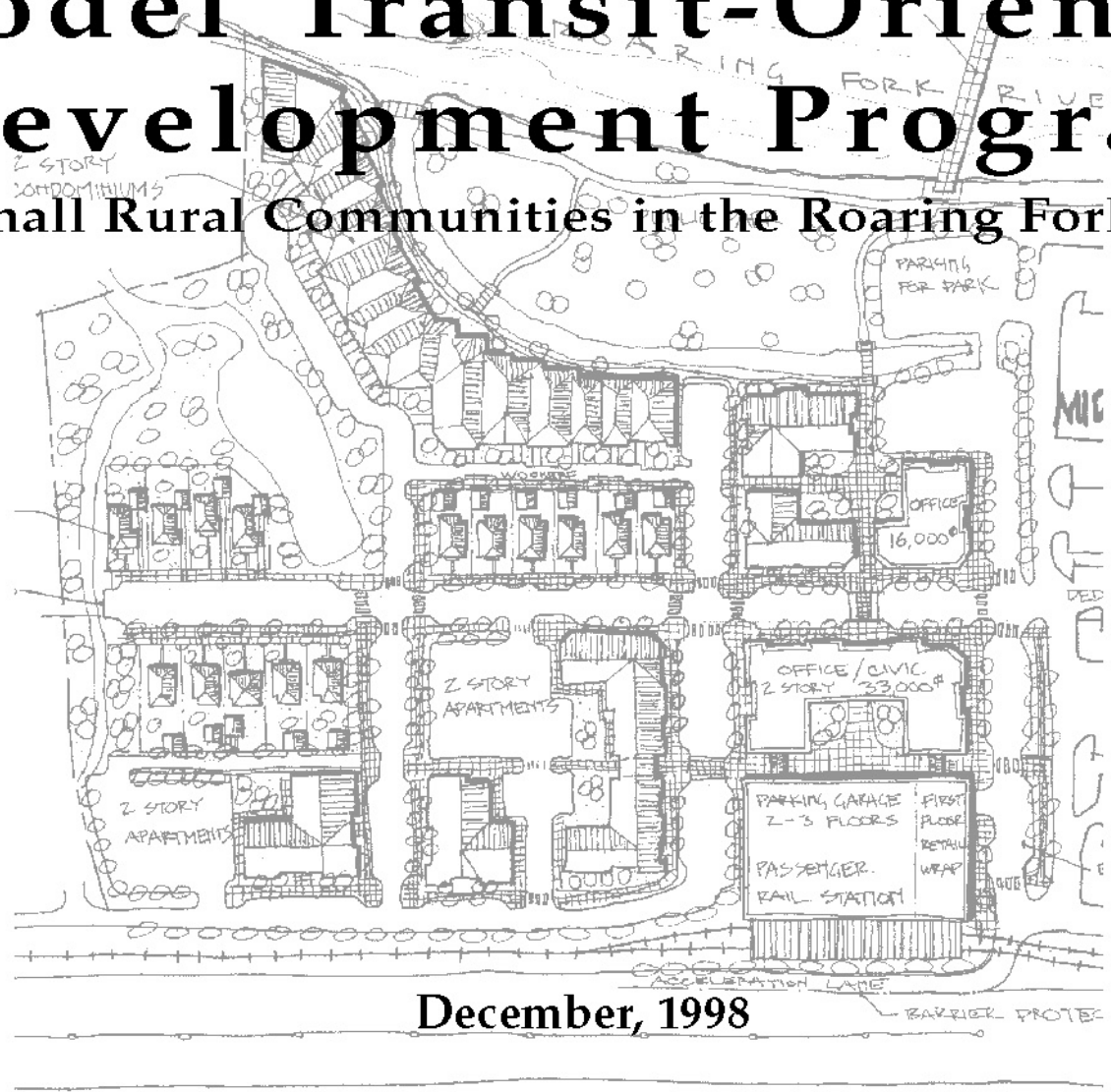


# Model Transit-Oriented Development Program

for Small Rural Communities in the Roaring Fork Valley



December, 1998

**THE SMART GROWTH SCENARIO PLANNING INITIATIVE** is a multi-jurisdictional effort to with two interrelated goals: 1) to provide policy makers and citizens throughout the Aspen to Parachute Region with accurate information regarding the cumulative effect of zoning, land use, and transportation decisions to date and 2) to develop educational tools and technical information to implement transit supportive land uses. *The Model Transit Oriented Development Program for Small Rural Communities in the Roaring Fork Valley* is one such educational tool. It was made possible by the following organizations:

## **PROJECT FUNDING**

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HEALTHY MOUNTAIN COMMUNITIES is a 501(c)3 not-for-profit, public benefit corporation working on quality of life issues in the Roaring Fork and Colorado River Valleys. HMC provides non-partisan coordination, facilitation, and analytical services to citizens, nonprofit organizations, local governments, and businesses seeking to better understand and address specific problems such as the lack of affordable housing, traffic congestion, growth and economic development. HMC organizes ongoing forums for regional dialogue, collaboration and networking and provides a package of data, research and decision support tools to help community leaders better understand issues and implement solutions at the local and regional level.

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## Introduction

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This model transit-oriented development (TOD) program was prepared for the Town of Basalt as part of a regional “smart growth” initiative involving the local governments of the Roaring Fork Valley. The project was coordinated by staff of the Town of Basalt with assistance from the regional Healthy Mountain Communities organization and the Roaring Fork Transit Agency (RFTA).

The program is intended to serve as a set of guidelines for use by rural communities in the Roaring Fork Valley and in other western communities where rail transit is being implemented. This report is organized in nine sections:

- background - the Roaring Fork Valley (Section A);
- defining transit-oriented design (Section B);
- structure planning (Section C);
- urban design (Section D);
- land use (Section E);
- parking supply and management (Section F);
- integration of transportation modes (Section G);
- sample policies and codes (Section H); and,
- design principles checklist (Section I).

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## A. Background - The Roaring Fork Valley

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In 1950, the Roaring Fork Valley was a quiet, out-of-the-way rural valley. Aspen was a ragged and worn former mining town with empty storefronts and a few determined residents living in run-down clapboard houses.

Most of the mid-valley was ranchland, with a small downtown in Basalt, a few buildings Carbondale and a long, bad “highway” connecting them with the rest of the world.

Glenwood Springs was the closest thing to a real city in those days, with its location on old US 6 along the Colorado River, its rail passenger service and its hot springs resort.

Today, almost 50 years later, the Roaring Fork Valley is home to 40,000 people. The hot springs resort is still there in Glenwood, but now there are also five ski resorts in the Valley. These, along with the rivers, the forests, and the scenery, bring tens of thousands of visitors and tourists to the area each year.

The tired old dusty mining town at the upper end of the valley is now an internationally-popular resort town and a highly-desirable place to live . . . for those who can afford the cost of housing there. Pitkin County, home to only 15,000 or so residents, imports 15,000 to 25,000 workers in summer and winter months from the towns and cities “downvalley.”

And “downvalley,” which used to mean Basalt or Carbondale and maybe Glenwood Springs, now includes places like New Castle, Silt, Rifle and Parachute that are “down” the Colorado River along west I-70 in Garfield County.



# Model Transit-Oriented Development Program

For Small Rural Communities in the Roaring Fork Valley

p. 2

As the valley has changed from a rural ranching and mining area to a popular resort destination and a desirable place for “mountain living,” it has begun to experience urban-style problems . . . especially transportation problems. Traffic on SR 82 (which is now a paved, four-lane major highway most of its length) exceeds 30,000 vehicles per day at many points in the Valley on many days in the summer.

