4

TOD TOOLBOX

This section outlines a variety of regulatory tools, incentives, and strategies that the various communities along the MetroLink system can use, on a case by case basis, to promote and sustain transit oriented development. Some of the tools and programs outlined below pertain to only Missouri or Illinois and are noted accordingly. The communities along the MetroLink system may use these tools as appropriate, based upon the financial and regulatory framework concerning potential development scenarios. The tools outlined below cannot be applied in a "one size fits all" nature, and the communities would of course need to proceed with further study and analysis in order to determine the precise mix of regulatory and financial tools necessary to make TOD a reality at a particular MetroLink station area. The TOD Action Plans for each of the existing station areas discuss how the general mix of tools may apply in particular to stations along the system.

Providing Appropriate Land Use Approvals

The first step in setting the stage for transit-oriented development is to provide the appropriate land use approval environment.

Creation of TOD Specific Zoning – Many of the existing station areas include traditional Euclidean zoning that does not allow for a mixing of land uses and includes additional regulations, in terms of building setbacks, density, and parking, that reinforce conventional suburban zoning patterns and do not encourage well-planned TOD. For example, several of the stations contain commercial zoning that does not allow for residential uses, or residential zoning classifications that do not allow for retail or office land uses. TOD zoning for particular stations should encourage a greater diversity and mixing of land uses, the use of setbacks, density requirements, and similar regulations that would encourage the development of more compact and better connected station areas, and density and parking requirements that would further support the creation of higher density and integrated TOD.

Form Based Codes – Whereas zoning regulations and design guidelines regulate the construction of particular buildings, but organize this guidance around particular land uses, Form Based Codes do not regulate land uses but instead provide specific guidance concerning the look, feel, and design of streets and associated buildings. FBC provides guidance regarding building setbacks, sidewalk and street sections, building mass, and related urban design factors, but allow for virtually any land use or tenant within a particular district. FBC helps to ensure the creation of districts and places that retain their sense of identity over many decades, even after particular land uses or tenants change over time. St Louis County has recently completed work to assemble FBC for various MetroLink station areas and local jurisdictions in other parts of the metro area should follow the county's example in order to complete FBC for additional segments of the MetroLink system.

Expedited Land Use Approvals – Developers of various projects, whether conventional or transit-oriented, often complain that the process of obtaining land use approvals consumes a good deal of time and harms the viability of potential projects. Cities can help encourage TOD in part by creating expedited or streamlined land use approval processes for TODs that follow the guidelines, zoning, or related regulatory tools pertaining to TOD in their particular communities. Removing steps in the process can help to speed approvals for TOD and therefore provide these projects with an advantage in the marketplace compared to standard development submittals with public entities.

Model TOD Zoning Strategies

Introduction to TOD

Transit-oriented development (TOD) is a mixed-use residential, business, or commercial area intended to maximize access to public transportation. TOD neighborhoods often consist of a center with a public transit station, surrounded by high-density employment-oriented businesses, higher-density residential uses, and mixed-use development with gradually lower-density development spreading outward from the center. TODs or transit zones are typically located within a radius of one-quarter to one-half mile from a transit station, as this is generally considered to be a reasonable walking distance for pedestrians.[1] TOD seeks to encourage compact urban growth, opportunities for increased choice of transportation modes, reduced reliance on the automobile, and a safe and pleasant pedestrian environment by ensuring an attractive streetscape, a functional mix of complementary uses, and provision of amenities that support the use of transit, bicycles, and pedestrian facilities.

Transit-oriented development has five major characteristics. First, a TOD has sufficient density to encourage the use of public transit. Second, residences, jobs, and retail destinations are located close to public transit facilities. Third, a TOD consists of mixed uses, with retail and employment sites located within walking distance of residential areas. Fourth, the TOD is built on a grid transportation network, which is not divided into the arterial-collector-local road classification system found in most suburban areas. Finally, most TODs contain urban design guidelines and design features that encourage a greater pedestrian orientation, which theoretically encourages its residents to use the automobile less in favor of more communal forms of transportation.[2] The implementation of transit-oriented development in the St. Louis region at this time is largely hampered by the fact that zoning for the lands surrounding most light rail stations does not provide for a mix of uses, a gridded transportation network or sufficient density to encourage the use of public transit. Finally, few existing zoning codes in the St. Louis region give emphasis to the concept of “complete streets” or encourage the creation of pedestrian oriented environments.

TOD connected to high frequency transit such as light rail generally requires minimum densities of 20-30 residential units per acre and 30 to 50 employees per acres in commercial and business centers. These densities both create adequate transit ridership to justify frequent service and help create active street life and commercial activities. Many of the existing Metro transit centers serving St. Louis provide service to both MetroLink light rail as well as MetroBus routes, increasing the ridership opportunities for nearby residents. Traditional land use controls have proven inadequate to relieve the long-term and regional congestion of automobile traffic. Although large-lot zoning reduces traffic on local streets, it produces a land use pattern that is difficult to serve with public transit. Free parking encourages automobile travel. Single-use zoning creates a spatial imbalance between jobs and housing that tends to discourage pedestrian activity.

Many planners have identified three essential zoning strategies for TOD, known as the ABC’s of TOD zoning: Active pedestrian friendly streets, Building intensity and scale, and Careful transit integration.[3] In order to promote a more pedestrian friendly environment, cit-

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1 Center for Transit Oriented Development

2 Transit Cooperative Research Program Legal Research Digest, January 1999 Number 12

3 Homes, Joe and James Van Hermert Transit Oriented Development Sustainable Community Development Code January 2008

ies should ensure adequate sidewalk space, strategically consider building placement and orientation, carefully decide the placement and supply of parking, and create shorter blocks (no more than 600 feet). Cities can control building intensities by specifying minimum or average densities and by setting minimum building height requirements in transit zones.

Uses

A key to creating transit-supportive land use regulations is designating uses that are supportive of public transit and are high pedestrian activity generators, while excluding those that may be detrimental to residential development or transit destinations. These include a high intensity mix of residential, office, retail, institutional, and civic uses.

It is suggested that a TOD project should include some mix of the following uses:

1. A wide variety of residential choices, ranging from apartments and studios to single-family homes, with both rentals and owner-occupied units. Residential density within a half-mile radius of the station should be high enough to support healthy ridership.
2. Small-scale commercial and office space throughout the neighborhood, with any large office buildings located as close to the station as possible.
3. Community services, including libraries, schools, childcare, and museums, especially with pedestrian connections to transit and other land uses.
4. Public gathering spaces, including parks, plazas, and courtyards, to attract people and change a street to an active place. Ideally, these spaces should be versatile to accommodate different activities and groups. These places must be maintained and safe.
5. Transit and parking facilities should accommodate retail or other active uses at the ground floor.
6. No matter what uses are included, architectural character and a consistent scale are needed for new development to harmonize with existing buildings.[4]

TOD should be served by land uses that encourage transit ridership. Therefore, surrounding land uses must be easily accessible to pedestrians, have high levels of visitor activity, and have high employment to floor area ratios.[5] For example, industrial and warehouse uses that exemplify the presence of fewer visitors and the presence of fewer than two employees per 1,000 square feet should be prohibited in a TOD.

Parking provisions should also be lower in areas located closer to the particular station.

Density

Most studies show that in order to effectively encourage transit use, a development must be located so that residents are not required to walk more than a half mile, or ten-minutes, to a transit station. Densities should be highest closest to the transit station and gradually step down further away. The quarter mile area is often referred to as a core subdistrict of the TOD district and contains jobs, commercial services, and housing that will generate high levels of pedestrian activity and transit use. Between the transit station and one quarter mile, it is appropriate to have mixed uses including retail, office, services and various types of housing. The TOD should then transition beyond the quarter mile to a half mile with medium density residential, retail and office uses, along with a pedestrian network.

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4 Cleveland TOD Guidelines

5 Smart Growth/Smart Energy Toolkit Bylaw, Transit-Oriented Development Overlay District

TOD ordinances often encourage or require more intensive development patterns by establishing minimum densities or by offering density bonuses in exchange for the provision of transit facilities or other urban design features. Regulatory planning tools for TOD include incentives to encourage TOD, master plans or district plans, re-zoning as TOD Districts, Form-Based Codes, and TOD Overlay Zones.

The following figure indicates the minimum residential densities needed to support alternative modes of transit:

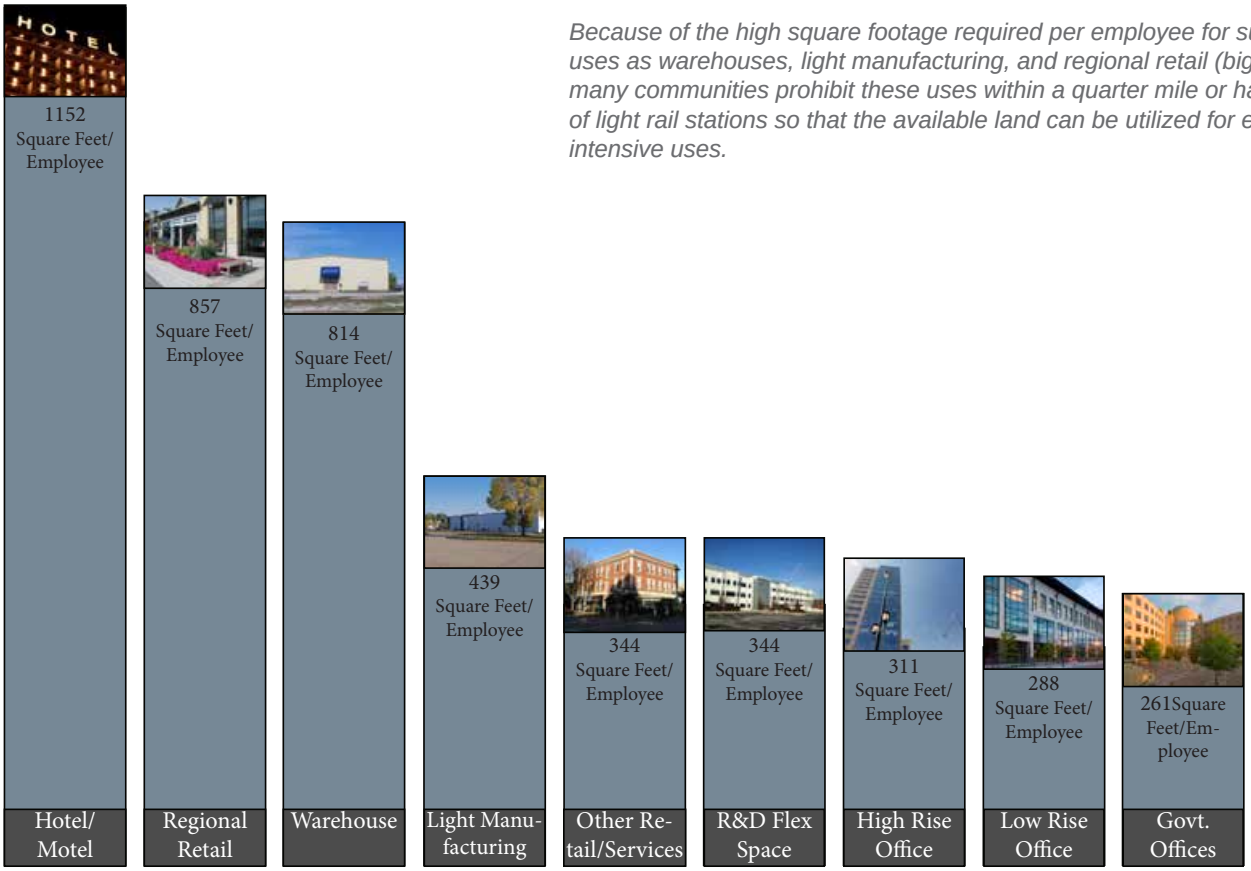
Nelson\Nygaard 2013

In addition to residential densities, employment density is a key factor in generating ridership. Generally, the higher the employment density, the higher the ridership of public transit. Research has shown that employment densities of 30-50 employees per acre are needed to drive the ideal level of ridership on light rail transit. An understanding of the employee density generated by different land uses provides a sense of the land use types desirable for a transit-oriented district.

