



TRANSPORTATION STRATEGIES FOR ENCOURAGING INFILL AND REDEVELOPMENT

April 2006

DRCOG
DENVER REGIONAL COUNCIL OF GOVERNMENTS

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Redevelopment**

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Abstract

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Author: Denver Regional Council of Governments (DRCOG)
4500 Cherry Creek Drive South, Suite 800
Denver, Colorado 80246-1531
303-455-1000
<http://www.drcog.org>

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Abstract: This report provides information for local governments on transportation strategies that could support infill and redevelopment in their communities. It includes a discussion of access and circulation issues, parking, and regulatory considerations. It also describes funding sources that may be available for infill related transportation improvements.

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Transportation Strategies for Encouraging Infill and Redevelopment

Introduction

This report describes transportation strategies that can be used by the public sector to encourage and support infill activity. It provides an overview of general transportation issues related to infill development. It also provides information on funding resources for the transportation improvements that are necessary to support infill activity.

In 2005 the Denver Regional Council of Governments (DRCOG) adopted the *Metro Vision 2030* regional plan. The plan describes the preferred future growth direction for development of the nine-county region over the next 25 years. One of its key assumptions is that a certain amount of infill and redevelopment activity will occur. Rather than simply assuming that all new development will occur at or beyond the fringe of the existing urbanized area, the plan anticipates that more than 20 percent of new development will take place within the existing urbanized area in the form of infill and redevelopment.

This assumption is based in part on the observation of recent trends. Statistics from the U.S. Census indicate that between 1990 and 2000 almost 38% of the population growth in the DRCOG region occurred within the existing urbanized area. This is a significant phenomenon that suggests there is a growing acceptance of, and even demand for, infill and redevelopment. Sustaining this pattern of development for another 25 years, however, will be more difficult and may require more deliberate effort on the part of local governments.

To assist these jurisdictions as they plan for infill and redevelopment, DRCOG has undertaken several activities. First, a workgroup comprised of staff from those communities most affected by infill (i.e., Denver and the “inner ring” suburbs) was convened to discuss infill issues and activities, and to hear from experts in this area of urban development. Second, DRCOG began researching key topics including the development of a methodology for more accurately identifying the amount of vacant and redevelopable land in the region. Third, DRCOG staff prepared this and other research reports identifying strategies that could be used to encourage and support infill and redevelopment activities.

Definition of Infill and Redevelopment

Infill and redevelopment are terms that do not have standard definitions. In much of the literature on urban development, the definition of the terms “infill” and “redevelopment” often overlap. DRCOG has elected to differentiate these terms according to the type of land that is involved.

“Infill development” involves developing *vacant* parcels within existing urbanized areas that for various reasons have been passed over in the normal course of development. “Redevelopment,” in contrast, involves recycling *already developed but underutilized* parcels.

Sites potentially suitable for redevelopment include those sites that contain abandoned (or nearly abandoned) buildings such as empty shopping malls. They may also include those sites that have already been cleared and are being used for relatively temporary purposes such as surface parking lots and even mini-storage units. Redevelopment may also include “adaptive reuse,” which is the *conversion* of an existing building to a new and more productive use.

Identifying parcels that are suitable for and likely to redevelop is a difficult task. DRCOG is researching indicators that may help anticipate such areas of redevelopment.

Infill and Redevelopment in Context

Infill and redevelopment can have both positive and negative effects, both on individual communities and on the region as a whole. Metro Vision assumes that the positive effects far outweigh any potential negative effects. It is also assumed that by anticipating and planning for future infill or redevelopment activity, communities can properly mitigate the negative effects.

The most obvious positive effect is the reduced need for converting more land from non-urban to urban uses. If the infill activity that took place between 1990 and 2000 had not occurred, over 55 additional square miles of farmland and potential open space would have been converted to urban uses. Metro Vision assumes that infill and redevelopment activity will continue to occur and thereby reduce the need to develop “greenfields” on the outer perimeter of the urban area.

Infill development can also help communities achieve certain goals. For instance, developing new buildings at key locations can help to create a certain “synergy” of activity and sense of place.¹ A public building in particular, such as a library, can create momentum for re-establishing a decaying neighborhood. Redevelopment of an abandoned manufacturing facility may stimulate the development of a new residential community.

Not all empty parcels are suitable for infill development, however. Many parcels are empty for a reason, perhaps because they have poor access, are oddly shaped, or have environmental constraints. On the other hand, some parcels may be vacant simply because the market may have collapsed in that portion of the region at a particular time and never rediscovered.