Traffic congestion on Grand Avenue in Glenwood Springs and on the west side of Aspen has reached levels that threaten mobility and quality of life, and this has become one of the region’s hottest political issues.

Because of the disparity between housing costs (extremely high in the upper Roaring Fork Valley, high in the mid-Valley, moderate in the lower Valley, and relatively low along west I-70) and jobs (numerous in the upper Roaring Fork, not so numerous along west I-70), only 39% of the region’s workers live and work in the same town. The average commuter in the region travels 18 miles one way to work each day. However, the average Parachute resident travels 37 miles a day each way to get to work and back home.

As the region has grown and become more complex, the old pattern of living downvalley and commuting up to Aspen or Snowmass Village to work is changing. Glenwood Springs has become a major employment center in its own right, with about 10,000 jobs (over twice its resident labor force). Mid-Valley places like Basalt are beginning to attract professional offices and the occasional national headquarters.

Over time, we can expect the job base in the west I-70 communities (currently job-poor) to grow. The result of these trends will be a more complex pattern of commuting, with people moving in all directions between points in the region.

The region is still largely auto-dependent, especially for commuting. Our recent Travel Patterns study found that families own one car for

each job in the household. However, the RFTA transit system has made significant inroads in the upper Valley, where transit commute mode shares are higher than most urban areas . . . reaching 30% for some live/work combinations in the upper Valley. RFTA carried 3.7 million riders in 1997. Over the past decade, the “Valley Services” routes have grown significantly, and now represent nearly half of annual ridership.

Now the Roaring Fork Valley is entering an era when the communities, working together, will undertake development of rail transit systems as a strategy to protect quality of life, a healthy environment, and the unique character of the Valley.

A light rail transit (LRT) system has been approved as part of the environmental impact statement for the “entrance to Aspen” portion of SH 82 (from just west of Aspen into downtown). A former freight rail corridor through the valley has been purchased and preserved through a cooperative effort of the Valley’s towns, cities and counties and the Colorado Department of Transportation (CDOT). As this report was prepared, a corridor investment study (CIS) is underway involving CDOT, the Roaring Fork Rail Holding Authority and a number of citizen committees from throughout the Valley.

The CIS is examining the SH 82 corridor from Glenwood Springs south to the terminus of the entrance to Aspen LRT to determine what future transportation system would best serve the Valley as it grows and as the state highway becomes more congested.

The Town of Basalt is located along SH 82 and the Roaring Fork River north of Aspen. Any rail transit system implemented in the Valley will come through or along the town. This model program describes the principles, policies and strategies that should be utilized to ensure that new development in and around Basalt is designed in a transit-oriented manner, with an eye to the impending development of a Valley rail system for the Roaring Fork Valley.



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## B. Defining Transit-Oriented Design

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Transit-oriented design is a land development pattern that provides a high level of mobility and accessibility by supporting travel by walking, bicycling and public transit. It is contrasted with “auto-oriented” design which discourages or prevents travel by walking, bicycling and public transit. Auto-oriented design has characterized most development in the Roaring Fork Valley over the past 50 years.

The term “transit-oriented” applies to many elements of the built environment, including site layout, transportation infrastructure, buildings, urban design, and land use. In general, transit-oriented places are dense, mixed use areas where walking is easy and pleasant and good transit service is available.

Land areas that have been developed in a transit-oriented manner can be effectively and efficiently served by public transit. Ridership will be high and the cost of providing transit service will be low on a per-trip basis. Land areas that have been developed in an auto-oriented manner are difficult and expensive to serve with public transit.

The idea behind transit-oriented design is not just that this pattern of development is necessary to support transit, but that it offers other important benefits as well, including:

- enhanced and sustainable economic vitality;
- a strong sense of community reinforced by active public spaces;
- lower cost of providing public services; and,
- improved mobility for residents and visitors.

If transit is to compete with driving, it must offer competitive service, safe and convenient access, and complete information on systems and service. The primary reasons people offer for not using transit is that it is inconvenient and it takes too long. In other words it does not meet traveler needs. For transit to succeed it must be accessible to users and must be able to serve the community efficiently.

The most important characteristics of transit-oriented design in a community like Basalt are listed below. These form the basis for the concepts introduced in the following sections.

- Pedestrian-friendly environment. To succeed, transit-oriented places must be walkable. Transit riders are, first and foremost, pedestrians. Without pedestrians, transit vehicles are empty.
- Dense land development. The problem of density is a simple one: a very low density area cannot produce enough people to warrant the cost of a high-capacity transit system. Low density areas are auto-dependent because walk distances are too long to be practical, so there are few pedestrians.
- Mixed use neighborhoods. Where residential, retail and employment land uses are located close to each other, people can and do walk (assuming a pedestrian-friendly environment). They will meet and come to know their neighbors. Such places begin to feel like neighborhoods.
- Safe, pleasant surroundings. One of the reasons people drive is to ensure their own safety. The fear of being “alone in a dark alley” is a deeply-engrained part of our cultural consciousness.
- Access to a high-capacity transit system. By definition, either a rail line, a fixed guideway system, or a very high capacity bus system must serve the transit-oriented area.



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## C. Structure Planning

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Structure planning addresses characteristics of site layout, land use and transportation infrastructure. These characteristics must work together to produce a transit-oriented place. Structure planning is the responsibility of local government. While developers are normally responsible for private site layout, the layout of a development project should conform closely to the structure plan for the community.

An essential concept in structure planning for transit-oriented places is the hierarchy of movement corridors. Traditional highway planning has utilized the notion of a roads and streets hierarchy (arterial - collector - local) to guide design and maintenance. However, transit-oriented design requires taking this idea to a somewhat higher level of sophistication and applying it both to motor vehicle circulation and to pedestrian circulation. This hierarchy categorizes corridors as “global, local and private.”

The concept of a global-local-private corridor hierarchy is derived from space analytics which analyzes relationships between the functions of various types of pathways or passageways (corridors) and the physical design of associated spaces. The size, design, and orientation of movement facilities should be guided by what type of corridor they serve. The determination of corridor type is based both on the types of movement occurring there and on the adjacent land uses.

### GLOBAL CORRIDORS

Global corridors carry high volumes of external and internal traffic including relatively long trips. They are quite public. They require a high degree of continuity and connectivity with other global facilities. They should be designed for efficient mobility. They

include freeways, arterials and major collector streets and the sidewalks associated with them. They also include large parking lots and other places that connect destinations with external traffic. Global pedestrian facilities are not private places. They are natural locations for people-watching and are appropriate for access to large-scale retail and to large office buildings. In some cases, a global corridor might not have a pedestrian component (e.g., freeways).

A global pedestrian corridor without an associated traffic element would be fairly rare -- examples might include major sidewalks in an auto-free downtown, major sidewalks on college campuses or at sporting venues, or the principal walkway at a ski area base. All sidewalks providing intermodal connections are global by definition.

### LOCAL CORRIDORS

Local corridors carry more internal than external traffic. They are public places but are perceived as being "within" an area. They must be connected to global facilities but should also provide good circulation and access to the land uses they serve within the area. Local streets should be low speed and narrow. Sidewalks should be wide enough to be allow two people to pass two people walking the other direction, but not too wide. Adjacent land uses include retail, restaurants, bars, multi-family residential and small office buildings.

