrooms per acre.
- C. Maximum structure height: 60 feet.
- D. Building facades shall maintain a consistent street edge, with the exception of passages for pedestrian access and drives to parking areas. The street elevation of principal structures shall have at least one street-oriented entrance and contain the principal windows of the structure.
- E. All rooftop equipment shall be enclosed in building materials that match the structure or which are visually compatible with the structure.
- F. Parking facilities shall be located behind the front building line. The administrator or town council may grant exceptions if necessary due to the shallow depth of a parcel, the location of existing mature trees, or other similar circumstances.
- G. Automobile entrances to the site shall be minimized and placed to maximize safety, maximize efficient traffic circulation, and minimize the impact on the surrounding area. A maximum of two curb cuts shall be allowed per street frontage. Factors including the number of existing curb cuts in the area, the potential for increased traffic hazards and congestion, and the number of travel lanes of the streets that serve the site shall be used to determine whenever more than one curb cut is required for reasonable access.
- H. All utility lines, electric, telephone, cable television lines, etc., shall be placed underground.
- I. Parking facilities shall be located behind the front building line.

[Blacksburg, Virginia]



Building & Entrances Oriented to Street

Primary ground floor building entrances shall have an entrance oriented to pedestrian-oriented streets, plazas, or parks. The building may also have other entrances so long as direct pedestrian access is provided from all entrances.

[Vancouver, Washington]



Building & Entrances Oriented to Street

Buildings...shall abut the street front sidewalk and orient the primary entrance, or entrances, toward the street.

[Redmond, Washington: pedestrian-oriented district]



Building & Entrances Oriented to Street

The maximum street wall setback (formed by buildings) is 10 feet. Setback areas (the area between the front property line and street wall) may be used for landscaping and small commercial uses designed primarily to cater to pedestrians, including, but not limited to, vendors, newsstands, flowers and cafes. Fences, large

trees and landscaping, or other features that form visual barriers or block views to street wall windows are prohibited. The street wall may be set back to retain scenic views and to provide transition to residential neighborhoods, to allow privacy in residential development, to meet centerline setback requirements, for building entrances, for pedestrian plazas, and to allow existing setback buildings as conforming uses. Large entryways that are integral to a building design may be set back more than 10 feet.

[Olympia, Washington]



Building & Entrances Oriented to Street

Primary ground floor commercial building entrances must orient to plazas, parks, or pedestrian-oriented streets, not to interior blocks of parking lots. Secondary entries from the interior of a block will be allowed. Anchor retail buildings may have their entries from off-street parking lots, however, on-street entries are strongly encouraged.

[Sacramento County, California]



Pedestrian Friendly Parking

Building setbacks from public streets should be minimized. “Build-to” lines should be established which reflect the desired character of the area and bring buildings close to the sidewalk.

[Sacramento County, California]

Buildings clustered near internal streets (should be encouraged in order) to minimize walking distances and to promote an attractive, active, and safe pedestrian-oriented streetscape within a project, (and) to accommodate bus service, carpooling, and vanpooling within a project.

[Montgomery County, Maryland]

No off-street parking shall be allowed between a public street or pedestrianway and the required frontage for a building, other than in a driveway accessory to residential development. Except as otherwise provided in this section, off-street parking shall be allowed only in surface lots on the side or rear of a lot, in an underground lot or in a parking structure, provided, however for commercial development (excluding the identified Downtown Center), parking shall be allowed between a public street or pedestrian way if it does not obstruct pedestrian access as defined in (Section ____) and there are unusual site characteristics making it impossible to meet the minimum parking requirement on the side or rear of a building or, no more than two rows of parking are provided.

[Vancouver, Washington]



Pedestrian Friendly Parking

Parking Orientation

- A. Parking lots and structures shall be located as much as possible to the rear of buildings
- B. Locating parking lots between the front property line and the primary building storefront/entry is specifically prohibited.
- C. Vehicular entry points to parking lots shall receive special paving accents where the drive crosses the public sidewalk.
- D. Off-street parking facilities shall be designed so that a car within a facility will not have to enter a street to move from one location to any other location within the same parking facility.

[San Bernardino, California]

Requirements for Design of Parking Lots.

The provisions of this Section apply to all vehicle parking spaces and parking areas, whether the parking meets or exceeds the number of spaces established in this Article to serve a particular use or the parking lot is operated as a principal use on a property and not dedicated to serving a particular use.