Redevelopment also has unique problems. Buildings with historic value may be subject to special codes that limit change or increase the cost of rehabilitation. If the buildings are no longer viable, the project must incur the costs of demolition and clean up as well as the cost of new construction. Even if the buildings are viable, the utilities serving the site may be inadequate to meet modern requirements or be beyond their useful life.

¹ “Reinventing Suburbia” in *Urban Land*, July 2002, page 44.

Transportation Related Infill Issues

Vehicle Tripmaking, Air and Water Quality Impacts

Infill and redevelopment can have positive and negative effects on community and regional transportation systems. With careful planning the positive effects will outweigh the negative effects. Further, anticipating future infill or redevelopment project impacts on the transportation system allows a community to begin planning for the mitigation of any negative effects.

Local officials that promote infill development may also follow and participate in the transportation planning process. This participation can help in best planning the infill project in conjunction with a potential transportation project. Likewise, transportation planners and engineers should coordinate with city and regional planners so that any future transportation improvements best serve planned land use changes.

As development patterns evolve, so do the travel patterns of the region's residents, employees, and visitors. One must expect that an infill development site will generate more trips, vehicle miles of travel or "VMT", and congestion than a previously undeveloped site. Further, it should be expected that when an infill development site is compared to development sites on the fringe of a metropolitan area, the impacts would be comparable, depending upon what is measured. There are also indirect transportation impacts on such things as air quality and water quality.

Despite these impacts infill development still provides less transportation impacts than non-infill sites. Results described in studies support the beneficial traffic impacts of infill development. A 1999 study modeled and analyzed the transportation and environmental impacts of locating the same type of development on an infill site as compared to an undeveloped greenfield site on the suburban edge. The development was first overlaid onto the existing street grid and infrastructure in a central city location site. The same level of development and associated infrastructure was then created to be compatible with nearby subdivisions on greenfield sites. Both were modeled to deduce their impact on traffic congestion.

The results of this study indicated that VMT, average household trip distance, and travel times would be less with an infill site as compared to a greenfield site. This study concluded that benefits from infill are a function of the existing conditions in the surrounding area, including existing congestion levels and accessibility from the infill site to other activities².

Air pollutant emissions and conformity impacts are indirect transportation infill issues. Additional VMT, vehicle hours traveled (VHT), vehicle trips, and stop-and-go traffic congestion (which can result when infill development adds vehicles to the existing roads and when fringe development adds vehicles to the existing and new roads) have the potential to create regional air

² Hagler Bailly Services, Inc., Criterion Planners/Engineers, and the Environmental Protection Agency (EPA). The Transportation and Environmental Impacts of Infill Versus Greenfield Development. 1999.

pollution and, specifically, localized carbon monoxide (CO) pollution “hotspots”. Local officials may encourage practices and strategies to alleviate potential air quality issues by implementing coordinating traffic signal timing along corridors, providing good pedestrian, bicycle, and transit connections, and providing transportation demand management programs.

Water quality may also be indirectly impacted by transportation and development activities. Impacts on water result from the amount of impervious surfaces being created and the total amount of VMT in a region. As the water runs off the impervious surfaces into the water supply it carries many pollutants left by transportation and development activities. When land reaches a level of 10% imperviousness, the larger watershed begins to be affected. Currently, the watershed of the urban part of the region is about 20% impervious surface.

Infill development lessens the overall amount of impervious surface and VMT in a region, when compared to greenfield development areas. Local officials may encourage infill development as a strategy to improve water quality and supply. Research over the past 20 years has demonstrated a strong correlation between impervious surfaces – roads, roofs, parking lots – and degradation of water quality. Because of this, redeveloping areas that are already impervious and already have water infrastructure is preferable to developing for the first time a natural area like "greenfields" or forested lands. This is accomplished by encouraging development in areas well beyond 10% imperviousness, while areas with less than 10% imperviousness may be delineated as undevelopable or open space.³