### PRIVATE CORRIDORS

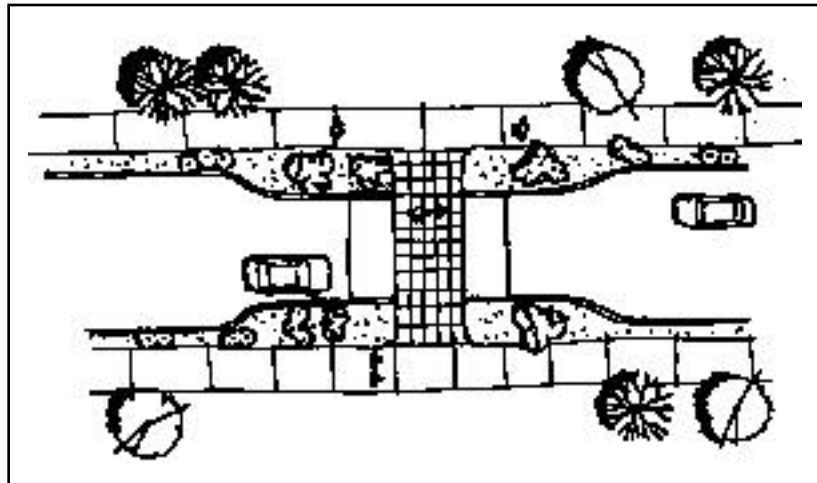
Private corridors provide access to property. They are open to public use but are perceived as being internal and private (in the sense of how people relate to each other, not property ownership). Adjacent land uses may include intimate restaurants, small retail buildings and residential property. Private streets should be low speed and of intimate scale. Pedestrian components may be separate or may share the same space as motor vehicles (ala woonerf or cul-de-sac). Many private corridors do not have a motor vehicle component.



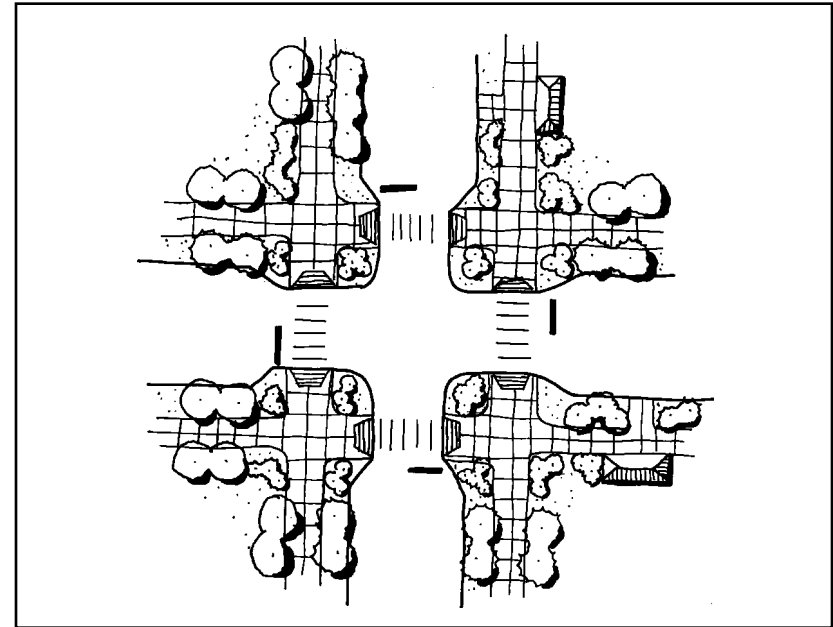
Essential elements of a good structure plan for a transit-oriented place include: pedestrian environment; street network; transit system; and, public spaces. These are described below.

## PEDESTRIAN ENVIRONMENT

Pedestrians are people who are walking, pushing a baby carriage, carrying a bag of groceries, strolling with children or riding in a wheelchair . . . in a setting where other people are doing the same things. A pedestrian-friendly environment is immediately recognizable: there are lots of people out and about on the sidewalks - walking, sitting, talking to each other and watching passersby.



Mid-block, raised pedestrian crossings improve pedestrian circulation and slow traffic on streets in Local and Private Corridors.



Street crossings at intersections are critical barriers to walking. Curb extensions shorten crossing length, slow traffic and help formalize the crosswalk for both pedestrians and motorists.

Pedestrians are potential transit patrons, and transit riders are potential pedestrians. Pedestrian systems do poorly without supporting transit service and transit systems cannot thrive outside pedestrian environments. One of the primary functions of a transit system is to extend the feasible range of pedestrian trips. One of the primary functions of a pedestrian system is to provide access to transit.

Pedestrian environments must be more than just walkable -- that is a minimum characteristic. They must also be safe, pleasant, interesting and active.



Key design principles for providing a pedestrian environment are contained in Section I. These principles are intended to address a short list of critically important pedestrian issues:

- street crossings and other conflict points;
- facility design;
- visibility and desire lines;
- grid continuity and grain; and,
- safety.

## STREET NETWORK

Transit-oriented places also require good street networks for internal traffic circulation and for external access. Most modern subdivisions and commercial areas are built with poor provision for traffic circulation. This causes unnecessary congestion and creates situations where auto/pedestrian conflicts are difficult to resolve.

Residential subdivision street systems -- “loops and lollipops” and cul-de-sacs -- tend to be designed without Local Corridors. Internal streets are designed to function only as Private Corridors, with all traffic shunted onto the nearest arterial highway. Such a system results in congested arterials, poor internal circulation and no connectivity to nearby schools, commercial areas and adjacent residential neighborhoods. With this type of network, arterials (Global Corridors) carry too much traffic to be usable by pedestrians while Local (actually Private) streets are built without sidewalks. Buses cannot efficiently circulate through the area because the streets are not connected to adjacent areas and because the street pattern is circuitous. Such places are definitely not transit-oriented.

Large commercial developments tend to be designed without a clear distinction between streets and driveways through parking lots. The lack of an internal street grid makes it impractical for buses to leave the arterial to serve the development directly. Without a street grid, the pedestrian network is almost non-existent and people will drive rather than walk -- even for very short trips.

Small commercial projects tend to be developed as islands that take access directly from an arterial highway and are not connected to adjacent sites. Once a string of such projects has been built along a highway, there is no network of Local Corridors; there are only parking lots and the Global Corridor (which is congested by turning movements and short-trip traffic). Again, the pedestrian network is non-existent and people will drive rather than walk.

Strategies for improved local street layout and design include (these form the basis for many of the design principles in Section I):

- ensuring direct vehicular connectivity between subdivisions, commercial developments and adjacent land uses;
- ensuring direct pedestrian and bicycle connectivity and continuity within PUDs and with adjacent land uses; and,
- providing continuous routes for internal vehicular flow, including transit buses.

Successfully implementing these strategies requires additional attention to three related issues:

- discouraging external cut-through traffic;
- controlling vehicle speeds; and,
- minimizing street and right-of-way widths.



## TRANSIT SYSTEM

Rail service in the Roaring Fork may eventually take over the trunk function that RFTA buses have been providing (the “Valley Service” routes). However, bus service within the Town of Basalt (e.g., an in-town circulator) may also be needed as well as collector/distributor bus routes to bring people to the rail system from areas outside walking range. These buses must be able to get to the station and to circulate through the community efficiently. Thus, a key part of planning for rail transit in the Roaring Fork is planning for bus transit.