A. Orientation to street.

Except for parcels of land devoted to single-family, two-family or town house residential uses, all areas devoted to vehicle parking shall be so designed and be of such size that no vehicle is required to back into a public street to obtain access.

B. Vehicle parking spaces.

1. No parking spaces shall be accessible from an access driveway within the first twenty (20) feet of the driveway back from the street right-of-way line.
2. Every parking space shall provide a useable rectangular area at least nine (9) feet wide by nineteen (19) feet long. Access aisles shall not encroach into this minimum rectangular area. Every parking space shall be clearly demarcated by lines painted on or otherwise applied to the parking lot surface.

C. Lighting of parking areas.

Any lights used to illuminate the parking area shall be arranged, located or screened so that light is directed away from and no light source is visible from a public street, a residentially-zoned area, or a residential use.

[Proposed Lee's Summit, Missouri]



**Pedestrian
Friendly
Parking**

Maximum parking allowed: Retail Sales and Service Uses. The maximum parking for retail sales and services uses shall not exceed four (4) parking stalls for each 1,000 square feet of gross floor area.

Maximum Parking Allowed: Residential Uses. The maximum parking for residential uses shall not exceed two (2) parking stalls for each residential unit.

[Salt Lake City, Utah]

(At)-grade, open parking facilities, which contain five or more parking spaces, shall be landscaped in accordance with the following requirements.

- a) At least 5 percent of the interior area of the parking facility shall be landscaped. This does not include the perimeter planting provided for beautification or to satisfy screening requirements.
- b) Each planting area shall be at least 25 square feet in area and have no dimension less than five feet.
- c) Each planting area shall contain at least one tree and the facilities as a whole shall contain at least one tree for every 10 parking spaces.
- d) Trees used to satisfy parking lot landscaping requirements shall be a minimum of three-inch caliper at planting and shall be suitable for location in parking lots...
- e) Existing trees shall be preserved wherever possible.

- f) Existing and new trees shall be protected by bollards, high curbs, or other barriers sufficient to minimize damage.
- g) Extensive unbroken pavement areas in large, at-grade, open parking facilities shall not be permitted. In parking lots containing 25 or more spaces, a row shall contain no more than 15 contiguous parking spaces without a densely planted landscaped buffer of at least the dimensions of one space.

[Cambridge, Massachusetts]

- 1) Parking areas abutting a public right-of-way, except alleys and accessways, shall provide a planting strip between the right-of-way and the parking areas as follows:
 - a) Within a Transit-Oriented Development district a strip not less than five feet in width shall be provided.
 - b) In all other areas, a strip not less than seven feet in width shall be provided. The planting strip may be pierced by pedestrian and vehicular access ways. Planting strips along a public right-of-way shall be planted with large-scale, high canopy, horizontally branching tree species, and a sight-obscuring evergreen hedge.
- 2) Visual breaks, no more than five feet in length, shall be provided every 20 feet within landscape planting strips abutting public rights-of-way. (Note: The breaks allow visual access for security of parking lot users.) Shrubs, when used as parking perimeter screens, shall be planted in minimum three-gallon container sizes, or larger, as necessary, to achieve the desired screening height of 30 inches within two years after planting.
- 3) Parking area screening requirements may be achieved through a combination of change of grade and use of plant materials. Use of berms... (is) acceptable... Slopes of landscaped berms shall not exceed 1:4 for lawn areas, or 1:2 for berms planted with ground covers and shrubs.

[Eugene, Oregon]

A reduced parking permit is intended to permit the reduction of required automobile parking spaces for senior housing, or when shared parking, tandem parking, or in-lieu parking fees are proposed as part of any development, and under certain circumstances for landmarks and historic districts.

The Zoning Administrator may grant a reduced parking permit for the following:

- A. *Shared Parking*. Facilities may be shared if multiple uses cooperatively establish and operate parking facilities and if these uses generate parking demands primarily during hours when the remaining uses are not in operation. (For example, if one use operates during evenings or weekdays only.) Shared parking shall be approved only if:
 - 1. A sufficient number of spaces are provided to meet the greater parking demand of the participating uses.
 - 2. Satisfactory evidence has been submitted by the parties operating the shared parking facility, describing the nature of the uses and times when the uses operate so as to demonstrate the lack of conflict between them.