Zoning

A review of various model transit oriented development codes and specific codes drafted for Seattle, Portland, San Francisco, Chicago, Dallas, Washington, D.C. and Charlotte reveals a rather wide range of approaches to zoning of TOD districts. Some cities utilize traditional or Euclidean zoning strategies. Traditional, or Euclidean, zoning separates land uses, sets density thresholds and minimum lot sizes, and usually contains explicit regulations such as bulk and height controls and establishment of minimum parking requirements. With TOD, however, traditional zoning is often turned on its head (i.e., uses are intermixed, not exclud-

Square Feet Per Employee Based on: Average Employees Per Acre and Average FAR



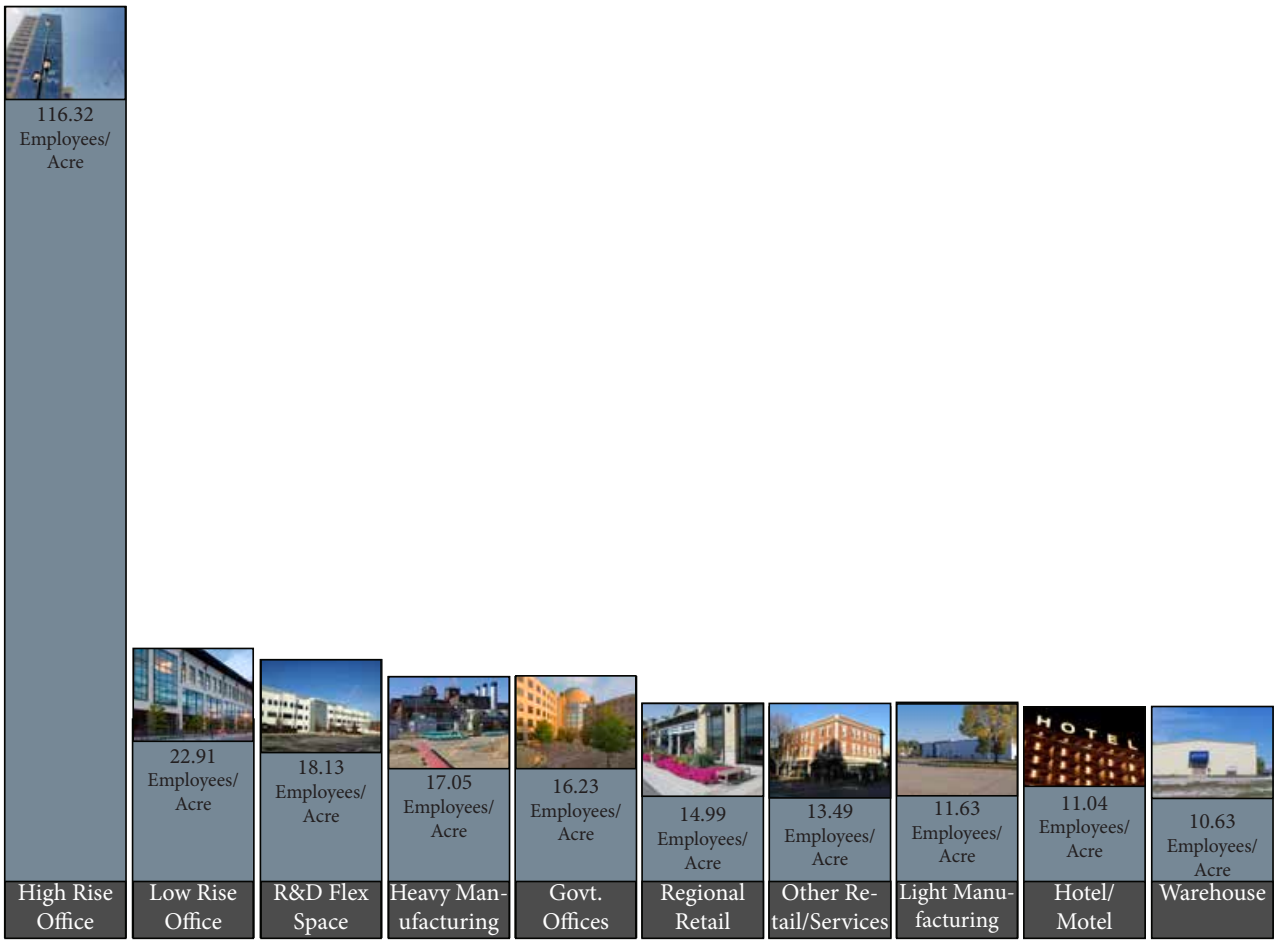
Because of the high square footage required per employee for such land uses as warehouses, light manufacturing, and regional retail (big box), many communities prohibit these uses within a quarter mile or half mile of light rail stations so that the available land can be utilized for employee intensive uses.

Square Feet Per Employee Based on: Floor Area Ratio

Some communities prefer to regulate land use by establishing floor area ratios. The floor area ratio is the relationship between the total building square footage of a site and the land area of a site in square feet. Some communities establish minimum floor area ratios for the areas within a quarter or a half mile of light rail stations in order to ensure that the available land is utilized for higher residential density and employee density uses.

Source: Employment Density Study, Southern California Council of Governments, October 31, 2001

Square Feet Per Employee Based on: Average Employees Per Acre



ed, and maximum parking allowances are often established, rather than requirements for a minimum number of parking spaces per square feet). Unlike simply introducing a mixed-use category, TOD specifies additional requirements that seek to encourage a travel mode shift.

There are five approaches that municipalities choose from to modify zoning in support of TOD:

1. Change existing zoning classification descriptions
2. Specify a type of high-density mixed-use zoning
3. Create an TOD overlay zone
4. Identify a special TOD zone and create a specific zoning category
5. Revise the municipal code to make it form-based and recognize TOD design criteria

Additionally, there are options for making TOD zoning voluntary, incentive based, transitional, or required.

The first option of changing the existing zoning classifications requires the initial zoning code to have existing mixed-use categories that are amendable to include requirements for TOD compatibility. For example, a municipality without a mixed-use category would need to be able to revise a commercial category to include all mixed-use specifications. One challenge to this approach in changing the zoning classifications is that zoning for adjacent

municipalities may have inconsistencies with the proposed mixed-use zoning. While zoning codes should address the uniqueness of each community, TOD functions best as a network along a transit route. Therefore, maintaining consistency in general development requirements is ideal.

The second option, creating a specific mixed-use zoning code to support transit, is often the approach when a municipality wants to add zoning categories for mixed-use or only desires to add a transit specific zoning category. Each zoning classification has a list of permitted uses, height limits, sidewalks and setbacks requirements for the front yard, side yard, and rear yard.

More common than either rezoning or the creation of new designations, however, is the creation of an overlay zone. As its name implies, an overlay zone is placed on the zoning map over a base zone. The TOD Overlay is sometimes referred to as a Transit Supportive Overlay District. The overlay modifies, eliminates, or adds regulations to the base zone. It is typically coordinated on a regional basis for a specific key transit route and implements an array of development regulations that support transit usage and create a vibrant neighborhood around a transit station. Usually, the overlay zone extends a "walkable" distance around the station, depending on the type of transit amenity and size of the center. Usually the overlays are put in place to make transit-friendly development a matter-of-right activity as opposed to one requiring a Planned Urban Development (PUD) application or other zoning application or adjustment, and therefore overlays make it easier to execute the "right kind" of development. A common challenge is that if the zone is too tightly worded to define what the "right" kind of development is – it may preclude development in general. If the zone is too loosely worded it may allow the "wrong kind" of development to occur. Another common challenge with overlays is that they can become confusing to developers and the public concerning how to reconcile the underlying zoning with the overlay zoning and what is required or allowed in the overlay zone.

While TOD overlay zoning can be an efficient means of consistently rezoning all TOD locations within a transit network, it is often confusing in the development application process for both the applicant and the approval body. Usually, there is a phrase in the overlay code that says that in the case of a conflict between the overlay and the existing zoning, the more restrictive requirement will apply. Municipalities must provide documentation that informs land owners and potential developers of the TOD overlay and resulting implications. The overlay zoning approach often requires some design review, but the development requirements and allowances are already addressed so municipalities have limited leverage once the overlay is adopted. Municipalities may struggle to understand and interpret the differences between the base zone and the overlay. The Overlay approach is often used when a slow transition of transit services is anticipated and new transit stations may be identified in the future and added to the overlay areas.

Existing zoning codes in conflict with TOD goals

Many existing zoning codes amongst the counties and municipalities containing MetroLink stations generally do not promote TOD or mixed use development. Some, however, like St. Louis County, Missouri, St. Louis City, and the cities of Clayton and Shiloh, do have provisions for TOD. For example, St. Louis County allows for Planned Commercial Districts (C8), Mixed Use Development Districts (MXD), and Neighborhood Business Districts (CI) that can begin to facilitate TOD. St. Louis City has a variety of zoning districts that support mixed uses. Other areas permit limited industrial or business-focused TOD, but not residential mixes. The Village of Shiloh has implemented a TOD Overlay Zone, or the MetroLink Cor-

ridor and Station Overlay Zone, while the City of Clayton also has a TOD Overlay Zone for both the Downtown Clayton and the Forsyth MetroLink Station areas. Clayton's TOD overlay code incentivizes developments that reduce on-site parking in favor of stronger linkages between the station and surrounding development; LEED certified building; streetscapes consistent with the city's standards; and adequate green space/public open space proportionate to the development size and scope.[6]

Transit Oriented Development and the Urban Transect

Some communities in the St. Louis region, such as Wildwood, choose to base their land use planning on the concept of an urban transect. The transect defines various districts T1 through T6 based upon the intensity of land use. For those communities that prefer this approach to planning, the table that follows explains the relationship between the urban transect and the station typologies suggested in this plan.

Heights and Setbacks

Limiting building setbacks helps to establish a pedestrian-friendly street environment. Different station typologies require varying setbacks appropriate to each station context. For example, in Downtown stations, a zero feet setback is appropriate to continue the existing building fabric, maximize the efficient use of real estate, and provide an aesthetically pleasing and interesting pedestrian street environment. Stations in smaller Neighborhood and Suburban Town Center typologies may require larger setbacks to better align with the character of the area in which the TOD is located. Similarly, maximum building heights should vary by station typology and local context, with Neighborhood and Suburban Town Center typologies likely allowing lower building heights and Downtown stations, logically, allowing the tallest buildings in the metropolitan area.

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6 Clayton TOD Overlay Code, 2009

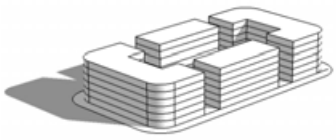
DESIGN GUIDELINES MATRIX

	1	2	3	4	5
	Downtown	**Major Urban Center**	**Suburban Town Center**	**Neighborhood**	**Campus/ Special Event**
	Commuter Rail/LRT/BRT	**Local Bus Hub**	**Commuter Rail/LRT/BRT**	**Local Bus Hub**	**LRT/BRT**
DENSITY					
Residential Density Dwelling Units per Acre	25-45 Dwelling Units/Acre	30-60 Dwelling Units/Acre	30-40 Dwelling Units/Acre	20-30 Dwelling Units/Acre	30-40 Dwelling Units/Acre
Employment Density- Employees per Acre	260-435 Jobs/Acre	125-250 Jobs/Acre	40-80 Jobs/Acre	20-30 Jobs/Acre	40-60 Jobs/Acre
Gross Population Density	325-545 Persons/Acre	200-395 Persons/Acre	100-200 Persons/Acre	50-90 Persons/Acre	100-200 Persons/Acre
INTENSITY OF USE					
Average Floor Area Ratio (FAR)	3.0-5.0	2.0-4.0	2.0-3.0	1.0	1.0
Average Building Height	4 or more stories	3 or more stories	2.5 or more stories	2 stories	3 stories
Minimum Lot Coverage	70%-80%	70%	60%	50%	70%
Minimum Street Coverage	100% primary, 80% secondary	80%	70%	60%	60%
PARKING					
Maximum Residential Parking (Spaces per Unit)	1 Space/Unit	1.5 Spaces/Unit	2 Spaces/Unit	2 Spaces/Unit	1.5 Spaces/Unit
Maximum Office/ Retail/ (Spaces per 1,000 Sq. ft.)	2 Spaces/1000 SF	3 Spaces/1000 SF	3 Spaces/1000 SF	3 Spaces/1000 SF	3 Spaces/1000 SF
Maximum Surface Parking (% of Total Spaces)	10%	15%	25%	50%	20%
Shared vs. Single-Use Parking Facility	Shared	Shared	Shared	Mix of Shared/Single	Shared
Park & Ride and Other Considerations	No	No	Yes	Yes	No
MIXED USE & DIVERSITY					
Minimum Hours of 'Significant' Activity	18 Hours	16 Hours	14 Hours	12 Hours	14 Hours
Average Jobs/ Housing ratio	10 jobs/1 Dwelling Unit	5 jobs/1 Dwelling Unit	1 job/1 Dwelling Unit	1 job/1 Dwelling Unit	1 job/1 Dwelling Unit
Mix of Uses (% Residential, % Non-Residential)	30% Residential/ 70% Non-Residential	50% Residential/ 50% Non-Residential	70% Residential/ 30% Non-Residential	80% Residential/ 20% Non-Residential	50% Residential/ 50% Non-Residential
STREET NETWORK					
Grid Density (Polygons per sq. mile) Bicycle, Pedestrian & Street Network	Minimum of 150	Minimum of 75	Minimum of 50	Minimum of 40	Minimum of 75
Average Block Size (in Feet)	200' x 400'	200' x 600'	200' x 800'	200' x 600'	200' x 600'