Another key aspect of a transit-oriented place is a well-placed and well-designed transit center. Transit centers in TODs are multimodal stations where buses, rail transit vehicles, pedestrians, bicyclists and motor vehicles come together. Planning for this exchange of passengers requires that some of all of the following elements be incorporated into the transit center:

- cross-platform transfer between rail vehicles and buses;
- bus circulation through the development to the transit center;
- an area for automobile passenger drop-off (aka “kiss ‘n ride”);
- parking for park ‘n ride access; and,
- commuter-oriented retail services (dry cleaner, bank teller, etc.).

These elements show up in the discussion of integrating the modes in Section G and in the design principles checklist in Section I. Planning for these elements is the responsibility of the local government (Town of Basalt) with assistance from the local transit provider (in this case RFTA). Developers are not able to address these elements within the context of site planning without guidance from the public entities.

## PUBLIC SPACE

The provision of adequate public space is another important feature of transit-oriented design. Pedestrian-friendly places are inherently social and should be planned as such.



Streets and sidewalks are the most prevalent and the most important public spaces in our communities. Providing adequate pedestrian space in mixed use areas on Global and Local Corridors serves much the same function as the living room in a residence.



Some of the types of public spaces that should be designed into TODs in Basalt are:

- Sidewalks and walkways. It is obvious that all development should include provision for walking. Less obvious is the fact that pedestrian corridors should be the first thing drawn on the plan. If sidewalks are added once land use decisions are made and the street grid (if any) is laid out, the result will be dysfunctional.  
  
Pedestrian facilities should not be an “amenity” or add-on feature to a completed plan. Desire lines will be interrupted or blocked; street crossings will be shoe-horned into awkward locations; there will be inadequate width for commercial sidewalks, and so forth.
- Open space. Some amount of green space that is usable (other than for drainage) should be designed into TODs in Basalt. This helps balance the higher density and improves the overall sociability (and hence the pedestrian-friendliness) of the area.
- Civic plazas. Civic plazas should be incorporated into every PUD of any size and are especially important for TODs. They provide places for people to gather and also provide space for special events (sales, celebrations, etc.). Care should be taken that civic plazas are not too large for the area they serve.
- Pockets and corners. Some of the most important features of downtowns or activity centers are small public spaces that, by virtue of sun exposure, views or other characteristics, attract people and become memorable places. An example in the Roaring Fork is the Paradise Bakery corner in Aspen. These can be planned. They should be located in Local or Global corridors.

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## D. Urban Design

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“Urban design” is term which seems inappropriate for the Roaring Fork Valley. It conjures images of tall buildings, concrete canyons, and relentless pavement -- images that are out of place in a rural mountain valley.

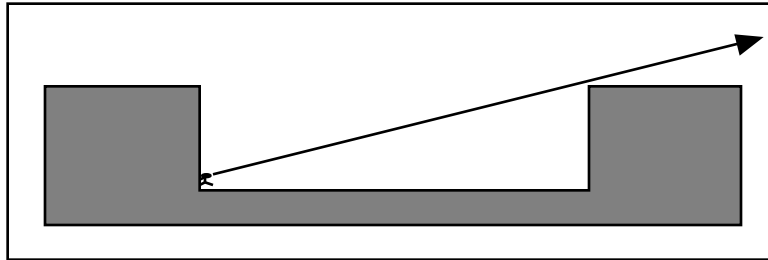
None-the-less, some of the fundamental concepts in urban design have applicability to transit-oriented design in Basalt and are useful in describing and designing transit-oriented areas.

Urban design concepts relevant to Basalt’s TOD areas include:

- Building height. Building do not need to be more that four stories in height to achieve the desired density and other characteristics of transit-oriented design. Buildings that are too tall will not be well-received by the public, will block mountain vistas and will seem out of character. However, two- and three-story buildings will be important to achieving TOD characteristics.
- Height-to-width ratios. This is an elusive but important concept in designing streetscapes that create a sense of place. Streets have only two walls with which to define space.

If those walls are low in relation to the width of the street (as in the 1:4 ratio below), views outward are not contained enough to provide a sense of unified space. The resulting weak sense of place affects how people react to a street -- how interested they are, how likely they are to stroll down to the next block, etc. Many cities and towns in Colorado have downtown streets like this. They are two wide to feel like walkable places.

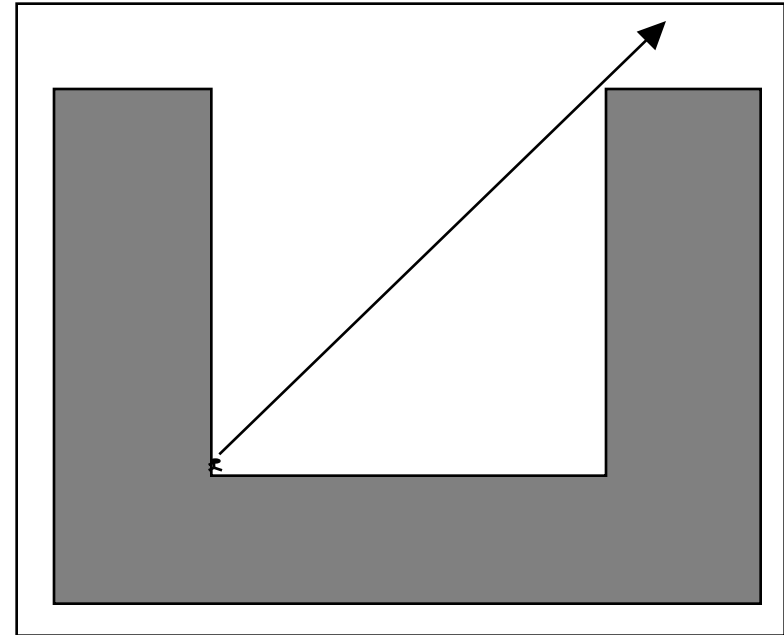




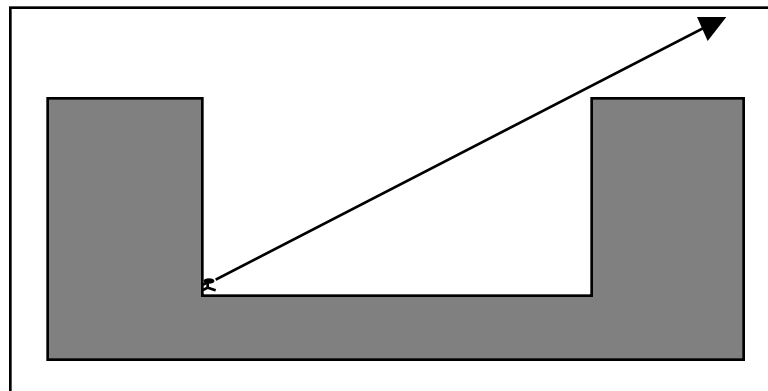
Height-to-width ratio = 1:4

At a ratio of 1:2 (example below), a balance is achieved between the amount of sky that falls within the range of vision and the amount of street wall. Such streets provide a greater sense of place and a pleasing amount of enclosure -- like 3-dimensional rooms. They feel like places where pedestrians belong.

At a ratio of 1:1 (see example to the right), the street wall significantly limits the skyview. Pedestrians will not be able to see the mountains and will begin to feel like they are in a canyon. This will seem out of character in the Roaring Fork.