**Pedestrian
Friendly
Parking**

3. Additional documents, covenants, deed restrictions, or other agreements as may be deemed necessary by the Zoning Administrator are executed to assure that the required parking spaces provided are maintained and uses with similar hours and parking requirements as those uses sharing the parking remain for the life of the building.

- B. *Senior Housing*. The Zoning Administrator may approve a reduced parking permit for the reduction in the number of parking spaces required for senior citizens and senior group housing based upon findings that the proposed development is located in direct proximity to commercial activities and services, and is adequately served by public transportation systems.
- C. *Tandem parking*. The Zoning Administrator may approve a reduced parking permit for tandem parking for commercial and industrial uses provided the development requires 250 or more parking spaces, no more than a maximum of 20 percent of the total number of spaces are in tandem and an attendant is on duty during the hours the building is open for business.
- D. *Low-income housing*. The Zoning Administrator may approve a reduced parking permit for the reduction in the number of parking spaces required for low-to-moderate-income housing developments provided additional documents, covenants, deed restrictions, or other agreements as may be deemed necessary by the Zoning Administrator are executed.

[Santa Monica, California]



Structured & Shared Parking

Parking and Loading Regulations

Loading regulations for all uses and parking for buildings erected exclusively for dwelling purposes shall be as provided in section 80-444 and 80-445. There are no minimum non-residential parking requirements in this district and there are no minimum residential parking requirements for residential units in mixed-use structures in this district. An individual non-residential use may not provide more than one and one-half times the minimum parking requirements of Section 80-444 on the same lot or on a combination of the same and contiguous lots in any zoning district, provided however, any individual use that would require four or fewer spaces under Section 80-444 may provide up to six parking spaces. Multiple tenants in a common structure or structures sharing a common wall shall be considered an individual use for purposes of this calculation. Mixed-use structures may provide a maximum of one parking space per dwelling unit for purposes of this calculation.

[Kansas City, Missouri]



Structured & Shared Parking

Off-street parking required by this Code for any use shall not be considered as providing parking spaces for any other use except where the provisions of subsection _____ (e); Collective Provision of Parking apply or a joint facility exists. Such a facility shall contain not less than the total number of spaces as determined individually, except that fewer spaces may be permitted where adjoining uses on the same site have different hours of operation and the same parking spaces or loading berths can serve both without conflict. A determination of the extent, if any, to which joint use will achieve the purposes of this chapter shall be made by the Planning Director, who may require submission of a site development plan and a survey or other data necessary to reach a decision.

[Tri-Met: Portland, Oregon]



Structured & Shared Parking

Guidelines; Shared Parking.

The parking spaces provided for separate uses may be combined in one lot but the required spaces assigned to each use may not be assigned to another use, except as follows:

- A. One-half of the parking spaces assigned to a church, theater or assembly hall whose peak attendance will be at night or on Sundays may be assigned to a use that will be closed at night or on Sundays.
- B. Parking spaces may be shared by more than one use if the Director finds that the total number of spaces will be adequate at the peak hours of the uses they serve. The following ratios may be utilized in determining the time of day and the day of the week at which the maximum number of spaces will be needed by the uses served by the shared parking facility.

Percentage of Required Parking Spaces by Time Period

	Weekdays		Weekends		Nighttime
	6 am to 5 pm	5pm to 1am	6am to 5pm	5pm to 1am	1am to 6am
Office	100%	10%	10%	5%	5%
Retail	100%	90%	100%	70%	5%
Hotel	75%	100%	75%	100%	75%
Restaurant	50%	100%	100%	100%	10%
Entertainment & Recreational	40%	100%	80%	100%	10%
Church	10%	25%	100%	100%	10%

- C. Parking spaces that are proposed to be shared among two or more uses must be clearly available to each use and not appear in any way to be serving a particular use, either through signage dedicating the spaces or through design techniques that would tend to orient use of the spaces to a particular business or building.
- D. Shared parking arrangements must be evidenced by a written agreement acceptable to the Director, and approved by the owners of each of the affected properties or uses. The approved agreement shall be recorded and a copy supplied to the Director.

Guidelines: Downtown Area Parking.

A. Downtown area defined.

For purposes of this Section, “downtown area” means the area bounded on the north by 2nd Street, on the east by Green Street, on the south by 4th Street, and on the west by Market Street.