DOWNTOWN

Special, Light Rail, Bus Rapid, Commuter Rail, Express & Local Bus Hub

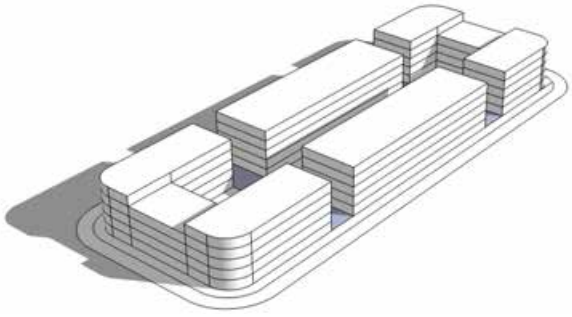
DENSITY	
Residential Density Dwelling Units per Acre	25-45 Dwelling Units/Acre
Employment Density- Employees per Acre	260-435 Jobs/Acre
Gross Population Density- Persons per Acre	325-545 Persons/Acre
INTENSITY OF USE	
Average Floor Area Ratio (FAR)	3.0-5.0
Average Building Height	4 or more stories
Minimum Lot Coverage	70%-80%
Minimum Street Frontage	100% primary, 80% secondary
PARKING	
Maximum Residential Parking (Spaces Per Unit)	1 Space/Unit
Maximum Office/ Retail Parking (Spaces per 1,000 square feet)	2 Spaces/1000 SF
Maximum Surface Parking (% of Total Spaces)	10%
Shared vs. Single Use Parking Facility	Shared
Park and Ride and Other Situations	No
MIXED USE AND DIVERSITY	
Minimum Hours of 'Significant' Activity	18 Hours
Average Jobs/ Housing Ratio	10 jobs/1 Dwelling Unit
Mix of Uses (% Residential, % Non- Residential)	30% Residential/ 70% Non-Residential
STREET NETWORK	
Grid Density (Polygons per Square Mile) - Bicycle, Pedestrian, and Street Network	Minimum of 150
Average Block Size (in Feet)	200' x 400'



MAJOR URBAN CENTER

Special, Light Rail, Bus Rapid, Commuter Rail, Express & Local Bus Hub

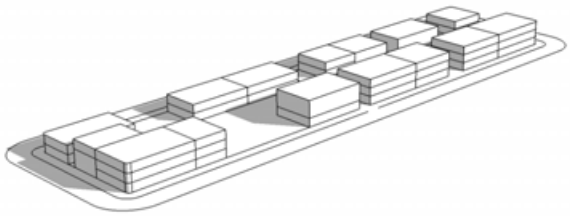
DENSITY	
Residential Density -Dwelling Units per Acre	30-60 Dwelling Units/Acre
Employment Density- Employees per Acre	125-250 Jobs/Acre
Gross Population Density- Persons per Acre	200-395 Persons/Acre
INTENSITY OF USE	
Average Floor Area Ratio (FAR)	2.0-4.0
Average Building Height	3 or more stories
Minimum Lot Coverage	70%
Minimum Street Frontage	80%
PARKING	
Maximum Residential Parking (Spaces Per Unit)	1.5 Spaces/Unit
Maximum Office/ Retail Parking (Spaces per 1,000 square feet)	3 Spaces/1000 SF
Maximum Surface Parking (% of Total Spaces)	15%
Shared vs. Single Use Parking Facility	Shared
Park and Ride and Other Situations	No
MIXED USE AND DIVERSITY	
Minimum Hours of 'Significant' Activity	16 Hours
Average Jobs/ Housing Ratio	5 jobs/1 Dwelling Unit
Mix of Uses (% Residential, % Non- Residential)	50% Residential/ 50% Non-Residential
STREET NETWORK	
Grid Density (Polygons per Square Mile) - Bicycle, Pedestrian, and Street Network	Minimum of 75
Average Block Size (in Feet)	200' x 600'



SUBURBAN TOWN CENTER

Special, Light Rail, Bus Rapid, Commuter Rail, Express & Local Bus Hub

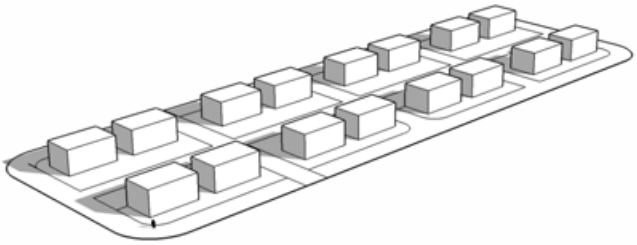
DENSITY	
Residential Density- Dwelling Units per Acre	30-40 Dwelling Units/Acre
Employment Density- Employees per Acre	40-80 Jobs/Acre
Gross Population Density- Persons per Acre	100-200 Persons/Acre
INTENSITY OF USE	
Average Floor Area Ratio (FAR)	2.0-3.0
Average Building Height	2.5 or more stories
Minimum Lot Coverage	60%
Minimum Street Frontage	70%
PARKING	
Maximum Residential Parking (Spaces Per Unit)	2 Spaces/Unit
Maximum Office/ Retail Parking (Spaces per 1,000 square feet)	3 Spaces/1000 SF
Maximum Surface Parking (% of Total Spaces)	25%
Shared vs. Single Use Parking Facility	Shared
Park and Ride and Other Situations	Yes
MIXED USE AND DIVERSITY	
Minimum Hours of 'Significant' Activity	14 Hours
Average Jobs/ Housing Ratio	1 jobs/1 Dwelling Unit
Mix of Uses (% Residential, % Non- Residential)	70% Residential/ 30% Non-Residential
STREET NETWORK	
Grid Density (Polygons per Square Mile) - Bicycle, Pedestrian, and Street Network	Minimum of 50
Average Block Size (in Feet)	200' x 800'



NEIGHBORHOOD

Special, Light Rail, Bus Rapid, Commuter Rail, Express & Local Bus Hub

DENSITY	
Residential Density- Dwelling Units per Acre	20-30 Dwelling Units/Acre
Employment Density- Employees per Acre	20-30 Jobs/Acre
Gross Population Density- Persons per Acre	50-90 Persons/Acre
INTENSITY OF USE	
Average Floor Area Ratio (FAR)	1.0
Average Building Height	2 stories
Minimum Lot Coverage	50%
Minimum Street Frontage	60%
PARKING	
Maximum Residential Parking (Spaces Per Unit)	2 Spaces/Unit
Maximum Office/ Retail Parking (Spaces per 1,000 square feet)	3 Spaces/1000 SF
Maximum Surface Parking (% of Total Spaces)	50%
Shared vs. Single Use Parking Facility	Mix of Shared/Single
Park and Ride and Other Situations	Yes
MIXED USE AND DIVERSITY	
Minimum Hours of 'Significant' Activity	12 Hours
Average Jobs/ Housing Ratio	1 job/1 Dwelling Unit
Mix of Uses (% Residential, % Non- Residential)	80% Residential/ 20% Non-Residential
STREET NETWORK	
Grid Density (Polygons per Square Mile) - Bicycle, Pedestrian, and Street Network	Minimum of 40
Average Block Size (in Feet)	200' x 600'



CAMPUS/SPECIAL EVENT/SPECIAL PURPOSE

Special, Light Rail, Bus Rapid, Commuter Rail, Express & Local Bus Hub

DENSITY	
Residential Density- Dwelling Units per Acre	30-40 Dwelling Units/Acre
Employment Density- Employees per Acre	40-60 Jobs/Acre
Gross Population Density- Persons per Acre	100-200 Persons/Acre
INTENSITY OF USE	
Average Floor Area Ratio (FAR)	1.0
Average Building Height	3 stories
Minimum Lot Coverage	70%
Minimum Street Frontage	60%
PARKING	
Maximum Residential Parking (Spaces Per Unit)	1.5 Spaces/Unit
Maximum Office/ Retail Parking (Spaces per 1,000 square feet)	3 Spaces/1000 SF
Maximum Surface Parking (% of Total Spaces)	20%
Shared vs. Single Use Parking Facility	Shared
Park and Ride and Other Situations	No
MIXED USE AND DIVERSITY	
Minimum Hours of 'Significant' Activity	14 Hours
Average Jobs/ Housing Ratio	1 job/1 Dwelling Unit
Mix of Uses (% Residential, % Non- Residential)	50% Residential/ 50% Non-Residential
STREET NETWORK	
Grid Density (Polygons per Square Mile) - Bicycle, Pedestrian, and Street Network	Minimum of 75
Average Block Size (in Feet)	200' x 600'

Form Based Codes

Communities around the country are moving to form based codes in defining standards for transit oriented development. Form-based codes foster predictable built results and a high-quality public realm by using physical form (rather than separation of uses) as the organizing principle for the code. They are regulations, not mere guidelines, adopted into city or county law. Form-based codes offer a powerful alternative to conventional zoning.

Form-based codes address the relationship between building facades and the public realm, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks. The regulations and standards in form-based codes are presented in both words and clearly drawn diagrams and other visuals. They are keyed to a regulating plan that designates the appropriate form and scale (and therefore, character) of development, rather than only in terms of distinctions in land-use types.

This approach contrasts with conventional zoning's focus on the micromanagement and segregation of land uses, and the control of development intensity through abstract and uncoordinated parameters (e.g., FAR, dwellings per acre, setbacks, parking ratios, traffic Level of Service), to the neglect of an integrated built form. Not to be confused with design guidelines or general statements of policy, form-based codes are regulatory, not advisory. They are drafted to implement a community plan. They try to achieve a community vision based on time-tested forms of urbanism. Ultimately, a form-based code is a tool; the quality of development outcomes depends on the quality and objectives of the community plan that a code implements.

Form-based codes commonly include the following elements:

- Regulating Plan. A plan or map of the regulated area designating the locations where different building form standards apply, based on clear community intentions regarding the physical character of the area being coded.
- Public Space Standards. Specifications for the elements within the public realm (e.g., sidewalks, travel lanes, on-street parking, street trees, street furniture, etc.).
- Building Form Standards. Regulations controlling the configuration, features, and functions of buildings that define and shape the public realm.
- Administration. A clearly defined application and project review process.
- Definitions. A glossary to ensure the precise use of technical terms.

Form-based codes may also include:

- Architectural Standards. Regulations controlling external architectural materials and quality.
- Landscaping Standards. Regulations controlling landscape design and plant materials on private property as they impact public spaces (e.g. regulations about parking lot screening and shading, maintaining sight lines, ensuring unobstructed pedestrian movement, etc.).
- Signage Standards. Regulations controlling allowable signage sizes, materials, illumination, and placement.

- Environmental Resource Standards. Regulations controlling issues such as storm water drainage and infiltration, development on slopes, tree protection, solar access, etc.
- Annotation. Text and illustrations explaining the intentions of specific code provisions.

While form based codes hold great promise in improving the quality of the built environment, they may be beyond the understanding of some existing planning and zoning staff and appointed officials and thus to difficult to administer. Many planning and zoning officials have not had experience in writing and administering form based codes and are, therefore, more comfortable with more traditional Euclidian zoning. For some communities, however, form based codes may be precisely the kind of regulatory strategy that proves most effective in generating the desired results for the community.

Some communities choose to utilize a hybrid code which relies largely upon Euclidean zoning techniques but incorporate elements of form and design character commonly found within form based codes. Given the many municipalities and multiple counties with light rail stations within their jurisdiction, it is unlikely that a "one size fits all" approach will prove effective and each community will no doubt craft their own solution. As long as the fundamental principles of transit-oriented development are kept at the forefront, a wide variety of zoning approaches can prove effective.

Examples of TOD Zoning in the St. Louis Region:

Zoning to accommodate transit-oriented development is not without precedent in the St. Louis region. The Central Avenue Station and Forsyth Boulevard Transit Oriented Development Overlay Districts in Clayton are two examples. As an overlay district the terms of the Central Avenue Station overlay supercedes the base zoning wherever conflicts occur. The district provides a table of permitted uses and is consistent with a transit-first orientation. It prohibits or permits only by conditional use permit automobile-oriented uses such as service stations, car wash establishments, and automobile agencies.