Height-to-width ratio = 1:1



Height-to-width ratio = 1:2

- ❑ Street walls. The streets that feel most comfortable to pedestrians have a strong spatial definition creating a sense of place and enclosure -- like being in a room. Achieving this requires a coherent street wall. This is lost when buildings are too far apart or too dissimilar in height and scale.
- ❑ Sight lines. People “read” urban places by looking around. Lines of sight are powerful ways of informing people about where they are and where they might like to walk. Denver Union Terminal, at the end of 17th Street in downtown Denver, is visible from many blocks up the hill, and draws pedestrians into LoDo. If pedestrians do see a walking objective, they tend to get back in their cars and drive.



- **Grid size.** Prior to the automobile, towns were laid out with blocks that were 200 to 300 feet long. This is an ideal dimension for a walking environment -- long enough for a variety of buildings to be placed along a blockface but short enough to allow people to walk from place to place in a reasonably direct manner.

Long, uninterrupted blocks and massive buildings (> 500 feet) are major impediments to walking. Where the street network is laid out on 500 to 600 foot or longer blocks, it should be broken by mid-block pedestrian walkways to create a walkable grid. The City of Longmont did this on US 287 in its downtown and is now building mid-block crosswalks connecting to these walkways.

- **Building footprint.** Large footprint (> 50,000 sf) buildings have a place in today's marketplace, but they are difficult to design into transit-oriented developments. They are too large to fit within the grid size described above without consuming entire "blocks" of the street. They have long exterior walls unbroken by doorways. Such buildings discourage walking and require large areas of parking. They should be placed only in Global Corridors and along the edges of TODs -- not in the middle.
- **Building orientation.** A challenge in most site design is deciding where to place the "front door" of buildings -- especially retail buildings. This problem is confounded by the need to place surface parking behind buildings in TODs so that streets have clearly-defined street walls and appropriate height-to-width ratios (see paragraphs above). If the entrance addresses the street, it may turn its back on its own parking supply. On the other hand, if it faces a surface parking lot, the result may be that it turns its back to the street. Every site and every building is different and requires a different solution. In some instances, entrances can be located at building corners or along the side, addressing the street while allowing direct access from parking.

- **Sunlight access.** Managing and preserving sunlight access is key to good development in the Roaring Fork Valley. The high mountain environment is one where the winter sun is a welcome force of nature -- melting ice on sidewalks, warming building faces (and the pedestrians walking along them), and shining pleasantly into pockets and corners with the right exposure.

An analysis of downtown Aspen two years ago revealed clear relationships between building height, sun angle, and the viability of commercial spaces. Sunlight is an important feature of pedestrian environments in Basalt as well. Because TODs are more dense than suburban developments (with two- and three-story buildings), sunlight access should be explicitly addressed in TOD site design.

- **Density.** A central strategy in preserving quality of life in the Roaring Fork Valley and in ensuring the success of the regional transit program is to concentrate new jobs and housing into transit-oriented centers and corridors, rather than in far-flung developments spread across the Valley floor. Density promotes the vitality and sustainability of commercial development, supports better transit service, and makes more efficient use of public investments in infrastructure.

However, the term "density" means something different in Basalt than it might mean in Denver or Portland. Transit-oriented development in Basalt should be more dense than the development that has occurred over the past 25 years. However, it does not need to be as dense as a big city downtown.

Density is a volatile subject because many people, upon hearing the word, envision multi-story buildings towering over dark streets in a manner that is clearly inappropriate in Basalt or in any part of the Roaring Fork Valley. It will be helpful to be specific about how much density is really needed.



The table below provides a comparison of typical (1960 - 1998) development patterns in the Roaring Fork with development that would represent transit-oriented design in Basalt.

	Typical Suburban Development	Transit-Oriented Development
<b>OFFICE PARK:</b>		
Height	1 or 2 story	3 story plus basement parking
Landscaping	20 - 30% of site not usable as open space	minimal setbacks with usable open space
Density	0.25 - 0.40 FAR	0.50 to 1.00 FAR
<b>RETAIL SHOPPING CENTER:</b>		
Height	1 story	2 story
Landscaping	20 - 30% of site not usable as open space	minimal setbacks with usable open space
Density	0.25 FAR	0.50 FAR
<b>MULTI-FAMILY RESIDENTIAL:</b>		
Height	2 story	3 story
Landscaping	20 - 30% of site not usable as open space	minimal setbacks with usable open space
Density	5 - 10 dwelling units/acre	10 - 20 dwelling units/acre

## E. Land Use

Two aspects of land use are especially relevant to transit-oriented design: distinguishing transit-supportive from non-transit-supportive land uses; and, achieving mixed use land development patterns.

### TRANSIT-SUPPORTIVE LAND USES

Examples of land uses that can be transit-supportive (with good design) include:

- multi-family residential
- elderly/retirement residential
- cultural institutions
- daycare facilities
- hospitals
- restaurants and bars
- office buildings
- multi-family residential
- small-footprint retail

### NON-TRANSIT-SUPPORTIVE LAND USES

Examples of land uses that are inherently non-transit-supportive include:

- ambulance services
- commercial nurseries
- gas stations
- automobile rentals
- auto repair services
- large lot single-family residential
- big-box discount retail



## MIXED USE LAND DEVELOPMENT

Mixed use business districts and neighborhoods bring together a variety of complementary land uses within easy walking distance of one another. Depending on the location situation, the mix may include retail businesses, offices, services, entertainment centers, restaurants, bars and a variety of residential uses.

The most direct way to achieve mixed use is to combine multiple uses in a single development project, either vertically or horizontally. Mixed use can also be achieved by linking single-use developments with a system of safe, convenient and attractive pedestrian walkways. In most cases in Basalt, the best strategy for developing mixed use TODs will be a combination of these approaches.

Mixed use land development supports walking, bicycling and transit use because different land uses are close together, enabling people to run errands, go to lunch, and make other trips without driving. Mixed use also generates off-peak transit ridership because trips to and from these activities occur throughout the day and evening. As a result, higher transit service frequencies can be sustained all day, further increasing the attractiveness of transit. Finally, mixed use development supports business vitality and sustainability by creating economic synergies associated with the proximity of diverse uses.

It will be important in Basalt to recognize that not all land uses can thrive at every location. Retail uses must either be directly supported by a large number of “rooftops” or must be directly accessible, and highly-visible, from an arterial highway. Residential uses must be reasonably private and protected, and can be made more attractive by capitalizing on natural resources -- the Roaring Fork River or mountain vistas. Office buildings require at least some visibility and reasonably direct access. Civic uses (libraries and public office buildings) require a ceremonial aspect in their orientation and visibility.