Access and Circulation

Definition and Relation to Infill

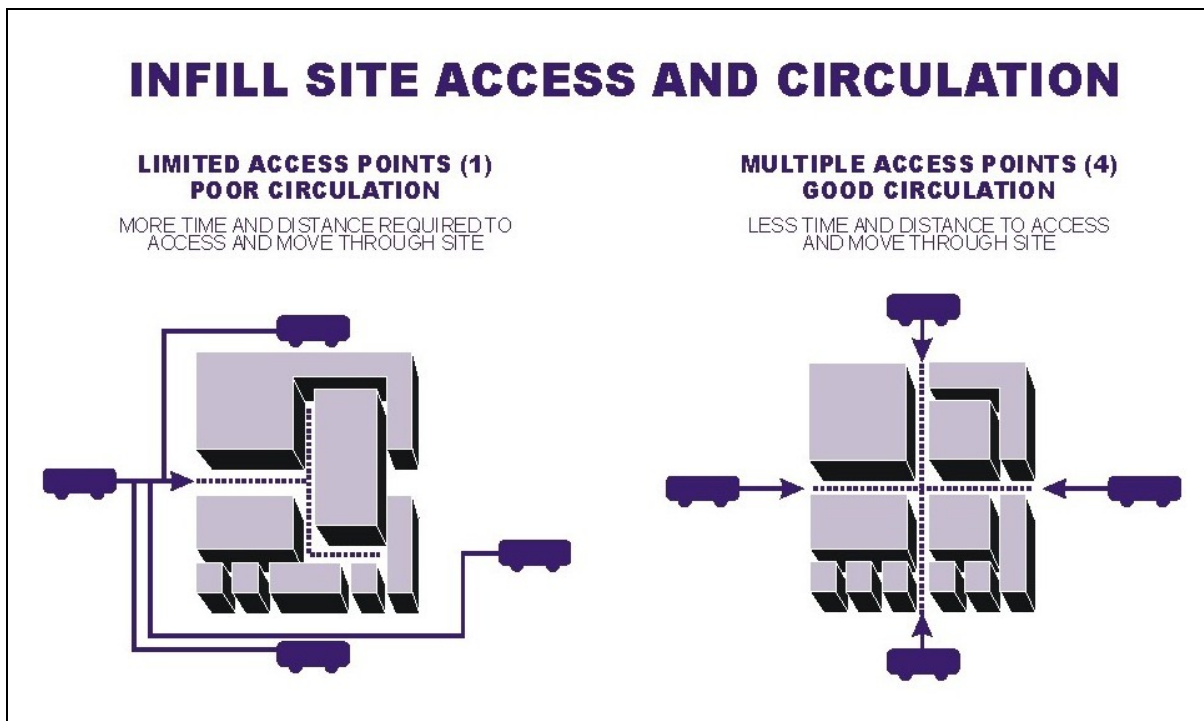
Accessibility may be defined as the ability for travelers to reach desired goods, services, and activities. Within the site, an infill development connection to the transportation network requires provision of proper pedestrian, bicycle, transit, and automobile facilities. Circulation is the ability to move around within the site and is another key consideration. A common circulation issue is a lack of pedestrian mobility caused by limited pedestrian connections. Further, construction in an infill site should not disrupt pedestrian circulation. This can occur when equipment and fencing is sprawled across sidewalks as construction occurs.

An infill development site must also have adequate access to principal roadways. Such access includes having enough connections so travelers may move into and out of the site without getting backed up at limited site entrances and exits. The number of connections needed to

³ Center for Watershed Protection, Redevelopment Roundtable - Center for Watershed Protection Consensus Agreement - Smart Site Practices for Redevelopment and Infill Projects, October 2001, 16 p.

provide adequate access to principal roadways varies depending on the size and layout of the infill development and the current traffic patterns on the principal roadways. However, access points to principle roadways should be well balanced as too many can cause disruption to traffic flow on the principal roadway. Planners and developers should inquire to the extent that access is permitted by the transportation agency with jurisdiction over the principal roadway. Figure 1 illustrates an example of both good and poor vehicle circulation based on the relative number of access points for an infill site.

Figure 1



Having adequate access to infill sites is also important to transit and non-motorized travelers. Good pedestrian access to transit stops located on or near principal roadways on the periphery should be provided. Streets within the infill development should be designed to efficiently accommodate transit vehicles that may serve the site. Further, bicyclists need convenient access to and from principal roadways and nearby bicycle routes and multi-purpose trails. Figures 2 and 3 illustrate both good and access and circulation scenarios related to pedestrians, bicyclists, and transit.