The district sets no maximum building height or maximum floor area ratio requirements for this district, nor are there any minimum parking requirements. Parking requirements are set by the Plan Commission and Board of Alderman based upon a site specific parking study.

Applications must be made either as a Special Development District or as a Planned Unit Development, and are evaluated in terms of the linkage of the proposed development to the transit station, compliance with LEED certification from the U.S. Green Building Council, and the quality of streetscape or open space provided.

The new Sustainable Subdivision and Zoning Ordinance of St. Louis County, a form based code, contains two transit oriented development districts. Two subdistricts are anticipated. One is a Mixed Use TOD subdistrict which provides for somewhat more intense development than a traditional neighborhood district. The TOD Mixed Use Sub-District is a medium- to high-scale sub-district designed to serve adjacent neighborhoods as well as transit users visiting the associated station or stop(s). The form is a slightly more intensive version of a main street-style sub-district establishing a street wall of building facades along the sidewalk, and focusing pedestrian-friendly retail and service uses on the ground story with residential and/or office in upper stories. Buildings in this subdistrict shall have a minimum height of two stories and a maximum height of eight stories.

The other TOD district articulated by St Louis County is the General TOD subdistrict. The General TOD Sub-District is a medium- to high-scale sub-district that permits residential and office buildings, allowing residents to walk to a transit station or stop for a regular com-

mute. The form of the sub-district requires buildings to be oriented to the public space of the street, with courtyards and open space permitted. Buildings in this subdistrict shall have a minimum height of one story and a maximum of eight stories.

Subdistricts are required to be a minimum of five acres in size with block lengths not to exceed 600 feet and a preferred block length of 400 feet to promote walkability. At least one type of open space is required within 500 feet of the MetroLink station.

Other representative TOD zoning codes may be found in other communities such as Seattle, Portland, Chicago, Dallas, Denver, Washington, D.C., and Charlotte. The progress in articulating and gaining buy-in concerning TOD zoning and form based codes in the St Louis area over the last few years suggests that the various communities along the MetroLink system already have good local templates from which to draw in crafting their own ordinances going forward.

Parking Replacement Strategy

Parking requirements in TOD areas should allow for a maximum number of allowable parking spaces, rather than a minimum number of spaces. Since residents who live within walking distance of a transit station are more likely to utilize public transit than other residents, their per capita motor vehicle use is significantly reduced, and these residents also tend to own fewer cars. Excessive parking requirements not only create a less hospitable pedestrian environment, but they also add to the cost of housing and development by consuming land that could yield other high-value uses. In addition, excessive parking encourages auto-dependence, while requiring less parking promotes transit use and alternative travel, thereby supporting the transit infrastructure in place. Residential parking standards in TODs are able to be reduced by balancing parking needs with the locality's neighborhood and resident characteristics and the transit access and mobility offerings.[1] In addition to reducing the amount of required parking, shared parking strategies that allow for a given inventory of parking to serve different land uses that have varying patterns of demand (such as a restaurant that draws people at night, versus an office development that draws people from 8AM to 5PM), can also help cities reduce the amount of parking needed in and near TOD. Moreover, the size of parking lots can be limited (for example, by limiting a parking area to no more than one acre), cities may mandate that parking locate to the rear of buildings in order to avoid the creation of a "sea of parking" along main roads, and cities may provide or require additional on-street parking spaces.

Another feature of automobile-independent TOD areas is that car dominant uses are reduced or prohibited. The City of Clayton, for example, prohibits auto-related uses like service stations and car wash establishments near MetroLink and puts conditional requirements on automobile agencies, surface parking lots and parking garages that do not tie into ground floor retail uses.[2]

In addition to limiting automobile-centered infrastructure, the pedestrian environment and bicycle trails should be prioritized in an auto-reduced environment. The Smart Growth/Smart Energy Toolkit Model Bylaw recommends setting a ratio of bike racks provided to automobile spaces at 1:15.[3] As illustrated by the following exhibits, it is recommended that auto, transit, bike, and pedestrian systems all be designed to function at a high level of service.

Transit-oriented development requires parking replacement strategies inherent to promoting dense and walkable development centers while providing continued transit service to existing commuters. When net parking spaces are lost to development, the transit provider must ensure ridership counts do not drop or suffer from the reduction. In addition, reallocating parking uses to TOD uses, or instituting paid parking where free parking currently exists, may cause commuters to seek out nearby parking in surrounding neighborhoods. This burden of shifting parking and traffic patterns should be discouraged. Parking scenarios must therefore accommodate community, stakeholder, and station needs, while promoting the goals of TOD.

Richard Willson, Ph.D. AICP prepared a replacement parking strategy paper for BART in 2005. This document outlines a strategy for determining appropriate parking ratios for transit-oriented developments according to four steps applied to each station area. The

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1 *Puget Sound Regional Council, Parking Reductions Tool, 2012*

2 *Clayton TOD Overlay Code, 2009*

3 *Smart Growth/Smart Energy Toolkit Bylaw, Transit-Oriented Development Overlay District*

steps outlined in Willson's paper are applicable to the St. Louis MetroLink system as well. These steps include 1) Identifying policy and context issues that affect TOD scenarios; 2) Building scenarios of TOD, parking, and access strategies; 3) Evaluating those scenarios; and 4) Selecting preferred strategies and writing solicitation specifications for station area development.[4] Based on a thorough review of recent case studies, the BART method seems like the most viable parking replacement strategy applicable to the St. Louis station areas. Given the range of station typologies and current and projected user characteristics and trends, the BART method gives the greatest flexibility in customizing parking strategies that are specific to each station.

The first task in determining a parking replacement strategy includes inventorying and analyzing the existing station characteristics as outlined in Figure 1, below.[5]

Figure 1. Willson's Template for Station Information Profiling[6]

CATEGORY	CHARACTERISTIC	CONDITION
Station Characteristics	Station typology	
	Transportation function	
	Average station weekday ridership	
	Average weekday round trip fare paid from station	
	Weighted average service density	
	Station draw	
Station Area Characteristics	Population within ½ mile	
	Employment within ½ mile	
Parking	MetroLink parking presence and utilization	
	Parking utilization at peak hour (ex. 1 PM)	
	Reliance on parking number (# of spaces/weekday rider)	
	Other parking-related access issues, e.g., overflow parking	
Other Access Modes	Transit (including feeder transit)	
	Shuttles	
	Pedestrian	
	Carpooling	
	Bicycle	
Existing Planning Issues		
Existing Planning Documents		

One important element is evaluating the current utilization of station park-ride lots. Some stations, such as North Hanley, support a significant amount of commuter spaces. This is due to its location at the fringe of the city, making it an accessible commuter lot from outly-

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4 Willson, Richard and Val Menotti. "Commuter Parking Versus Transit-Oriented Development Evaluation Methodology," accessed 2012.

5 Willson, Richard. BART Departments of Planning and Real Estate. "Replacement Parking for Joint Development: An Access Policy Methodology." April 18, 2005.

6 Willson, Richard. BART Departments of Planning and Real Estate. "Replacement Parking for Joint Development: An Access Policy Methodology." April 18, 2005.

ing areas, as well as the station's proximity to the airport, supporting free short-term parking for the facility. Other station areas report relatively low utilization of the park-ride lots due to low transit ridership demand, and many of the stations within the MetroLink system do not include any park and ride lots. Stations that do not provide existing parking either lack available land for this use, or perhaps they have shared parking agreements with adjacent land uses and destinations. Therefore, each station area needs to be evaluated for its existing utilization of parking as well as proposed development density shifts. Willson's approach seeks to adapt ideas concerning parking replacement strategies to a wide variety of station area and typology situations.

As the chart that follows shows, MetroLink stations with existing park-ride facilities show a range of parking occupancy patterns. This study represents parking counts taken during a few days in the summer of 2011. In order to get an accurate reading of park-ride utilization, regular and frequent counts during peak hours need to be gathered at each station. In addition, utilization counts also need to be taken during special events, such as during Rams or Cardinals games. This data will provide a baseline for transit trends today, and help in measuring outcomes in the future with development. At a minimum, annual counts should be conducted at the station areas for which Metro and East West Gateway have completed station area plans (for the station areas that have park and ride lots), including Fairview Heights, Emerson Park, Rock Road, and North Hanley.

Based on the limited data included in Figure 2, the park-ride lots in Illinois are generally operating at less than half of capacity, while the Missouri stations show much higher park-ride usage. There are correlations, as seen in Figure 3, between overall ridership numbers at particular stations and the associated rates of parking space usage.

Figure 2. Park-Ride Utilization

ILLINOIS METROLINK PARK N' RIDE LOTS 2011							
Parking Lot Location	**# of parking spaces**	**24 hr**	**long term**	**Total Used**	**% Used**	**% Unused**	**Date**
East Riverfront	295	114	0	114	38.6%	61.4%	5/25/2011
5th & Missouri	328	159	0	159	48.5%	51.5%	5/25/2011
Emerson Park	816	201	0	201	24.6%	75.4%	5/25/2011
Washington Park	681	97	0	97	14.2%	85.8%	5/25/2011
Fairview Heights	853	545	7	552	64.7%	35.3%	5/25/2011
Memorial Hospital	431	122	7	129	29.9%	70.1%	5/25/2011
Swansea	716	239	5	244	34.1%	65.9%	5/25/2011
Belleville	287	189	6	195	67.9%	32.1%	5/25/2011
College	598	222	5	227	38.0%	62.0%	5/25/2011
Shiloh side*	645	152	23	175	27.1%	72.9%	5/25/2011
Scott side*	421	89	0	89	21.1%	78.9%	5/25/2011
Total Illinois Lots	*6071*	*2129*	*53*	*2182*	*35.9%*	*64.1%*	

MISSOURI METROLINK PARK N' RIDE LOTS 2011							
Parking Lot Location	**# of parking spaces**	**24 hr**	**long term**	**Total Used**	**% Used**	**% Unused**	**Date**
Forest Park/DeBaliviere	118	113	0	113	95.8%	4.2%	5/25/2011
Richmond Heights (10:30 am)	57	57	0	57	100.0%	0.0%	7/15/2011
Brentwood* (2-3pm)	914	170	8	178	19.5%	80.5%	6/2/2011
Shrewsbury	800	438	0	438	54.8%	45.2%	7/20/2011
Delmar Loop	362	187	0	187	51.7%	48.3%	5/25/2011
Wellston	242	43	0	43	17.8%	82.2%	5/25/2011
Rock Road (11:30 am)	191	75	0	75	39.3%	60.7%	7/8/2011
UMSL South (10:15 am)	130	97	0	97	74.6%	25.4%	7/15/2011
North Hanley (10-11am)	1705	884	0	884	51.8%	48.2%	6/2/2011
Total Missouri Lots	*4519*	*2064*	*8*	*2072*	*45.9%*	*54.1%*	

Comments:	* The Shiloh-Scott Station is split: one side is open to the general public and the other side to those who possess Scott Air Force Base security clearance. 645 available civilian Park & Ride spaces; 421 are military.
	*At Brentwood the spaces counted are from levels 5-10, not the entire garage, for the available & parked spaces. Total available in garage = 1,399. 485 spaces reserved for DCM.