## F. Parking Supply and Management

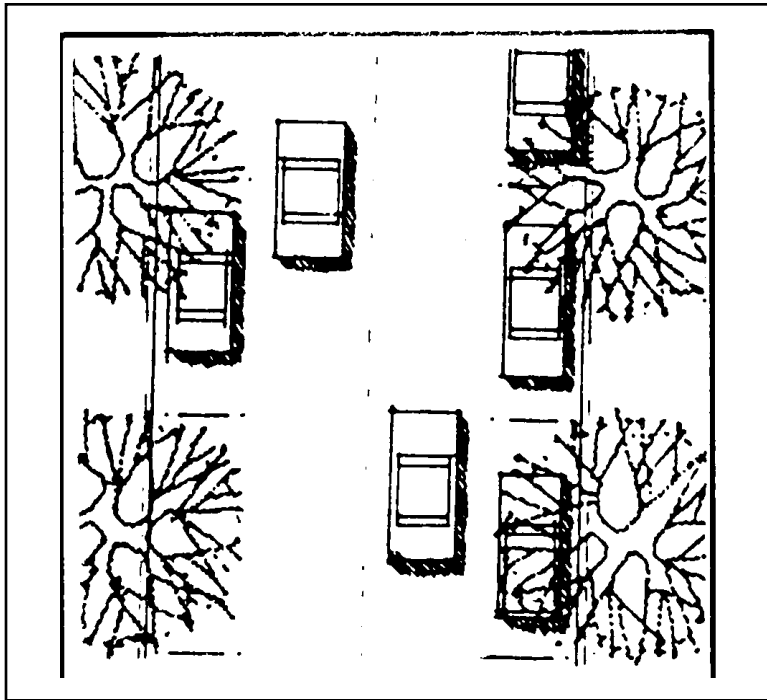
One of the primary sources of pedestrians is . . . cars. Parking is a critically-important design element of transit-oriented places. On the other hand, Basalt cannot be a transit, pedestrian or bicycle oriented place if automobile parking and circulation receives the highest priority in site design. The following principles should guide parking location, supply and design.

- Limit new supply. Many cities now impose both minimum and maximum parking standards on new commercial projects. The amount of supply to be built should be based on the expected demand at the site based on its size and type of use, but reduced to account for local trip reduction or demand management objectives. The following are recommended maximum parking ratios for TOD projects in Basalt:

General office	3.0/1,000 sf
University/college	0.2/student + staff
High school	0.1/student + staff
Sports/health club	4.3/1,000 sf
Recreation center	2.1/1,000 sf
Discount store	2.6/1,000 sf
Furniture/carpet store	1.0/1,000 sf
Hardware/home imprv't	3.4/1,000 sf
Shopping center	4.1/1,000 sf
Quality restaurant	12.4/1,000 sf
Fast food with drive-thru	10.0/1,000 sf
Casual dining	15.3/1,000 sf
Grocery supermarket	2.9/1,000 sf
Clinical/medical/dental	3.9/1,000 sf
Bank with drive-in	4.2/1,000 sf



- Provide on-street parking. Streets in Local Corridors should have on-street parking, both as a traffic-calming feature and as an economic strategy for activating the streets and supporting storefront retail. On-street parking should be preserved for use by customers, clients and visitors. Well-designed and enforced ordinances are needed to keep commuters (employees) out of premium short-term parking spaces.

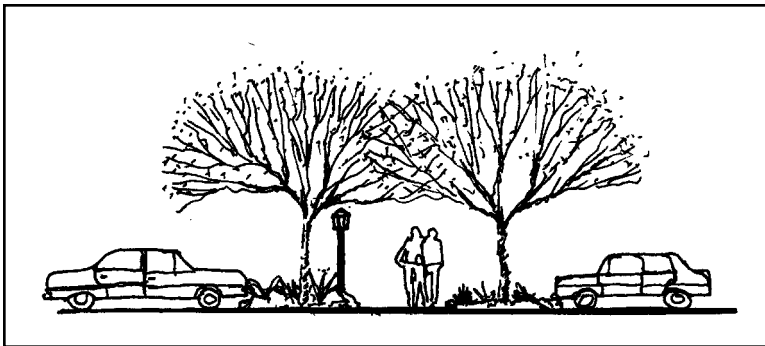


On-street parking represents high-value use of urban space. It “tames” local streets and supports retail viability.

- Segregate short-term and long-term uses. Retail centers and office-based employment must have parking for clients and customers. However, much of this parking is actually consumed by employees of those same enterprises. It is important to segregate short-term parking (less than two hours) from long term parking (all day) and to enforce the distinction. Customer and client parking should be convenient to buildings. Employee parking should be more remote. Carpool and vanpool parking should be the closest of the employee parking. Maximum supply limits should then be directed at long term parking supply, preserving critically-needed supply for clients and customers.
- Eliminate free parking. In most of the Roaring Fork today, drivers park for free with the exception of occasional municipal meters. Of course, there is no such thing as “free” parking; someone is paying. Employers, retail stores, government buildings -- and even high schools -- are all absorbing the costs of parking instead of passing them along to drivers. A policy which is not easy to enact but will eventually become an important component of achieving the regional transit goals is the requirement that all drivers pay the full cost of parking.
- Provide for shared parking reductions. One of the potential benefits of mixed use development is the opportunities it creates to reduce the amount of parking supply by having different land uses (e.g., office, retail, entertainment, hotel, housing) share the same parking supply. Because parking demand for different uses peaks at different times of the day, the total supply required at any point in the day is less than the sum of the peak demand of all uses. Basalt currently allows a 20% shared parking credit. For future TOD’s the Town could direct developers to utilize the Urban Land Institute’s shared parking methodology to calculate a reduced off-street parking requirement. For office and retail land uses in new TODs, the Town could allow up to 25% of the minimum supply requirement to be met with on-street spaces.



- **Manage off-site impacts.** Where reduced parking standards or supply limits are imposed in Basalt TODs, mitigation measures should be implemented to protect against “spill-over” impacts, especially on residential neighborhoods. In many cases, the most practical mitigation strategy will be a “residential parking permit program.”



*Protected sidewalks through parking lots improve pedestrian safety, encourage walking for short trips, and reduce congestion.*

- **Prevent parking barriers.** Surface parking lots and parking garages can become barriers to pedestrian, bicycle or transit access to sites and to internal circulation within sites. Lighted and separated pedestrian walkways should be provided through surface lots greater than 500 spaces or 5 acres in size. Where the opportunity for direct connections to bikeways or well-used bike lanes is present, a plan for safe bicycle circulation into the site and to the main buildings should also be required for large sites with over 1,000 auto parking spaces.

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## G. Integration of Transportation Modes

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Successful TODs require careful integration of the modes. This helps balance travel among the modes, ensures good connectivity between the modes, and improves the range of choices that people have in how they travel. The specific issues to be addressed in integrating modes in Basalt TODs include: developing multimodal streets and planning multimodal transit centers including parking.

- **Developing multimodal streets.** Multimodal streets balance the needs of pedestrians, bicycles, autos and public transit. Such streets are explicitly designed to handle each of these modes and to prioritize certain movements over others. For example, a multimodal street might employ right-turn and bus-only lanes at congested intersections coupled with signal preemption for buses. Both Boulder and Portland have designated multimodal streets and used this designation to make design and programming decisions.
- **Planning multimodal centers.** Transit stations along the Valley rail system will function as multimodal centers. Some of the characteristics of such centers are described in Section C. One challenging issue for Basalt (and for other communities in the Valley) is the need for local transit centers to serve a park ‘n ride function. This may seem undesirable from the standpoint of space allocation and urban design, but is a necessary aspect of developing a regional rail system. The physical impacts can be lessened somewhat by building structured rather than surface parking and by limiting the amount of parking provided at any one location. Benefits will accrue locally from the park ‘n ride function, as commuters spend money at retail establishments and restaurants at the transit centers.



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## H. Sample Policies and Codes

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This section provides suggestions and examples of local policies and codes that have been, or could be, utilized to implement some of the TOD concepts described in previous sections. Much of this material was originally published in a Handbook prepared for the Denver Regional Air Quality Council in 1997.