Figure 2

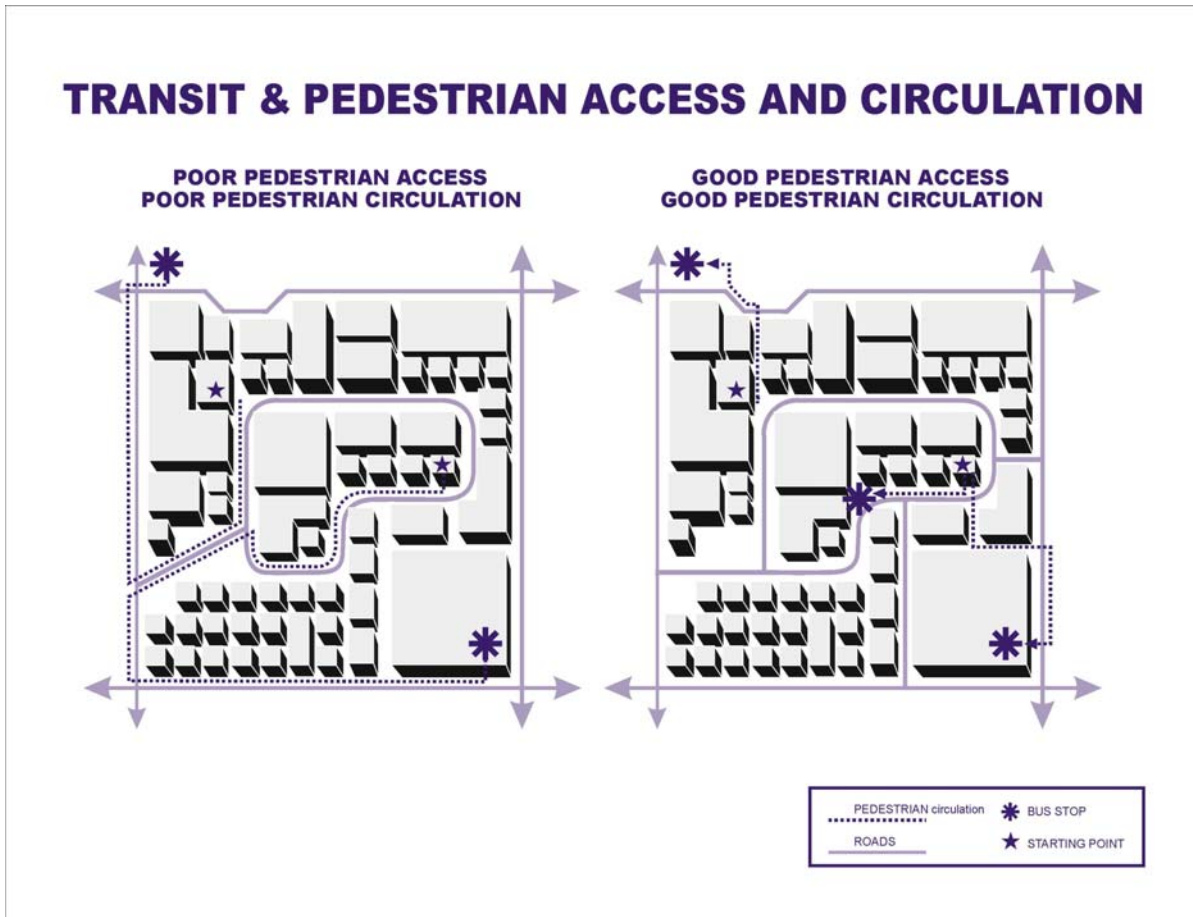
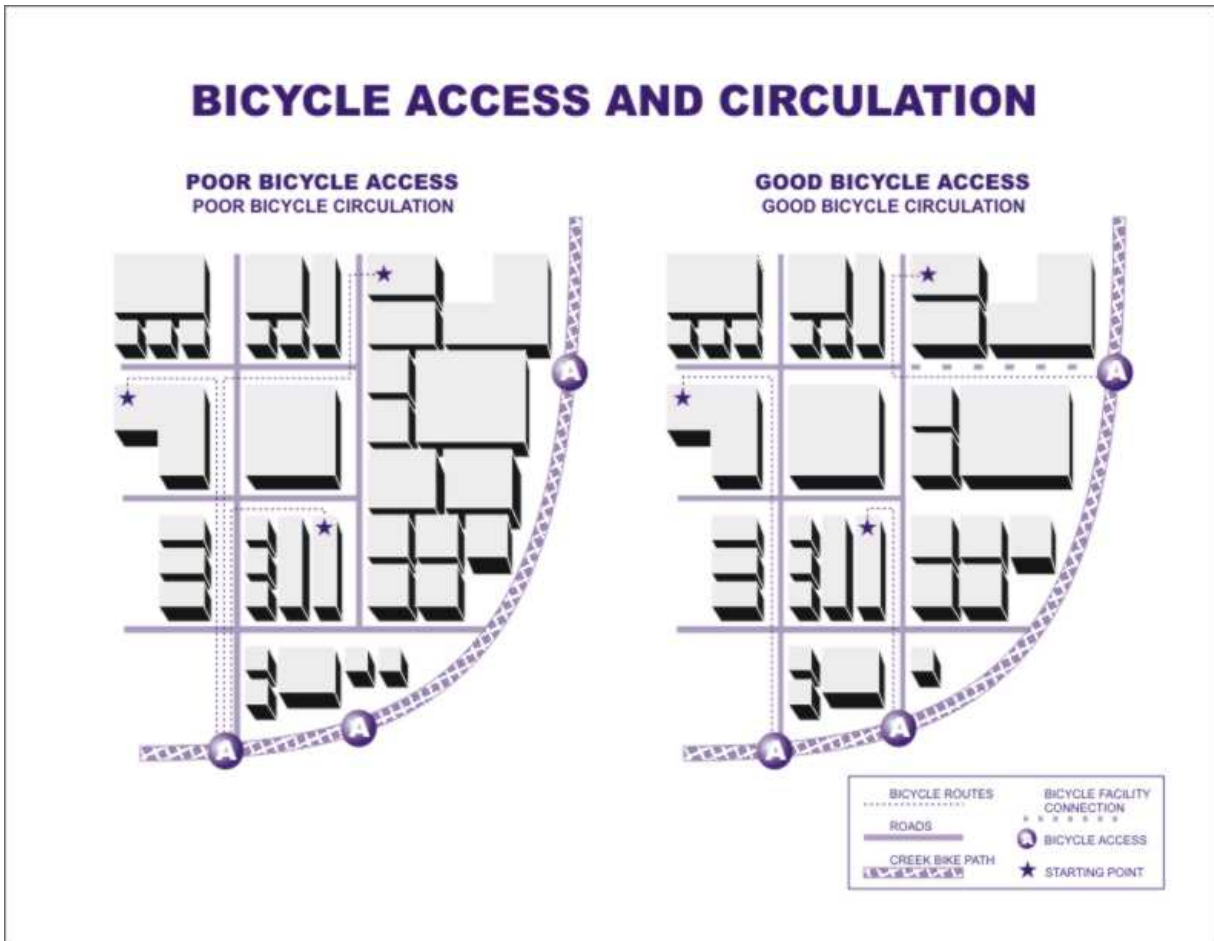