Figure 3. Station Ridership

ILLINOIS METROLINK STATIONS

Station	Total Monthly Boardings	Average Daily Boardings	
		Weekday	Weekend
Illinois Station Average	**23,500**	**880**	**520**
East Riverfront	23,100	730	830
5th & Missouri	48,300	1,840	990
Emerson Park	22,500	880	410
Jackie Joyner-Kersee (JJK) Center	13,100	480	310
Washington Park	14,400	560	270
Fairview Heights	52,300	1,930	1,220
Memorial Hospital	10,800	410	220
Swansea	12,400	480	240
Belleville	17,400	680	310
College	21,300	860	330
Shiloh-Scott AFB	22,500	810	570

MISSOURI METROLINK STATIONS

Station	Total Monthly Boardings	Average Daily Boardings	
		Weekday	Weekend
Missouri Station Average	**42,000**	**1,560**	**960**
Lambert Terminal 1	42,800	1,490	1,200
Lambert Terminal 2	12,800	440	370
North Hanley	88,000	3,350	1,830
UMSL North	15,600	640	220
UMSL South	19,600	750	410
Rock Road	43,400	1,620	970
Wellston	24,700	950	490
Delmar Loop	51,900	1,940	1,160
Shrewsbury	49,400	1,860	1,080
Sunnen	5,700	220	120
Maplewood-Manchester	18,400	670	450
Brentwood-I-64	24,300	910	540
Richmond Heights	19,800	660	620
Clayton	22,200	880	380
Forsyth	9,800	390	160
University City-Big Bend	12,700	480	280
Skinker	18,300	700	370
Forest Park	109,300	3,980	2,680
Central West End	135,400	5,440	2,130
Grand	78,800	3,010	1,640
Union Station	44,800	1,620	1,150
Civic Center	84,900	3,100	2,060
Stadium	40,100	1,290	1,380
8th & Pine	47,900	1,900	800
Convention Center	44,300	1,600	1,120
Arch-Laclede's Landing	34,900	1,050	1,370

Below Average Boardings

Above Average Boardings

Average Boardings

The second step in the BART strategy requires evaluating various parking scenarios, such as whether or not replacement parking can be achieved using shared or joint parking arrangements, or if it can be provided on-street, off-site, or captured by adjacent stations. The parking lots that Metro owns and operates for free still generate returns in the form of fares paid by those who park to use the transit service. However, the opportunity to utilize the land for parking instead of development would also provide economic returns. In order to balance the potential loss of fares resulting from the conversion of park and ride spaces to development, TOD must be high in density and provide strong connections from the MetroLink system to connecting bus networks that effectively serve nearby communities, as well as strong connections such as trails and sidewalks from station areas to nearby neighborhoods and destinations. While paid parking scenarios make sense within urban or urbanizing settings such as the Downtown and Major Urban Center typologies, they may not represent viable strategies in stations covered by the Neighborhood, Suburban Town Center, and Campus / Special Event typologies.

Another TOD strategy looks to reduce replacement parking numbers for new development by setting lower maximum parking caps, rather than minimum space requirements. Providing for the full replacement of all parking spaces used for private sector development in a given station area can create difficulties in making projects work financially, in that it forces a developer or the public sector to consume larger areas of land that may be better used (from an economic value standpoint) for development. Another method would be to phase down parking demand. Early stages of constructed development would maintain a higher number of existing parking spaces, while subsequent stages of development would gradually decrease the number of parking spaces provided, in line with changing levels of parking demand over time. In other words, as the residential and commercial densities at particular station areas increase with stages of development, a larger pool of transit riders will live in the vicinity of the station area or use MetroLink to directly access shops or businesses in the station area, meaning that the demand from park and ride users will decrease and demand from transit users not requiring vehicular access and parking will increase. In addition, as developments grow over time and the economic value of the various projects increases, station areas will become more likely to support the construction of structured parking facilities.

The parking replacement strategy for particular station areas may also involve the shifting of parking from off-street parking lots to on-street parking spots provided on streets within the station area. Metered parking (metered either all day or during part of the day) can provide revenue for a particular city and can also provide additional parking spaces to compensate for those lost to new development in the station area. Cities should also explore and calibrate the management of on-street parking spaces (in terms of pricing, time limits, and enforcement) within station areas in order to ensure that parking spaces turn over regularly and thereby provide short term parking to serve surrounding businesses and restaurants. Managing parking spaces by user type also helps to effectively serve all constituencies in the station area. For example, designating spaces on certain streets only for residents (through permits) protects these spaces from use by transit riders or business patrons. Short term parking ensures the provision of convenient and timely on-street parking spaces to serve businesses and retail. Private off-street lots in a given station area can continue to serve as employee parking for various businesses in the vicinity. The commuter user segment relies on parking that is consistently available at various stations. Some cities around the country have earmarked certain percentages of parking spaces within a station area for commuter use only. Some transit agencies reserve spaces for commuters through a fee and others provide special stickers for commuters using station area parking lots.

Parking Districts can also be established for public parking – either on-street or in parking structures. A parking district establishes a managing entity that provides new developments the option of paying in lieu of parking, rather than constructing it themselves. It often offers the buy-in at a rate that is less expensive than the actual cost of constructing the parking space. The managing entity then constructs the pooled parking for the entire district, while managing programs like shared car service providers. Parking districts work best when a station has an existing supply of parking to fill parking needs while the overall parking fund is growing.

In addition to strategies that shift or readapt parking allocations, Metro should also encourage alternative modes of travel by improving local transit and pedestrian and bicycle facilities leading to the stations. Parking discouragement in station areas can be linked to TOD zoning language that prohibits certain automobile-dominant uses, like auto-oriented retail, automotive sales and services, and industrial uses. The promotion of a greater presence of pedestrian and bicycle users requires street level infrastructure that serves lower speeds of traffic, with traffic calming devices such as bulb-outs, raised intersections, sharrows, or bike lanes.

Parking Replacement Case Studies

San Francisco Bay Area Rapid Transit (BART)

To facilitate a context sensitive evaluation of the most cost-effective mix of TOD, replacement parking and alternative access improvements for each station area, BART commissioned the development of *Replacement Parking for Joint Development: An Access Policy Methodology* (Prepared for BART in April 2005 by Richard Willson, PhD). This methodology includes a spreadsheet which allows BART to model and evaluate the capital and operating costs and ridership and revenue impacts of alternative combinations of development, parking, and access improvements. Notably, the model incorporates available data on the unique characteristics of each station and its surrounding area, such as station ridership and peak hour line capacity and current access mode split, as well as available literature on the ridership impacts of TOD. Many of the coefficients used in the model are based directly on the findings of comprehensive research on the travel patterns of the residents and employees of TOD's and existing communities within walking distance of rail transit stations throughout California, published in *Travel Characteristics of Transit Oriented Development in California*, conducted by Hollie Lund, Robert Cervero, and Richard Willson in 2004[7].

Following adoption of the BART TOD Policy and the initiation of daily parking fees in 2005, BART released Access BART (2006), a study of the ridership tradeoffs between land use strategies and access enhancements (including parking). Key study findings include[8]:

- "Land use intensification holds the greatest potential for building off peak ridership, especially during the midday period. TOD offers BART the opportunity to build all day and off peak ridership which takes advantage of capacity in the existing BART system without imposing additional costs on the system."

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7 Lund, H., R. Cervero, and R. Willson (2004), Travel Characteristics of Transit Oriented Development in California, Final Report., Funded by a Caltrans Transportation Grant – Statewide Planning Studies, FTA Section 5313(b)

8 Access BART (2006).

- "For the system as a whole, a parking space yields 1.0 passenger trip per day[9]. Findings from the Direct Ridership Model suggest that a household [within walking distance of the station] yields from about 0.35 to about 1.1 [trips per day] depending on household size and income. This changes from line to line."
- "TOD has the potential of generating 1.76 times the number of daily boardings as it generates in the AM peak period along that corridor[10]."
- "Expanded station access, with no net increase in parking and an 8% increase in feeder bus service, when coupled with the TOD intensive land use strategy, results in a 19% increase in AM boardings and a 29% increase in daily boardings [systemwide]."
- "Additional parking yields riders for the BART system but not to the same degree as land use intensification."
- "If BART wanted to focus exclusively on residential TOD, in order for a ridership neutral proposition, residential development must be at least 70 units per acre and 80% of the BART parking must be retained."

The Access Policy Methodology has been applied in a variety of station area planning processes. The model has been used to inform the BART Board and staff about potential impacts of alternatives, rather than to directly determine the parameters of development and parking on BART property. In several high profile cases, BART and/or its local government partners have been reluctant to endorse the mix of TOD and parking that the model suggests would maximize ridership and system revenues. Nonetheless, the model findings can be credited with achieving below-100% parking replacement outcomes in some recent station-area development plans.

MacArthur Transit Village

The MacArthur BART Station is a heavily used transfer station in the urban Temescal neighborhood of Oakland. Planning for the MacArthur Transit Village has been in the works since 1993. Given the high density of residents and jobs in the surrounding area, the pedestrian and bicycle accessibility of the site, the density of the TOD planned for BART property, and the availability of high frequency bus and shuttle transfers for station passengers, model results indicate that BART ridership and revenues would be highest with a development plan that includes just 50 percent of the existing supply of 600 spaces.

Instead, responding to concerns about spillover parking and fears of lost parking revenue, BART has settled on a plan to replace 85 percent of current parking, and is working with the City of Oakland to accommodate a limited number of commuters parking on-street in surrounding neighborhoods.

Hayward

Modeling conducted using the BART Access model indicates that the most cost-effective mix of parking and TOD would require replacement of only 75 percent of the existing station parking supply. However, the BART Board pushed to replace 90 percent of the parking (at a cost of up to $50,000 per space for structured parking). BART staff suggest that the most

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9 Note. This system-wide average ridership generation of 1.0 transit trips per parking space per day accounts for both vehicle occupancy, and occupancy and turnover at BART parking spaces (parking occupancy is substantially less than 100% system-wide).

10 Much of the available data used to project transit trip generation of TOD's is for peak periods only. This ratio allows projection of the total daily trip generation of TOD's in the area with available data for AM peak periods.

likely outcome for the station involves replacement of 90 percent of the existing parking supply, with 75 percent of the spaces replaced on-site, and on-street parking priced and managed jointly through a Parking Benefit District (PBD) to accommodate 15 percent of the commuters who currently park in the BART lot.

Washington DC Metropolitan Area Transit Authority (WMATA)

A key component of WMATA's successful joint development program has been its innovative approach to parking management. Under the Parking and Facility Replacement Policy (9.0), full replacement of commuter parking is no longer required for all joint development on agency property. The policy states[11]:

9.0 WMATA PARKING AND FACILITY REPLACEMENT

9.1 Policy for Parking and Facility Replacement

It is WMATA's policy that parking displaced by a joint development will be replaced on a 1-for-1 basis at the developer's cost. Upon review of a site to be included in the joint development program, the Board of Directors may determine that:

A. Parking at the site may be replaced at a reduced specified amount at the cost of the developer, consistent with the requirements of FTA and WMATA's Bond Resolution. [or]

B. Parking at the site will be replaced at an increased specified amount at the cost of the developer.

The Board may also determine that, where the analysis indicates that its parking replacement policy makes development of a site infeasible, an inducement may be required to support development of the site. That inducement shall be specified and may be in the form of a funding mechanism (such as Transit Infrastructure Investment Fund (TIIF) funds allocated to the local jurisdiction) to pay for the partial or entire cost of parking. The Board may also consider alternative parking locations and fee structures.

In practice, WMATA makes all decisions regarding parking supply and management, including the potential for shared parking with TOD, on a case by case basis for each station[12]. Where possible, the agency seeks to establish shared parking arrangements with developers/property owners and their tenants that maximize efficiency in parking utilization. Facilitating shared use of a limited supply of parking between restaurant and entertainment land uses with peak demand during evenings and weekends and commuters with peak demand during weekday business hours benefits all parties involved by reducing the total number of spaces, cost, and amount of land required for parking. At the same time, it increases the space available for and potential revenue and ridership benefits of TOD on site.

Recent joint development at the Rhode Island Avenue Metrorail Station in the District of Columbia is a case study in WMATA's innovative and coordinated approach to TOD and parking management. In 2003, a major mixed-use project with 274 residential units, and 75,000 square feet of commercial space was proposed for development at the station on

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11 WMATA Joint Development Policies and Guidelines, revised February 21, 2002. www.wmata.com/bus2bus/jd/ revised_ policies/RevisedGuidelines.pdf

12 Telephone communication with WMATA Parking Manager Patrick Schmitt

land used at the time for commuter parking (surface lots)[13]. Given the Station's location in a densely populated urban neighborhood, WMATA did not propose full replacement of existing commuter parking during development. Instead, the agency negotiated with the developer to replace 70% to 80% of the parking on-site, with most of that – 216 spaces – shared with the tenants of the new development on site.

TriMet, Portland, OR

Although most commuter parking for rail and bus riders in Portland, Oregon is provided free of charge to drivers, the region does offer several lessons when it comes to parking management and transit oriented development:

- Portland has piloted short-term metered parking pricing, which increases turnover of prime parking spaces at its busiest park and ride lots.
- Portland Metro, the region's directly-elected regional government, requires local governments to adopt maximum off-street parking requirements in transit accessible areas, increasing (a) the viability of and capacity for TOD, and (b) consequent demand for transit.
- Portland builds "development oriented transit," – light rail lines that are carefully planned to connect existing urban centers, with routes and stations located to facilitate and serve future growth and development as planned.