### STREET NETWORKS

**Revise the local street classification system.** Most local street systems recognize a classification scheme including the following streets:

- Freeway and/or Expressway;
- Arterial (may be divided into major or principal arterials and minor arterials);
- Collector; and,
- Local (may be divided into several categories such as local commercial, local residential, etc.).

One means of implementing the strategies described above would be to introduce additional classifications in the “city street system.” (Colorado Statutes § 43-2-123 through 125 require establishment of a City Street System with “arterial” streets and “local service” streets. Cities have flexibility to establish more detailed systems.)

Additional classifications that would address issues described above would include a “Connector” classification and various sub-classes within local streets. The purpose of a Connector Street designation would be to ensure connections to land uses surrounding a PUD or large commercial project. Implementation of such a designation would involve:

- amending the Town’s functional classification system to add Connectors;
- developing design standards for the new classification; and,
- adding provisions to the PUD regulations or ordinance requiring Connector streets based on certain criteria.

Criteria for when or where Connectors are required could include one or more of the following:

- a local street map showing such a connection ;
- the size of the project (e.g, over 100 acres); or,
- a frequency requirement (e.g., at least one connection in each half mile).

Calthorpe proposes Connector streets as follows:

*“Connector” streets should provide linkages . . . to core commercial areas, schools, and community parks without requiring the use of arterials. They should be designed to carry moderate levels of local traffic smoothly, in a way that is compatible with bicycle and foot traffic. A network of connectors should provide several alternative paths through neighborhoods to the center. The connector network should not provide a through-route alternative to arterials.*



*Connectors provide multiple routes to local destinations. Connectors are intended to carry moderate levels of local traffic from neighborhoods to arterials and major destinations. “T” intersections and “dog leg” alignments should be used to reduce through traffic and reduce speeds. On-street parking should be provided. Connectors should be aligned along the edge of parks and open spaces. Driveway cuts should be minimized.*

In addition to Connectors, it may be advantageous to define subclassifications of the Local Street category. The purpose of doing this would be to set the stage for different design standards.

The City of Fort Collins recently differentiated between: Connector, Commercial Local, Industrial Local, Residential Local, Narrow Residential Local and Rural Residential Local, with separate design requirements for each.

**Develop a prescriptive map showing desired local street network in undeveloped areas within local planning areas.** Since the 1920s, with the advent of modern subdivision regulations and the PUD process, cities have not planned local streets. Instead, they have placed performance requirements on developers who then design street systems meeting minimum requirements as well as prevailing market desires.

A direct effect of this approach is the complete lack of connections between adjacent projects. This is not entirely the developer’s fault. Existing neighborhoods will oppose projects which would place increased traffic on “their” streets. Rather than fight this battle, developers simply design projects to connect only with the nearest arterial roadway. The result is a collection of “pods” of development arranged along major roadways with no direct connections at their common boundaries.

Cities and Towns can develop local street plans (including all applicable street classifications including Connector and Local) for areas that have not yet developed. These plans should take into account landscape features and the location of destinations (schools, shopping areas, etc.). If large land holdings exist, these can also be considered in designing the network. Implementation of such a prescriptive map would involve:

- preparing the local street plan; and,
- adding provisions to PUD regulations requiring developers to either conform to the map or provide an equivalent system.

This approach, while not common practice, would be consistent with zoning and exactions case law. It offers flexibility while at the same time clearly communicating the Town’s objectives.

**Adopt connectivity standards for PUDs.** This strategy could be pursued alone or as part of the two previous strategies. Connectivity standards would be adopted both for vehicular traffic and for non-motorized travel.

Many analysts evaluating the neo-traditionalists’ call for street connectivity have pointed out that cul-de-sacs could, in many cases, serve to encourage walking and bicycling if direct routes were achieved through off-street paths. In these cases, non-motorized travel would be more direct than vehicular travel, thereby encouraging walking and bicycling.

Since the 1970s, some subdivisions have been built with walkways penetrating the ends of cul-de-sacs. If introduced at the time the project is built, these are relatively inexpensive and non-controversial. (Introducing them in existing subdivisions is another matter, of course.)



Non-motorized connectivity can be defined quantitatively through a maximum Actual/Minimum distance ratio where “Actual” means the distance between two points via the shortest available route and “Minimum” means the distance that would result from a hypothetical rectilinear grid (with two perpendicular legs of the trip). A ratio above 1.5 could fail the standard. (Alternatively, City of Fort Collins defines LOS F for pedestrian directness as exceeding a ratio of 2.0.)

Vehicular connectivity is also important in reducing VMT. The standard could be stated in an A/M ratio as described above, or could mandate direct connections to adjacent land uses at minimum intervals. It should be noted that the primary obstacle to this approach would not be the developers proposing projects, but nearby neighborhoods.

Implementation of connectivity standards would involve:

- undertaking analysis to ensure that the public need and benefit is well-established in the event of judicial review; and,
- adding connectivity standards to PUD regulations/ordinances.

**Revise local street design standards.** Most local street standards, if they have not been revised within the past decade or so, probably provide for inappropriate street cross-sections.

Local government experience over the past twenty years or so has demonstrated that over-designed (too wide, etc.) local streets cause problems (e.g., speeding), consume more land than necessary, and are detrimental to and discourage pedestrian activity.

Implementation of new street standards would involve:

- first, ensuring that an appropriate street classification system is in place; and,

- then, developing new standards that are specific to each street type in the system.

The standards should address:

- street cross-section including lane and parking area width;
- intersection design including crosswalks and turn radii;
- bicycle accommodation;
- curb cuts and driveway standards; and,
- provisions governing on-street parking.

Some cities (e.g., Portland, Fort Collins, Flagstaff) have successfully adopted “skinny street” standards. Local fire departments can be counted on to be concerned about such standards, and may oppose them. Portland dealt with this issue by coordinating closely with fire department officials in development of the standards. It is possible to provide access for fire response equipment on narrow street systems. Careful evaluation of turn radii, vehicle width and other measures can resolve technical issues.

**Develop a neighborhood traffic mitigation program.** Communities in the Roaring Fork are experiencing conflicts between residents and vehicular traffic on neighborhood streets. While studies often reveal that 80% to 90% of the traffic on local streets is in fact local to the neighborhood, few cities will be able to avoid implementing some sort of neighborhood traffic mitigation program (NTMP).

However, with the adoption of connectivity standards or other requirements that improve connections between proximate land uses, local streets will see some increase in traffic (formerly shunted onto



arterials). Thus a local NTMP can be an important tool in making a more connected street system function. Objectives of such a program would include traffic safety and improved pedestrian environment. Concerns of the local police, fire and emergency response officials must be carefully addressed. (Some NTMP measures can increase response times in certain corridors.)

It is important in developing an NTMP to anticipate certain predictable outcomes. First, once an NTMP is in place many neighborhoods will desire projects on their streets. Thus, adoption of an NTMP has significant budget implications for the public works department. Second, there will be conflicts which are not easily resolved. (For example, bicycle advocates will dislike many special designs including traffic circles.) Finally, not all objectives can be met through street design. Some amount of increased enforcement may also be necessary.

## PEDESTRIAN ENVIRONMENT

The local planning strategies outlined below are well within the scope of authority of local governments in Colorado. In each case, local government and private landowners/developers will share the responsibility for achieving a pedestrian-friendly, transit-serviceable urban form.