B. Residential uses.

No vehicle parking shall be required for three (3) or fewer dwelling units on a property in the downtown area. For more than three (3) dwelling units, vehicle parking shall be provided for the property at the rate of one and one-quarter 1.25 spaces per dwelling unit (rounded up to the nearest whole number of spaces).

C. Nonresidential uses.

1. Vehicle parking.

- a. In the downtown area, the vehicle parking requirements of this Article for nonresidential uses shall apply only to the net increase in floor area or use intensity created by new construction or building expansion.
- b. The parking requirement calculation for each nonresidential use in the downtown area shall be based on the requirements of this Article, or 5 spaces per 1,000 square feet of gross floor area, whichever requires the fewer number of spaces.
- c. Any existing vehicle parking spaces that are eliminated by new construction or expansion must be replaced by that business or use, unless such spaces are in excess of the requirements for that business or use being served, and are in the same ownership.

2. Loading.

In the downtown area, uses that prefer to provide loading from the street may have the option of applying for a permit for a curb loading zone as provided in Section ____ of the code.

[Proposed Lee’s Summit, Missouri]

Land Use



Mixed-Use Buildings and Neighborhood

District Brookside Business District (BBD)

Purpose. District BBD is intended to permit development and continuance of small-scale retail, service and office uses, designed to serve adjacent residential neighborhoods; or larger trade areas with small-size specialty shops and services such as antique shops, travel agencies and other related activities. Combined commercial-residential (mixed-use) structures are appropriate in this district. General retail uses intended to draw from a larger area, and having a substantial reliance on automobile-based customer trips, are better located in more intensive commercial districts. Parking requirements in this district recognize the pedestrian and transit orientation of customer trips, and the shared use of both on-street and off-street parking.

[Kansas City, Missouri]



Mixed-Use Buildings and Neighborhood

Within 150 feet of transit station platforms, buildings shall be designed to accommodate ground-floor retail and service uses; business and professional offices shall be secondary uses on the ground-floor, occupying no more than 50 percent of the floor area.

[Tri-Met: Portland, Oregon]



Mixed-Use Buildings and Neighborhood

Different uses, either within a single building or on a development site, must be provided. Residential uses must be provided, but are not permitted on the ground floor of mixed-use structures. In the Downtown activity center, commercial uses must be provided on the ground floor.

[Vancouver, Washington (applied in a mixed-use zone)]



Mixed-Use Buildings and Neighborhood

The MU (mixed-use) district is established to achieve the following purposes:

- 1) To enable development within the city with imaginative site and building design in a compatible mixture of land uses that will encourage pedestrian rather than automotive access to employment opportunities and goods and services.
- 2) To ensure sensitivity in land use and design to adjacent land uses in the MU district, and avoid the creation of incompatible land uses.
- 3) To ensure that all development gives adequate consideration to and provides mitigation for the impacts it creates with respect to transportation, public utilities, open space, recreation, and public facilities, and that circulation, solid waste disposal and recycling, water, sewer and stormwater systems are designed to the extent feasible to be adequate to serve future adjacent development that can reasonably be expected.
- 4) To ensure that development protects and preserves the natural environment to the maximum extent possible, including, but not limited to, protection of the water quality of the Snoqualmie River, contribution to the long-term solution of flooding problems, protection of wetlands and sensitive areas, and protection of view sheds.

[Snoqualmie, Washington]



Mixed-Use Buildings and Neighborhood

The purpose and intent of the mixed-use district is:

- a) To preserve existing downtown housing and to ensure that high-density housing and mixed-use development are included in appropriate areas; the permitted commercial uses are intended to help preserve the residential use of the area through provision of personal services within walking distance of the residences;
- b) To increase development intensity in this zone while providing an alternative to the creation of an exclusive residential zone; commercial development flexibility would be increased while meeting the housing objectives of the comprehensive plan;
- c) To encourage the development of downtown housing in a wide range of types and prices and rent levels;
- d) To integrate the RMU (residential mixed-use) zone with surrounding business and commercial zones by allowing small-scale commercial establishments that would serve both residents and walk-in trade from nearby offices;
- e) To create a continuity of pedestrian-oriented streetscapes and activities throughout the zone; and
- f) To permit development of a scale, height, and bulk that reinforces downtown's historic character, buildings, places, and street layout.

[Olympia, Washington]