Due to the region's history of coordinated transportation and land use planning, including both TOD around existing rail stations and planning for "development oriented transit" lines with the intention of serving existing urban centers and/or to facilitating TOD on underutilized land, TriMet does not depend as much on park and ride commuters for ridership as many of its peer agencies. TriMet patrons have access to a total of 13,201 parking spaces at 63 public and privately owned and operated parking facilities designated for use by TriMet commuters.[14] TriMet had an average of 24.5 systemwide boardings per day for each park and ride space in 2009, a ratio far exceeding that of comparable transit agencies with modern light rail transit and local bus services. This high ratio of ridership to parking spaces is reflected in survey data on the mode of travel used by patrons to access TriMet's MAX light rail stations. While the vast majority of MAX riders get to the station by walking, bicycling, or taking the bus, just 17% use a park and ride lot.[15]

Park-and-Ride Lot Utilization

Systemwide, TriMet has more than enough parking to serve its customers who seek auto access to rail and bus services. Occupancy trends show that only the park and ride facility serving the Red Line is regularly more than 90% occupied. On average, the 15 park-and-ride lots serving the Blue Line are 62% occupied, and the two MAX Yellow Line lots are 42% occupied. Although they serve suburban communities where one might expect higher volumes of park and ride commuters, lots serving the new WES and MAX Green Line are typically less than half full (WES occupancy averaged 39%, while Green Line lots were only 16% full soon after opening).

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13 Rhode Island Avenue Parking Analysis, Technical Memorandum #1, prepared for the US EPA and DC Office of Planning (2003) by Nelson\Nygaard Consulting Associates.

14 This includes 800 park and ride spaces at four park and ride lots at WES commuter rail stations and 2070 spaces at five new park and ride lots serving the MAX Green Line to Clackamus Town Centre which opened in 2009.

15 TriMet Origin-Destination Survey (2002)

Short-term Metered Parking

As of 2010, most commuter parking in the TriMet system is available to daily commuters free of charge. Since 2006, TriMet has charged a small fee for use of short term metered parking at preferential locations within two of the busiest park and ride lots in the system. The purpose of this short term pricing program is to increase the availability of station parking for midday travelers, and to increase transit ridership by increasing turnover of these prime parking spaces.

At both the Gateway Transit and Sunset Transit Centers twelve spaces near the rail station entrance have been reserved for short term paid parking. Meter rates are $0.50 per hour and transit patrons may stay for up to five hours. Given the small number of priced parking spaces at each lot, TriMet opted not to set up its own meter and/or fee collection system. Instead, the District contracted with the City of Portland to install and operate parking meters at each facility using its standard multi space pay and display meters. TriMet staff report that the agency is pleased with its current outsourcing arrangement, but intends to use its own fare media and ticket machines to process parking payments if metered parking is expanded to other lots, or if the Board establishes parking fees elsewhere in the system. TriMet initially established the $0.50 per hour meter rate in 2006 by evaluating market rates for parking in downtown Portland. Rates were set to ensure that the cost of parking for several hours, plus a standard round-trip MAX fare, would not exceed the average daily cost of parking in downtown Portland.

Shared Parking

To a greater extent than many other comparable transit agencies, TriMet has utilized shared parking arrangements to provide commuter parking for its bus and rail transit patrons. Nearly half of all park and ride facilities served by TriMet are public or privately owned and operated parking facilities (not owned or managed by TriMet). The majority of these facilities are church parking lots, but TriMet also has shared parking arrangements with other businesses and organizations, such as the Milwaukie Elk's Lodge, Clackamas Town Center Mall, the Sherwood Regal Cinema, and GI Joe's, a major sporting goods retailer. TriMet has a standard shared parking agreement which is signed by each of the participating institutions and organizations with which it partners. In most cases, the agreement specifies that the private property owner is responsible for operating and maintaining the facilities. At the most subscribed lots, however, TriMet makes annual payments to the owner/operator to cover maintenance expenses related to use by transit patrons.

Integrating Parking and TOD

TriMet supports TOD both by the planning and design of its transit lines, which are – per the regional plan – routed to serve both existing urban centers, as well as areas planned for additional growth and development, and by the design of its park and ride facilities. The first goal of TriMet's Park & Ride design program is to "allow and incorporate TOD; and to minimize impacts on neighborhoods."[16]

To facilitate TOD – especially projects that promise a large boost to system ridership and revenues – TriMet does not require 1:1 replacement of commuter parking spaces displaced to make way for development on surface parking lots. Replacement of commuter parking spaces with transit oriented development at densities of at least 30 residential dwelling units per acre, at least 75 employees per acre, or other comparable standards for high density development is expressly permitted and encouraged as a matter of TriMet Policy.[17]

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16 "TriMet's Park & Ride Program," a presentation to the Planners Idea Exchange by Young Park, TriMet

17 TriMet Policy (2001) cited by Todd Litman of the Victoria Transportation Policy Institute (VTPI) and confirmed by Young Park, TriMet (April 2010).

In practice, TriMet staff analyzes the ridership impacts of TOD proposals and/or the various alternative elements of station area plans. Simple modeling is conducted by applying expected work and non-work mode splits to planned land uses to determine potential ridership impacts. In general, where modeling suggests that TOD generated ridership will be higher than the ridership generated by the parking that would be displaced, TriMet does require parking replacement on site.

Regional Parking Policies

The most innovative and relevant lesson of parking pricing from Portland is its regional policy requiring local governments to implement maximum limits on the amount of off-street parking that can be provided for certain land uses and activities across the region. These parking maximums are lower in areas within walking distance of high frequency transit routes and stations – reducing the share of accessible land dedicated to parking and increasing capacity for pedestrian and transit oriented development. These requirements are spelled out in Title 2 of Portland Metro's Regional Functional Plan, (1997), which contains specific land use and transportation requirements to be addressed by all 28 jurisdictions in the region.[18]

Recommendation For The St. Louis Region And Metro

- The parking replacement strategy identified by Professor Willson appears to be the most appropriate strategy for the St. Louis region. In general, the strategy identified for the BART system is most appropriate for the St. Louis region and for Metro.
- Many of the metro areas that have created formal strategies have not implemented these strategies on a system wide basis.
- The conclusion is that the St. Louis Metro system should implement the type of parking replacement strategy identified in the BART system, but should apply it on a station by station basis rather than on a system wide, one size fits all basis. Not all systems are the same. Metro should work to complete a more formal process of measuring the utilization of parking lots along the Metro system and then should work to implement parking replacement strategies on a station by station basis. Metro should work to do this as soon as possible in order to lay the ground work for TOD to move forward over the near term, over the next few years, as the real estate market continues to (hopefully) recover in the near term.

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18 Portland Metro is a directly elected regional government for the three-county Portland Metropolitan Area that fully encompasses the TriMet District. As authorized by the state, Metro has authority to prepare regional transportation and land use plans and to review and reject local land government land use plans that conflict or do not comply with the regional plan. The Regional Functional Plan (1997) is Metro's means of implementing its 2040 Growth Concept (Community Building Sourcebook, TriMet, 2007).

Affordable Housing Strategies

Trends in Land Use Values

An examination of existing Transit Oriented Developments around the United States suggests that TOD development has a tendency to increase land and housing costs. As a result housing can become unaffordable to transit dependent populations who are most in need of access to transit facilities. The magnitude of these increases can vary based on a variety of factors. Retail development has been found to be a very attractive amenity near transit stations because shoppers can meet their needs without having to get in a car. One study found that the greatest increase in housing values near transit stations occurred where there was a retail presence. Where transit stations are surrounded by higher income neighborhoods and/or in close proximity to quality schools, parks, and other neighborhood amenities, housing prices can be positively influenced. Proximity to job centers, pedestrian facilities, and the quality and frequency of transit service can also have a positive impact.

Conversely, some factors near transit stations can limit increases or even cause a station to have a negative impact on housing values. Non-transit oriented land uses such as industrial land uses have been proven to have negative impacts of land values. Similarly the presence of crime in the vicinity of transit stations can also have an impact. In Atlanta, the presence of crime at stations lowered surrounding property values. This was a particularly an issue at stations with large surface parking lots. Designing station districts according to the principles of crime prevention through environmental design (CPED) is a key consideration in improving safety.

Finally, general economic conditions can be an issue. A study of properties adjacent to transit stations in the Buffalo, New York area revealed that properties in higher income areas that surrounded transit stops enjoyed an increase in values due to transit, whereas properties in generally lower income areas reported a decrease in values due to transit adjacency. However, the Buffalo metro area in total is losing population and income, and this overall trend may represent the root cause of the trends in land values observed near transit stations around the metro area.

Affordable Housing in the St. Louis Region

Few local, state, and national programs are targeted to assist local housing and transit providers in accommodating affordable housing. Those that do exist focus primarily on providing financial incentives to developers. Since 2005, HUD, DOT, and the FTA have sought to develop collaborations in encouraging affordable housing including defining a common outcome, developing monitoring and data gathering procedures, aligning policies and programs and policies, and establishing a common framework for collaboration. No doubt such efforts will continue and the St. Louis transit oriented development effort should anticipate such initiatives and work to include affordable housing in its planning and development efforts.

Some policy makers and housing experts are concerned that low income households may not benefit from transit oriented developments. Their concern is that housing developers in seeking to maximize profits will only build market rate housing. Their concern is that existing low income housing near transit, whether affordable or not, will no longer be affordable following the completion of newer transit oriented developments, thereby further increasing the demand for affordable housing.

The development of affordable housing at transit stations in St. Louis faces two hurdles. First, these developments typically include residential uses at higher densities in order to drive down the cost of production. As observed elsewhere in this document, there are

few sites within the system where higher density zoning is currently available. Local communities must first determine their willingness to accept higher density housing within their community. Secondly, many cities and towns with the St. Louis region are concerned about the inclusion of subsidized housing with their communities. Local communities would need to gain public acceptance of projects that include affordable housing units in order to move forward with these kinds of developments.

That said, the financial incentives available for developments that include affordable housing and the great need to provide low cost living space in close proximity to transportation means that the provision of affordable housing may be a key element in launching transit oriented development in the region. State housing and development agencies provide funding for affordable housing through the Low Income Housing Tax Credit (LIHTC) Program. The LIHTC is a federal indirect subsidy that promotes the financing of rental housing for low income housing families. The Missouri Housing Development Corporation, which administers the LIHTC program, can be a helpful partner in providing for affordable housing within larger transit oriented developments. In a similar way the Housing Authority of St. Louis County and the St. Louis Housing Authority can serve as key allies.

St. Louis is also fortunate to have private developers like McCormick Barron, as well as non-profit housing developers such as Beyond Housing, who are familiar with these various public financing mechanisms and have proven track records in developing quality affordable housing.

Research by the General Accountability Office (GAO)[1] further suggests that two programs of the Federal Highway Administration – the Surface Transportation Program and the Congestion Mitigation and Air Quality Improvement Program, referred to as flexible funding programs, allow local jurisdictions to use some of their funds to address specific community priorities. The GAO suggests that such funding may be utilized to address affordable housing issues. Similarly, applications for funding through the New Starts and Small Starts program and the Transit Capital Assistance programs can be aided by the incorporation of affordable housing.

HUD typically provides housing assistance through three programs: housing choice vouchers, public housing, and project based rental assistance. These program generally serve low-income households – defined as households with incomes less than or equal to 80 percent of median area income (AMI). Some of these programs target households with very low incomes – defined as those households with incomes of 30 percent or less of AMI.

The Housing Choice voucher program, administered by local housing authorities, provides vouchers that can be used by families to rent houses or apartments in the private housing market. The vouchers are paid directly to property owners on behalf of the participating household. Local housing authorities have some flexibility in establishing the amount of subsidies that can be offered for particular projects and can generally offer subsidies that are ten percent more or less than the defined market value within the community.

Local public housing authorities can also provide grants to develop, operate, and manage public housing projects and can provide Section 8 rent subsidies in the form of multi-year housing assistance payments to private developers and managers of behalf of eligible

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19 United States Government Accountability Office. Report to the Chairman, Subcommittee on Transportation, Housing and Urban Development, and Related Agencies, Committee on Appropriations, U.S. House of Representatives: "Affordable Housing in Transit-Oriented Development." September 2009.

households. HUD also provides affordable housing assistance through the Community Development Block Grant program and the HOME program.

In successful transit oriented developments, rent can rise above the level where voucher-based subsidies are effective, forcing residents to move to more transit dependent locations. Means of ensuring the preservation of affordable housing at transit stations are being put in place in some cities. California, for example, has created the Transit-Oriented Development Housing Program. This program makes loans and grants available to developers who are willing to commit to providing at least fifteen percent of their housing units as affordable units. In Portland, Oregon, the Transit Oriented Property Tax Abatement supports the development of affordable housing on vacant or under-utilized sites in transit-oriented developments by reducing operating costs for developers through a ten-year tax exemption. Denver, Colorado, has similarly developed a transit oriented development fund to assist in the creation of affordable housing units at transit station locations.