Figure 3



Inadequate access to a principal roadway may limit the accessibility of those who need to travel into and out of a development. For example, if bus routes want to extend their service through a new development, the length and time of the transit trip will be greater if there are not an adequate number of access points to the development. Transit agencies may be then less compelled to change a bus route to serve such an area. Similarly, pedestrians and bicyclists may have to travel throughout the entire development to get out through one access point to a roadway or transit stop, when access via a cut through path or a trail could provide another travel option.

Strategies for Improvement / Best Practices

Planners and developers may improve access and circulation at a site by:

- Providing adequate access points into an infill development for all travelers including pedestrians, bicyclists, transit users, and auto occupants;

- Providing sidewalks and/or bike paths throughout the development that connect key points;
- Providing cut-throughs at the end of cul-de-sacs or at the end of commercial areas to connect to residential areas or principal streets;
- Providing convenient walkways through parking lots for people to get from lots and streets to storefronts; and
- Maintaining a clear sidewalk or designating a walking path for pedestrians to pass by the site throughout the construction period. If this cannot be avoided, constructors may designate a pedestrian walkway that is separate and distinct from automobile traffic.

Other design elements within the infill site can encourage pedestrian and bicycle travel. Examples include:

- Wide sidewalks and pathways connecting different parts of a development;
- Lighting on sidewalks and pathways;
- Planting strips between the streets and sidewalks;
- Comfortable walkways through parking lots;
- Traffic calmed crosswalks; and
- Buildings that front directly onto the street.

Parking Supply and Standards

Considerations / Issues

Provision of automobile parking in infill and redevelopment sites is an area where sensitive placement and care must be taken. Conventional parking standards are often inflexible and applied with little consideration to the geographic and demographic factors at each site. Parking standards may often be excessive for urban areas, where there is limited space, good transit service, and a dense concentration of people that can walk or bicycle to sites. Parking requirements can typically be reduced 10- 30% at some sites is based on local site design and characteristics.⁴

Developers may not have enough surface space to meet the off-street parking requirements because the site may be too small for simple parking solutions. One possible way the developer

⁴ Atlanta Regional Commission, Parking Management, September 2003.

may be able to meet parking requirements is to acquire financing to build a multi-storied parking structure. Structures may be underground, above ground or a combination of both. Because these costs may be prohibitive, developers may often simply opt to build on a less complicated and expensive low-density suburban site.

Strategies for Improvement / Best Practices

As a local strategy to promote infill development, developers may be allowed to adhere to lower parking provision standards. One way to reduce the parking supply is through in-lieu parking fees. Here, a developer pays the local government a fee rather than constructing parking, and the local government then leverages that fee to provide centralized off-site parking. The local government can allow shared parking areas in close proximity to various activities. This is beneficial when peak demands of the participating businesses are at different times of the day or week. Development agreements may also be arranged whereby a city or business can lease out extra daytime spaces to employees. Setting maximum parking limits that restrict the total number of spaces a developer can build rather than requiring a minimum number of spaces are also a strategy to reduce parking supply. Maximum parking limits are usually based on square footage of development.

There are also methods to reduce the demand for parking spaces. Some policies and programs that can reduce parking demand include transit improvements and subsidies, pedestrian and bicycle improvements, and transportation demand management activities.

A comprehensive list of methods to reduce supply and demand of parking is also available from the Environmental Protection Agency.⁵

Local jurisdictions can require various design elements to promote unique parking situations in an infill or redevelopment site. Some land parcel situations include uses along an older transportation corridor. The size and shape of such parcels reduces their utility. If local jurisdictions can encourage a combination of such parcels, structures and adequate parking can be developed. Further, by adding special walkways in such an environment dedicated to moving pedestrians between uses, a jurisdiction could reduce the need for extensive parking. If traditional parking access is challenging, a jurisdiction may encourage parking design that includes rear or under building access.

There are a number of examples in the Denver metro area of best practices for parking structures. There are parking structures that are wrapped with residential dwellings on Broadway in Englewood in order to give the feeling that a parking structure is just another part of the development. Another good example is the parking structure at Black Creek Capital in Aurora, which has parking underneath units and a private courtyard environment.

⁵ Environmental Protection Agency: Urban and Economic Development Division, Parking Alternatives: Making Way for Urban Infill and Brownfield Development, EPA 231-K-99-001, November 1999.

Regulatory Considerations

Local

There are local regulations that must be taken into consideration when seeking to develop or change the transportation system in and around an infill development. These regulations vary by municipality, though most include improvements that an entity must consider when seeking to make public improvements to the local roadway system. These regulations can be located in transportation, construction, or engineering standards, regulations, and/or policies documents. The documents will likely have regulations about such topics as the permitting process, access, design standards, street classification, lighting, parking, traffic signals, driveways, alleys, drainage, bicycle facilities, and typical street and curb sections.

The table below lists example documents from local area governments. These documents should be consulted before improvements to the transportation system occur in these jurisdictions.

Example Local Jurisdiction Regulation Documents

Municipality	Document
Denver	Department of Public Works, City and County of Denver. <i>Standards and Details for City Engineering</i> . April 2000.
Arapahoe County	Arapahoe County, Roadway Design and Construction Guidelines. 1986 with periodic updates.
Lakewood	City of Lakewood, <i>Transportation Engineering Design Standards</i> . 1985 and updated in 2003.

State

There may be state regulations that must be taken into consideration when seeking access to state highways in and around an infill development. The key state regulations imposed by the Colorado Department of Transportation (CDOT) address such issues as access requirements, design requirements, and right-of-way requirements. A permit application must be completed by a party that wishes to construct, relocate, close, or modify access to a state highway.

CDOT also imposes design standards and right of way standards that local governments and developers must consider when requesting a change of access to a state highway. CDOT's flexibility for granting access largely depends on the classification of the state highway in the proposal.

Detailed information about access regulations and design standards is available in the State of Colorado, *State Highway Access Code*, Volume 2, Code of Colorado Regulations 601-1, March 2002 or at www.dot.state.co.us/businessCenter/permits/access/index.htm/.

Federal

There are also federal regulations that must be taken into consideration when seeking to develop or change the transportation system in and around infill development. One such regulation is the Americans with Disabilities Act (ADA) of 1990. ADA states that all buildings, restaurants, offices, sidewalks, restrooms, and buses that are open to the public must be accessible to people with disabilities.

This includes special designs for traffic lights, curb cuts, median strips, ramps, sidewalks, pedestrian crosswalks, interstate and highway restroom facilities, parking spaces, and parking lots.

Specifically, local government must consider ADA when designing transportation facilities for all developments, including infill. A list of the complete requirements can be found at www.jan.wvu.edu/links/adalinks.htm.

If federal funding or a federal action is involved in any type of project, then the sponsors must adhere to the National Environmental Policy Act of 1969 (NEPA). This involves completing one of three following levels of planning analyses based on the potential of total environmental impact: categorical exclusion, environmental assessment or environmental impact statement. More information on NEPA requirements can be found at the Federal Highway Administration's website: www.fhwa.dot.gov/environment/00001.htm.

Funding Infill-Related Transportation Improvements

General Issues

Transportation infrastructure plays a key role in shaping and supporting infill and redevelopment projects. There are a number of ways that local governments, private entities, and Metropolitan Planning Organizations (MPOs) can finance transportation projects related to infill. While not specifically targeted for infill and redevelopment, there are a number of local, private, state, and federal sources that may be utilized for the transportation portion of infill projects, thus helping to make these projects more successful. Some funding sources and grants require a local match in order to be eligible to receive funds. This is often the case with federal funding sources, where the local sponsors are required to match at least 20% of the total cost of the project. Local governments should be prepared to provide some financial assistance or be willing to form partnerships to increase the ability of the infill project to compete for available funds.