Many states use federal tax credits as an incentive to develop affordable housing near transit stations. States administer LIHTC programs by allocating credits to developers according to the state Qualified Allocation Plans (QAP). While there is no requirement that preference be given to the allocation of credits for proximity to transit, some states like New Jersey give incentive points to applications that are within a certain radius of stations or within a transit-oriented development. States can also allocate credits to areas designated by HUD as high-cost areas. Portland, Oregon, has used this designation to ensure the presence of affordable housing within transit oriented development in the high cost locations served by their transit system.

Few cities have utilized their land use and zoning authority to specifically target transit stations for affordable housing. Those that do, have provided density bonuses to developers that agree to designate a certain number of units as affordable housing. Other incentives include reduced parking requirements. These can reduce development costs and increase the ability to provide affordable housing. The use of tax increment financing and affordable housing trust funds are examples of other local incentives that have been utilized. Some communities utilize inclusionary zoning that requires a certain number of housing units to be affordable housing. While East-West Gateway and Metro can encourage the local municipalities within the region to adopt such policies, clearly these decisions will be made on a case by case basis at the local level.

Where Metro could be more proactive in encouraging affordable housing is at those stations where the district owns land. Some state and local governments have required developers to include affordable housing whenever the government has sold or leased land to developers. At stations like North Hanley or Fairview Heights, Metro could adopt such a policy.

It is clear that the Federal Transportation Administration, Environmental Protection Agency, and Department of Housing and Urban Development will continue to place an emphasis on the creation of affordable housing within transit oriented development. Given the current challenges of launching any kind of transit oriented development within the MetroLink system, the added challenge of incorporating affordable housing may be too daunting at this time. However, Metro should continue to strive to develop a policy in this regard and to work with local municipalities to address this issue.

Public Finance Incentives

Just as cities and counties provide public finance incentives for various conventional forms of real estate development, these entities can tailor public finance tools to provide incentives for Transit Oriented Development.

Tax Increment Financing (TIF) – Cities in Missouri and Illinois have routinely used TIF in order to use tax revenues produced by particular development projects during the initial years of operation to help pay for infrastructure improvements and related project costs incurred by the private sector. Specifically, the concept of Tax Increment Financing allows a developer to use the additional tax revenue generated by a particular development to pay for various public improvements such as roads or sewers. Any developer could apply for TIF for a TOD in most communities today. However, the political environment has grown more difficult for TIF overall over the last few years, as some cities have lost money on TIF arrangements during the recession and critics have increasingly fought the awarding of TIF financing to new development. Communities in the St. Louis region, however, could choose to provide TIF for transit oriented development specifically and provide bonus points in terms of consideration of development deals for those projects that tie TIF with TOD components.

Tax Abatement – Many cities traditionally use property tax abatement as an incentive to lure new development, particularly for projects that involve significant job creation such as business parks. Again, the various jurisdictions in the region could specifically tie tax abatement to TOD or provide additional tax abatement provisions or benefits for those projects that involve transit-related components. The sections that follow provide some additional detail concerning tax abatement programs in either Missouri or Illinois.

Waiver of Development Fees and Levies – Many cities routinely charge new developments with impact fees, for roads, schools, community facilities, parks, and related amenities and community-related components. In order to encourage TOD, cities in the region could waive these fees for projects that orient around transit centers and in turn charge higher fees for projects that involve suburban expansion or the creation of highly disconnected or lower density real estate development. Providing this waiver for TOD would simply make these types of projects more viable from a financial perspective.

Location Efficient Mortgages (LEMs) - The local jurisdictions, along with state and federal partners such as Fannie Mae, should explore introducing LEMs for the station areas in St Louis. These programs would provide mortgage discounts (in terms of interest rates, fees, etc.) for individuals buying homes within walking distance of MetroLink. This kind of incentive would help promote the development of a greater mix of land uses in the local station areas and additional density as well.

Public – Private Partnerships

While providing an appropriate land use approval context to support transit-oriented development is critical, projects of this intensity and complexity typically require public financial assistance. Local cities and counties may also pursue the following public-private partnerships or strategies to help promote TOD in the region.

Public Infrastructure Investment – Local cities or counties may proactively invest in new roads, streetscapes, infrastructure, and related investments in TOD projects. By investing

in public infrastructure upfront (or, providing loans for developers to carry out these projects themselves) the public sector becomes an active investor in TOD in a given jurisdiction.

Public Investment in Station Area Planning – Conducting detailed master planning for TODs at station areas may involve significant funds, in order to define future transportation and open space frameworks, the layout of specific buildings and land uses, and to create marketable plans that will achieve approval by various levels of government oversight. Local jurisdictions may assist in promoting TOD by investing in these planning efforts at the outset of a project.

Property Acquisition – Securing the necessary parcels to proceed with a viable project often represents one of the largest hurdles to creating TOD in a given area. Local cities and counties may help in promoting TOD by purchasing available parcels at station areas and "land banking" these holdings until the time is right to proceed with formal TOD efforts. By offering up significant pools of land for TOD, the public sector can help drive the design and implementation of projects at transit stations and perhaps also gain an investment return on its land holdings from these deals.

In addition to purchases of property for TOD, local jurisdictions should work to create investment funds that could grow over time and could help to fund strategic acquisitions of properties that could represent key areas for future development around MetroLink. Investment funds could also participate in potential real estate projects around the station areas.

While eminent domain is a potential tool for use in land assembly, it has proven to be highly controversial in Missouri and Illinois when utilized to assemble land for private development and is not recommended here. Eminent domain may, however, still be appropriate as a means to acquire land for transportation and other infrastructure improvements.

Public / Private Joint Development – In some cases, formal partnering between public sector entities (such as Metro, or local governments) and private sector developments makes sense in promoting TOD. For example, local governments or Metro could contribute land to deals or participate financially (in terms of equity financing) to move deals forward.

Specific Public Finance Tools, State of Missouri

Transportation Development Districts (TDDs)

A transportation development district (TDD) provides another tool that the public and private sectors in Missouri may use, either separately or in conjunction with other economic development tools, to support economic growth in local communities. State statutes provide a great deal of flexibility with regard to TDD formation and execution, and therefore local communities across the state have pursued TDDs as a popular economic development tool over the last twenty-plus years.

The state's TDD Act, enacted in 1990, allows for the formation of local transportation development districts (or "TDDs") to fund, promote, plan, design, construct, improve, maintain, and operate one or more transportation projects within the district's boundaries. Eligible projects may include bridges, streets, highways, interchanges, intersections, signage, signalization, parking lots, bus stops, stations, garages, terminals, hangars, shelters, rest areas, docks, wharves, lake or river ports, airports, railroads, light rail, or other mass transit and any similar or related improvements or infrastructure. A District may be formed through a petition of local residents, the consent of all property owners in the designated area, or by a local governing body or transit agency. Before the construction or funding of any projects within the TDD, the District must submit project information and budgets to the Missouri

Highways and Transportation Commission for approval. In cases where the proposed improvements will not fall under the jurisdiction of the state Commission (MoDOT), the local jurisdiction must review and approve project information and budgets.

Similar to TIF, in the case of TDDs the property owner / developer pays nothing for the publicly financed improvements funded by the TDD, but is ultimately responsible to bondholders if the tax revenue generated by the improvements is insufficient to make the payments.

TDDs raise revenues within the boundaries of the district through the following types of mechanisms:

Bonds, notes, and other obligations
The TDD may issue obligations in order to raise money to finance transportation improvements in the district.

Sales Tax
A TDD may impose a district sales tax, in increments of one-eighth of one percent up to a maximum of one percent, on the receipts from all retail sales made in the district. Retailers in the district must prominently display the rate of the sales tax imposed or increased as a result of the TDD sales tax, in the cash register area.

Alternate Sales Tax
In cases where a TDD district encompasses an entire city or county, the relevant governing bodies (with voter approval) may impose an Alternate TDD Sales Tax on all retail sales made in the District. The Alternate TDD Sales Tax may be imposed at a rate of one-eighth of one percent, one-fourth of one percent, three-eighths of one percent, one-half of one percent, or one percent and must be uniform across the District.

Property Tax
Assuming approval by at least four-sevenths of the qualified voters in the TDD District, the TDD District may impose a property tax in the amount not to exceed the annual rate of ten cents on the hundred dollars of assessed valuation.

Special Assessments
The TDD District may assess one or more special assessments for specially designated project improvements if approved by the majority of qualified voters or the owners of record of all of the real property located in the district who sign a special assessment petition.

Toll Roads
The TDD District may charge and collect tolls or fees for the use of a transportation project. In order to do this, the District may relocate an existing state highway, subject to approval by the Commission, or an existing local public street or road, subject to approval by the local governmental body with jurisdiction over the road.

TDDs, in contrast to Tax Increment Financing, raise their own taxes and do not simply divert tax revenues from another political entity (such as a school district or local city or town). In addition, TDDs have emerged as a good complement to an existing or new TIF district, especially in cases where the TDD can pay for a portion of transportation improvements and thereby allow the TIF to fund other public improvements, such as utilities, streetscape, or other infrastructure. Given the political controversy that has surrounded the use of TIF in recent years, the TDD concept has a fairly bright future across Missouri in helping to promote and support local economic development efforts.

Community Improvement Districts (CIDs)

In contrast to Transportation Development Districts, that are only able to fund transportation-related improvements, a CID can finance a wide array of public improvements and services that can enhance the district. A CID can be established by a government entity or a non-profit and requires the approval of a petition signed by either the property owners that collectively own at least 50 percent of the assessed value in the proposed district, or a total of more than 50 per capita of all owners of real property within the proposed district. The petition must outline a five year plan that describes the purposes of the proposed district, the services it will provide, the improvements it will make and an estimate of the costs of the project. Once the petition is filed, the governing body of the particular municipality in question must hold a public hearing and approve the creation of the proposed district by ordinance. In contrast to a Neighborhood Improvement District, a CID is a separate legal entity, and operates distinct and apart from the municipality that creates the district.

The CID may finance improvements through the imposition of 1) special assessments for those improvements that specifically benefit the properties within the district, 2) property taxes, or 3) a sales tax up to a maximum of one percent. A CID may finance the costs of a project through the charging of fees, rents, and charges for district property or services, or grants, gifts, and donations. A CID may also issue bonds, notes, and other obligations in order to fund improvements.

A CID may finance the following types of improvements within its boundaries:

- Pedestrian or shopping malls and plazas
- Parks, lawns, trees, and any other landscape
- Convention centers, arenas, aquariums, aviaries and meeting facilities
- Sidewalks, streets, alleys, bridges, ramps, tunnels, overpasses and underpasses, traffic signs and signals, utilities, drainage, water, storm and sewer systems and other site improvements
- Streetscape, lighting, benches or other seating furniture, trash receptacles, marquees, awnings, canopies, walls and barriers
- Telephone and information booths, bus stop and other shelters, rest rooms and kiosks
- Music, news and child care facilities
- Lakes, dams and waterways
- Paintings, murals, display cases, sculptures and fountains
- Parking lots, garages or other facilities

A CID may also provide a variety of public services, including the following:

- With the municipality's consent, prohibiting or restricting vehicular and pedestrian traffic and vendors on streets
- Operating or contracting for the provision of music, news, child-care or parking facilities, and buses, mini-buses or other modes of transportation
- Leasing space for sidewalk café tables and chairs
- Providing or contracting for the provision of security personnel, equipment or facilities for the protection of property and persons
- Promoting business activity, development and retention

- Providing or contracting for cleaning, maintenance and other services to public and private property and persons
- Promoting tourism, recreational or cultural activities or special events
- Providing refuse collection and disposal services
- Contracting for or conducting economic, planning, marketing or other studies

Neighborhood Improvement Districts (NIDs)

A Neighborhood Improvement District is a geographically bounded area within which certain public improvements are financed by a city through the issuance of notes or bonds, which are in turn repaid by levying assessments against the property within a NID. NIDs offer distinct advantages in executing economic development for a city and a particular District. Because the city in question issues general obligation bonds, the public improvements associated with the NID can be financed at lower interest rates. Second, a NID can be established and an assessment imposed without a city-wide election. Third, a city may group two or more NID projects together into one bond issue in order to further reduce financing and project costs. Finally, the NID Act in Missouri allows for a fairly broad range of public improvements to be financed without a requirement that the area be considered to be "blighted" in order to be included in a NID designation.