Local and Private Sources

Tax Increment Financing

Tax increment financing (TIF) allows a city or county to create a TIF district to “capture” the increase in net tax capacity that results from new development in the district, in essence taking that portion of tax revenue off of the tax base and paying it directly to the TIF district. The TIF authority uses the increased tax revenue to pay for certain approved development costs, such as acquiring land or buildings, demolishing substandard buildings, installing utilities or road improvements, or building low-or moderate-income housing.

Traffic Impact Fees

Developers should be asked to provide a traffic impact study prior to approval of the infill site development plan. The developer will be responsible for mitigating those negative impacts placed on the transportation system by the project. Jurisdictions may require that private developers pay for traffic mitigation improvements.

Federal and Metropolitan Planning Organization (MPO) Sources

Several federal funding categories are established by the federal surface transportation act known as SAFETEA-LU— the Safe Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, signed into law on Aug. 10, 2005. These funds are administered by the Colorado Department of Transportation (CDOT), the Regional Transportation District (RTD), and the Denver Regional Council of Governments through the regional MPO planning process. The 2030 Metro Vision Regional Transportation Plan (RTP) presents the vision for a multimodal transportation system that is needed to respond to future growth, as well as to influence how the growth occurs. It specifies strategies, policies, and major capital improvements that advance the objectives of the Metro Vision 2030 Plan. The fiscally constrained 2030 Metro Vision RTP defines the specific transportation elements and services that can be provided to year 2030 based on reasonably expected revenues. The 2030 Metro Vision RTP is available on the DRCOG website at www.drcog.org.

The Transportation Improvement Program (TIP)

The Transportation Improvement Program (TIP) identifies specific federally funded transportation improvements, management actions and studies to be completed by CDOT, RTD, local governments, and other project sponsors over a six-year period to implement the 2030

Metro Vision RTP. As required by federal law, the TIP must be fiscally constrained to funds expected to be available and all projects selected to receive federal surface transportation funds must be identified in the TIP.

The TIP is prepared and adopted by the Denver Regional Council of Governments (DRCOG), the region's Metropolitan Planning Organization (MPO), in cooperation with CDOT and RTD. At present, three separate processes exist for selecting transportation projects to receive federal funds within the TIP area. Each of the three primary regional transportation planning partners (DRCOG, CDOT and RTD) selects projects for the federal funds over which it has authority

DRCOG (MPO)

DRCOG selects projects to receive Federal Highway Administration (FHWA) funds (and matching local funding) from the following three programs:

- Surface Transportation Program (STP)-Metro;
- STP-Enhancement; and
- Congestion Management/Air Quality (CMAQ)

CDOT

CDOT selects TIP projects using a variety of federal, state, and local revenues. These include primarily roadway and bridge construction, and operation and maintenance activities, and are listed in the TIP under the following categories:

- 7th Pot (statewide strategic projects);
- Regional Priorities Program (strategic regional CDOT priorities);
- Congestion Relief Program (regional CDOT priorities to improve congestion on the state highway system);
- Surface Treatment (repaving projects);
- Bridge (On-system, Off-system, Discretionary);
- Safety Projects;
- Intelligent Transportation Systems;
- FTA Section 5310 (transit capital for elderly & disabled services);
- Transportation, Community and System Preservation (TCSP); and
- Other projects using federal discretionary funds.

RTD

RTD selects projects using a variety of federal funds and RTD revenues to fund regional transit system construction and operations and maintenance. Its projects follow the Regional Transit Development Program (TDP) and are listed in the TIP under the following categories:

- FTA Section 5307 (transit capital, operations, capital maintenance, studies); and
- FTA Section 5309 (fixed guideway and bus transit capital and studies).

The three agency processes are currently integrated by using a common strategic corridor planning focus, participation in each other's meetings and public forums leading to project selection, and through interagency review and comment on each other's draft lists of recommended projects and those not recommended, prior to committee review.

Other Federally Administered Funds

The Transportation and Community System Preservation Pilot Program

The Transportation and Community System Preservation Pilot Program (TCSP) is a discretionary grants program that provides funds for planning and implementation grants, technical assistance and research to investigate and address the relationship between transportation, community, and system preservation; and private sector-based initiatives⁶. Congress recognized the need for a comprehensive program to assist in planning, developing, and implementing strategies to integrate transportation, community, and system preservation plans and practices. The TCSP Program. Historically little funding is actually available due to Congressional earmarks but projects in the City and County of Denver have successfully received funding.