Eligible Improvements and Costs: Under the Missouri NID Act, eligible improvements and costs may include streets, lighting, parks and recreational facilities, sidewalks, utility service connections, sewer and storm water systems, flood control works, off-street parking structures, bridges, overpasses, tunnels, and "any other public facilities or improvements deemed necessary by the governing body of the city or county". The NID Act also allows for certain incidental costs to be financed, such as land acquisition and engineering, legal, and financing fees and costs. The act also carries provisions for maintenance of the public improvements during the term of the bonds or notes pertaining to the improvements.

NIDs can be established by either 1) a petition of at least two-thirds of the owners of record of all of the real property located within the proposed NID district, or 2) by the City submitting a question to all qualified voters residing within the proposed NID at a general or special election called for the purpose of approving bonds associated with the NID.

NIDs carry some distinct advantages compared to TIF in Missouri. Whereas TIF is financed by limited obligation bonds, the general obligation bonds issued as part of NID deals allow for lower interest rates. Whereas TIF requires a blight designation for the affected district or area, NIDs do not carry such requirements. Another distinction between NID and TIF is that, in the case of TIF, property owners or developers do not pay anything initially for the publicly financed improvements but are ultimately responsible to the bondholders if the tax revenue generated by the improvements is insufficient to make the payments. In contrast, under NID, property owners pay upfront for public improvements through assessments over and above any property or sales taxes they already pay, but the municipality is ultimately responsible to the bondholders if property owners are unable to make the necessary payments.

Enhanced Enterprise Zones (EEZs)

The Enhanced Enterprise Zone Tax Benefit Program, sponsored by the Missouri Department of Economic Development, provides various tax credits to new or expanding businesses in a Missouri Enhanced Enterprise Zone. These zones are specific geographic areas designated by local governments that must be certified by the Department of Economic Development. The program offers state tax credits, accompanied by local real property tax

abatements, to eligible businesses in the EEZ. To receive the tax credits, a business facility must provide for two new employees and $100,000 in new investments (in the case of a new or expanded business facility), or two new employees and $1 million in new investment (in the case of a replacement business facility). Companies receiving EEZ tax credits must provide health insurance to all full time employees in Missouri in order to qualify for the program. Eligible investment expenditures include the original cost of machinery, equipment, furniture, fixtures, land and buildings, and/or eight times the annual rental rate paid for these items. Ineligible businesses for the EEZ program include gambling establishments, retail trade entities, educational services entities, religious organizations, public administration entities (governments), and food and drinking places.

Chapter 353 Tax Abatement

The State of Missouri offers a Chapter 353 Tax Abatement as an incentive that can be used by cities to encourage the redevelopment of blighted areas by providing real property tax abatements. Under this program, an "Urban Redevelopment Corporation" must be organized pursuant to the Urban Redevelopment Corporations Law in the state of Missouri and the area designated for tax abatements must be deemed a "blighted area" under state law. Under the program, tax abatements are available for up to 25 years. During the first 10 years, the property is not subject to real property taxes except in the amount of real property taxes assessed on the land, exclusive of improvements. During the next 15 years, the real property may be assessed up to 50 percent of its true value. Payments in lieu of taxes (PILOTs) may be imposed on the Urban Redevelopment Corporation by contract with the city. PILOTs are paid on an annual basis to replace all or part of the real estate taxes that are abated.

In areas that are challenged by economic decline or blight, the Chapter 353 provisions provide an additional tool for local governments to provide incentives for economic redevelopment.

Sales Tax Reimbursement Agreements

The State of Missouri allows Sales Tax Reimbursement agreements as a funding mechanism to fund infrastructure associated with new developments. Under these agreements, municipalities have the ability to annually appropriate the increase in sales taxes created by new private capital investment to offset a portion of project investment costs. Under this type of agreement, a portion of City sales taxes captured from the increased sales generated by the project would be reimbursed to the developer or company for eligible expenses.

The state has laid out a number of criteria that must be followed or satisfied in order to allow for a Sales Tax Reimbursement Agreement.

- The applicant must demonstrate that the project would prevent a significant loss in existing sales tax revenue or make a significant contribution to the overall health and well-being of the local economy.
- The project must show a clear demonstration of the public purpose and the economic benefit provided through the agreement and how the agreement would further the city's economic development goals.
- The application must show that the project would not occur "but for" the incentives offered. The incentive should make a difference in determining the decision of the particular business to expand or remain in the city and it must be proven that this would not have otherwise occurred without the availability of the sales tax reimbursement.

- The firm that would benefit from the sales tax reimbursement must show its financial stability and capacity to complete the project.
- The application must ensure that the city or any other taxing jurisdiction affected by the incentive is not receiving less total sales tax revenue from the property than was received prior to the granting of the sales tax reimbursement provision.
- The sales tax reimbursement is generally not allowed to extend for greater than ten years.

Bike And Pedestrian Planning

Well-planned Transit Oriented Development provides accommodations and good access for all modes of travel, including walking and biking in addition to mass transit and vehicular travel. The station area profiles included in this TOD Framework Master Plan analyze the future planning for each MetroLink station in terms of bike and pedestrian access and identify opportunities for improvement. This section outlines reasons why the MetroLink system should plan for bike and pedestrian access and outlines some best practices to use in planning for bike and pedestrian access across the system.

- Designing streets for bicycling and walking supports more people using active transportation in their daily lives. Older adults, school children and people with disabilities will also see direct benefits as the transportation networks in and around MetroLink support their need for independent mobility.
- Active transportation and improved street safety produces long term savings for the public sector and the St Louis region as a whole, as active living serves as a preventative health measure. Improved street safety reduces the number of crashes, which in turn reduces the financial burden resulting from hospitalization and overall health care.
- All too often, pedestrian and bicycle safety is accomplished by restricting access. Safety should be integrated into street design for all road users without impeding access for walking and bicycling.
- Walking and cycling are successful when facilities provide people with safe and direct access between their homes and final destinations. A disconnected network means a person can only take a walk around the block, whereas a well-connected network lets people walk to the store, a friend's house, the transit station, school or to work.
- Walking and cycling contributes to placemaking on residential and retail corridors, increased retail spending and stronger local economies through better access options for patrons.
- In multimodal shopping corridors, people who bike and walk to shop spend more money per month than those who drive.
- Businesses located near new bike lanes and bike share stations report increased retail sales.
- Research shows that there is safety in numbers: the higher the percentage of people walking and bicycling, the safer they collectively are.
- Improving streets for walking and biking leads to reductions in crashes and fewer injuries to all street users, including drivers.
- Well-connected street networks create a more accessible and resilient transportation network, because people can take more direct routes between destinations, and people have more route options.
- Streetscapes should be thoughtfully and artistically designed to draw more people to walk for both utility and pleasure. The most successful and best-loved cities in the world have vibrant and walkable streets. Great pedestrian environments are associated with fewer commercial vacancies.
- Bicycles allow the convenience of door-to-door travel while using less space and fewer resources. They are the healthier and more sustainable alternative to cars and taxis for short trips.

- Making cycling possible has allowed some families to save up to a third of their income normally spent on vehicles or transit fares.

Best Practices for Bike and Pedestrian Planning around TOD

Bike Storage

- Bike storage facilities (bike racks) should be located in very close proximity to the actual station platforms at MetroLink stations and should be located under protective sheds or overhangs when possible to cover the storage area from snow or rain.
- Signage and wayfinding should help direct transit riders and users to bike storage facilities within the station area.
- Metro should locate bike storage facilities in well lit areas and should locate the storage units in a way to not block the main passageways for pedestrians moving to or from trains or in the general flow of traffic in a station area.
- Bike storage facilities should incorporate innovative or more attractive designs, perhaps incorporating public art, in order to make these structures more attractive and thereby attract greater use of bicycles in accessing MetroLink station areas.

Bike Rental and Bike Sharing

At key gateway MetroLink station areas, Metro should partner with other agencies as needed to provide bike sharing or bike rental programs or services in order to encourage a greater level of bike ridership in and around station areas. For example, Metro could introduce concepts and strategies such as the B-Cycle stations, which provide fixed locations for bike rentals in certain cities around the country. Metro should also consider strategies or programs to allow for bike sharing between consortiums or coops of people within a given community.

These strategies would help to reduce the overall cost of using a bicycle in the area and make it much more convenient to do so.

Pedestrian Level of Service

Pedestrian Level of Service (LOS) helps to evaluate the conditions and assets of infrastructure devoted to walking, within a given geography. The factors that influence LOS calculations include the width of sidewalks, the presence of sidewalks on streets and connecting key destinations, the conditions of pedestrian pathways, and the congestion levels on sidewalks.

In general, Metro should work with local jurisdictions to ensure that the various station areas around MetroLink report pedestrian levels of service of “A” or “B”.

Connections to Local and Regional Bike and Pedestrian Trails and Facilities

Wherever possible, planning for the MetroLink station areas should incorporate connections via walking or biking to nearby bike and pedestrian trails and connections. For example, the St. Vincent Greenway runs parallel to the MetroLink line from Delmar to North Hanley, and planning for these stations should incorporate connections, via sidewalk, trail, or other amenities, from the station platform areas to these trails. The planning for local station areas should also integrate with plans for bike lanes or bike / pedestrian trails outlined in regional planning documents such as the St. Louis Bike Plan.

Design of Local Streets in the Station Areas

The design of local streets, such as "Main Streets" in the vicinity of station areas, should follow streetscape planning principles designed to facilitate bike and pedestrian movement. The following principles should be followed as part of this process:

- Create bulbouts or curb extensions wherever possible in order to reduce crosswalk distances. Many American streets, even in slower "Main Street" areas, include pavement of significant width that can add to the distance that a pedestrian must cross to go from one side to another. While it may be infeasible to narrow streets throughout their length in certain station areas, Metro could work with local cities to narrow the crosswalk distance by creating bulbouts at intersections and mid-block locations. The bulbouts should retain travel lanes of 11 feet or less, and in most cases following this rule of thumb will create crosswalks of at least a few feet less in distance.
- Plan for wider sidewalks. Sidewalks around many of the current MetroLink station areas are of widths of as few as five feet (in line with sidewalk standards for residential side streets). Sidewalks of this width do not invite multiple people to walk along streets in station areas. In addition, narrow sidewalks do not generally facilitate outdoor dining, retail activity, and overall civic activity in local station areas necessary to make TOD a true success. Therefore, as individual station areas proceed with more detailed planning, local officials and stakeholders should plan for wider sidewalks (of up to as much as 19 feet in width) in order to provide a more conducive environment for walking.
- Introduce bike lanes or bike paths wherever feasible (on streets with speed limits above 25 mph). The introduction of bike lanes or paths is not feasible in every situation, given site dimensions or the widths of existing streets. However, in each station area Metro and local jurisdictions should work to introduce bike lanes or paths within TODs in order to provide a welcoming environment for people biking. Bike lanes generally require four feet in diameter of space, a requirement that planners do not consider overly onerous, assuming that a street can be planned from scratch as part of TOD efforts. The introduction of separated bike paths may be more feasible in suburban settings where more land is available, compared to denser urban locations such as Downtown St. Louis.
- Introduce sharrows where feasible, but avoid introducing sharrows in situations that are infeasible. Sharrows are appropriate on streets that have speed limits of 25 mph or less. Sharrows are more appropriate in situations where insufficient space exists to provide a separate bike lane, and they make drivers more aware of bicyclists due to pavement markings. In general, cities around the Midwest have started to use sharrows in various situations, and in many cases they are being implemented on streets that are inappropriate (with higher speed traffic). Rather than placing sharrows everywhere, planners for the station areas should carefully determine the streets that are most appropriate for sharrows going forward and then work with developers and Metro to implement appropriate sharrow markings.
- Introduce appropriate signage to alert drivers and others of the presence of bikers and walkers in a station area. This will improve overall safety and also give appropriate recognition to bike and pedestrian travel.
- Introduce well planned streetscapes. In order to create an actual reason for people to want to walk or bike in a station area, future development at the station areas should introduce appropriate and compelling streetscape design in order to enhance retail and commercial viability and to create public spaces that attract pedestrian and bike traffic. Just like any development, a well planned area from an urban design perspective can help to increase overall pedestrian or bike activity. Even in automobile dominated

places like Phoenix or Texas, recent developments that have introduced well planned streetscapes have led people to park in a given location and to walk. These great places represent islands of improved bike and pedestrian environments.

- Improve sidewalk and bike conditions on streets leading to the station areas. While the planning for particular station areas will likely focus on areas within one quarter to as much as a half mile away from the station platform, planners should consider the bike and pedestrian planning for major arterials within the bike shed (up to three to five miles in general). Metro and the local cities should work to introduce or improve sidewalks where they are insufficient along the major streets that lead to MetroLink stations (including streets such as Route 159 near Swansea or St. Charles Rock Road near the Rock Road station).