The TCSP Program is authorized funding for fiscal years 2005 through 2009 under Section 1117 of SAFETEA-LU. The Federal share payable on account of any project of activity shall be 80 percent or subject to the sliding scale.

Funds are available to States, metropolitan planning organizations, local governments, and tribal governments. The law requires equitable distribution of funds to a diversity of populations and geographic locations.

SAFETEA-LU authorized TCSP funding in the amount of \$25 million in fiscal year (FY) 2005 and \$61.25 million per year for FYs 2006 through 2009. Actual TCSP Program funding levels can vary based on Congress' annual appropriations. Total funding for the TCSP Program is \$270 million over five years.

These discretionary competitive grants are selected by an interagency team. Program grants can also be designated by Congress. The TCSP Program is administered by the FHWA. Individual projects can be administered by either FHWA Divisions, State Departments of Transportation, or in special cases other Federal DOT agencies. TCSP Program grantees must meet federal-aid requirements when implementing their grants.

⁶ Transportation and Community System Preservation Pilot Program. FHWA Website. <http://www.fhwa.dot.gov/tcsp/>.

Other State Sources

Brownfields Funding

Brownfields are abandoned, idled, or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination. Funds available through the Colorado Brownfields Cleanup Revolving Loan Fund provide financing for environmental cleanup activities that can set the stage for transportation improvements. Cleanup loans have flexible terms, offer below market interest rates, low transaction costs and will subordinate to other lenders. The Cleanup Loan Fund is capitalized by a grant from the Environmental Protection Agency's Brownfields Program to the Colorado Dept. of Public Health & Environment and is managed by the Colorado Housing and Finance Authority.⁷

The limited federal transportation funds not earmarked for other projects can also be used for the revitalization of brownfields. The funds can pay for remediation of environmental contamination that lies in the path of a transportation project or on the site of former transportation projects. The funds can also stimulate the reuse of brownfields and enhance those properties for private or public users by improving access to those sites. For example, state Departments of Transportation (DOT) and MPOs can fund ramps, roads, bikeways, and walkways that connect a brownfield to an existing road. This type of funding however is extremely limited as a major portion of available funds is earmarked for previous projects. This will require a longer-term project view if a community is interested in acquiring funds. Transit agencies may also extend their services near residential and employment centers located on former brownfields by building bus or rail stops, and erecting signs and streetlights⁸.

Great Outdoors Colorado

The Great Outdoors Colorado (GOCO) Trust Fund was established in 1992 to dedicate a portion of state lottery proceeds to projects that preserve, protect, and enhance wildlife, parks, rivers, trails, and open spaces in Colorado. GOCO has seven grant programs. Two of these grant programs that could potentially fund transportation oriented projects in the metro area are the legacy initiative and the trail grant program. The legacy initiative funds are intended for projects that are of regional or statewide significance. Qualified outdoor recreation, wildlife, open space, and local government projects may be small in size but large in importance. They include many activities and may take several years to complete. The special trail grant program funds are intended to build, enhance, maintain, and/or expand trails; information can be found at <http://www.goco.org/>.

⁷ Colorado Brownfields Programs, Colorado Department of Public Health & Environment
<http://www.cdph.state.co.us/hm/rpbrownfields.asp>

⁸ US Environmental Protection Agency, Redeveloping Brownfields with Federal Transportation Funds, February 2001.

In the Denver region, GOCO provided a Legacy grant to the South Platte River project. The funding went to such things as acquiring open space along the river corridor, improving and expanding wildlife habitat, providing trail improvements, and building parks along the river (including Commons Park in Downtown Denver).

Conclusion

The techniques and ideas presented here improve land use accessibility, pedestrian circulation, parking standards, transportation construction permitting, and infrastructure funding opportunities when planning infill and redevelopment sites. Using these strategies helps communities and developers avoid the transportation issues that the unique and innovative design characteristics of infill and redevelopment projects may incur.

List of Acronyms

ADA	American with Disabilities Act
CDOT	Colorado Department of Transportation
CMAQ	Congestion Mitigation / Air Quality
CO	Carbon monoxide
DOT	Department of Transportation
DRCOG	Denver Regional Council of Governments
EPA	Environmental Protection Agency
GOCO	Great Outdoors Colorado
HOV	High-occupancy vehicle
MPO	Metropolitan Planning Organization
NEPA	National Environmental Policy Act of 1969
RTD	Regional Transportation District
SAFETEA-LU	Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users
STP	Surface Transportation Program
TIF	Tax-increment financing
TDP	Regional Transit Development Program
TSCP	Transportation and Community System Preservation Pilot Program
VHT	Vehicle-hours traveled
VMT	Vehicle-miles traveled