This cannot be accomplished solely through requirements on developers. In many cases, public investment in connecting (missing link) pedestrian facilities will be needed. Even in completely undeveloped areas where developers provide all of the infrastructure, a public commitment to transit service should be part of the plan. If a high-quality pedestrian environment is provided in a low-density, all-residential subdivision with no transit service, some amount of strolling may be induced, but any shift away from auto travel will be minor.

**Adopt a pedestrian district designation.** Local governments can designate pedestrian districts where the walking environment will be of a high quality. Candidate locations should include:

- areas within a half mile radius of (K-12) schools;
- college campuses and areas within a half mile radius of them;
- downtowns; and,
- transit-oriented developments.

To implement pedestrian districts, local governments can:

- revise local ordinances relating to the “law of the road;”
- adopt developer requirements for high-quality pedestrian facilities, transit boarding areas and site layout and design;
- set aside funding for “missing links” as well as crosswalk improvements and other upgrades in the public rights of way;
- give priority to pedestrian movements in traffic signal timing;
- develop and adopt special design standards applicable within pedestrian districts (see below);
- provide for a high level of continuous sidewalk maintenance including funding a high-priority for snow removal; and,
- develop and implement signage programs notifying drivers when they are entering pedestrian districts.



## Develop zoning overlay for transit corridors or districts.

Special zoning overlays provide a means for local governments to impose requirements on landowners and developers, and to provide incentives for accessible urban design. Variations of this approach have been implemented by the Cities of San Diego, Sacramento, Portland, Orlando, and many others.

Topics which could be addressed in a special overlay include:

- disallow land uses (prohibit certain pedestrian-hostile activities and land uses which might otherwise be allowable under the base zoning -- e.g., gas stations, fast food outlets);
- conversely, allow land uses (primarily to achieve a richer land use mix than might be allowable under the base zoning);
- allow higher floor area ratios;
- relax parking requirements, or impose maximum ratios;
- relax minimum landscaping set-asides;
- revise building setback lines;
- require pedestrian connections between adjacent sites and cross-site pedestrian facilities on large sites; and,
- impose requirements for parking and building placement, pedestrian design, and transit boarding areas (see below).

A zoning overlay district designation should be based on transit route alignment and transit service levels and should apply along and either side of a high capacity transit corridor.

## Develop formal pedestrian crossing treatment warrants.

(This section is based on work undertaken by City of Boulder Transportation Engineering Department.) There are a wide variety of methods or “treatments” available to facilitate safe pedestrian crossings. To support objective, predictable decision-making, cities can develop a system of “warrants” to guide decisions about when and where to install various crossing treatments for pedestrian safety and convenience. Such warrants should be specific to location: mid-block crossings are different than intersections.

They should take into account the type of pedestrian facility, pedestrian volumes, vehicle traffic volumes, the crossing distance, and related factors. A set of warranted treatments based on these factors could include:

- take no action;
- install a marked, signed crosswalk;
- install neck-downs;
- install median/refuge island;
- install traffic signal;
- install pedestrian crossover; and,
- build grade separation.

(Pedestrian crossovers are a variation of a pedestrian signal used successfully in Southern California at mid-block locations. As with a standard pedestrian signal, actuation by a pedestrian pushing a button causes the vehicle indications to change from green to yellow to red. The pedestrian indications then change from “don’t cross” to “start crossing.” When the pedestrian indications change from “start crossing” to “don’t start,” however, the vehicle indications change from solid red to flashing red. This means vehicles must continue to stop and yield to pedestrians, but may proceed without waiting for the light to change back to green. This approach is intended to reduce vehicle delay, thereby increasing driver compliance without endangering pedestrian safety.)



An overriding concern should be the need for a consistent understanding on the part of the public about the rights and responsibilities of both drivers and pedestrians. To the extent a city installs physical management systems, it may create misunderstandings at other locations. If motorists encounter special treatments at certain sites, this may reinforce an unconscious perception that other locations without these treatments must be places where pedestrians have no right to be walking.

The need for a routine, objective process for making decisions about how to facilitate safe pedestrian crossings is important enough for cities to develop a system of warrants for their local crossing treatments. However, this should be coupled with a campaign to increase public understanding of the rules of the road and of pedestrian rights of way.

### **Develop design standards for transit/pedestrian districts.**

Local governments may find it useful to develop design guides which can be applied in pedestrian or transit corridor overlay districts, or even citywide. Design guides can also be advisory rather than regulatory in nature. In either event, illustrative drawings similar to those provided elsewhere in this manual will help developers and builders understand the desired features and characteristics. Extensive design guidelines have been prepared by Tri-Met (Portland, OR); Snohomish County (north Puget Sound); and San Diego (incorporated into their land development guidance system).

The Denver Regional Transportation District (RTD) published its “Suburban Mobility Design Manual” in 1993, and its “Creating Livable Communities: A Transit Friendly Approach” in 1996. The latter document includes design guidelines for transit-oriented development as well as design guidelines for transit facilities and equipment. Both of these are available from RTD.

## MIXED USE LAND DEVELOPMENT

**Update the Local Zoning Ordinance.** In many communities, a good strategy may be to work within the zoning framework by modifying the zoning ordinance to permit, encourage or even require mixed use development. In most cases, the process of changing the zoning ordinance is greatly facilitated by first developing a comprehensive land use plan.

Some specific zoning strategies that could be considered are:

- Create a mixed use zoning category. This may be thought of as simply removing the institutional barrier (single use zoning categories) to mixed use. Specific areas of the city would be designated as mixed use areas. Land use mix characteristics within these areas could be met within specific projects or through the development of adjacent projects.

Generally, this strategy will not in itself cause mixed use to occur, since (absent specific incentives or requirements), developers will tend to propose single use projects and the resulting development pattern will be uniform and unmixed. Thus, the establishment of mixed use zoning categories may be a necessary component of a mixed use policy, but it will not in itself be sufficient to bring about mixed development patterns.

- Create overlay zoning for transit corridors or pedestrian-oriented places. Again, this may be thought of as a permissive action which makes mixed use possible but does not in itself cause mixed use to occur. This strategy differs from making a mixed land use designation and assigning a new zoning category in that it leaves the underlying zoning untouched and avoids the need to undertake rezoning of property which can raise unnecessary controversy. An “overlay” modifies the base zoning to allow specific additional types of development if certain



conditions are met. Normally, the overlay provides standards and requirements that define these conditions. The overlay approach works well in connection with transit corridor planning or in connection with designation of pedestrian areas.

- Allow a “special plan” as a mixed use option. Cities may wish to leave the zoning system in place and unchanged, but allow for special plans -- basically a specific application of the Planned Unit Development (PUD) process used by many cities to make zoning and subdivision regulations work better at the project level. In this case, the PUD ordinance would specifically set forth the basis for mixed use projects, including design standards and performance requirements.
- Require housing mix in commercial projects. Some cities have taken a more regulatory approach, requiring inclusion of a housing component in commercial projects in certain areas. This can be a transit-supportive strategy and can also be part of a local affordable housing program. The housing mix could be vertical as in the case of second floor apartments above retail, or horizontal as in the case where a portion of a site is commercial and another portion is residential. For this strategy to succeed, demand for both commercial and residential development must be fairly robust. Often, the city may need to provide further encouragement in the form of incentives or cost participation. Otherwise, the housing requirement may simply discourage any further commercial development activity, to the benefit of neighboring communities.
- Allow accessory (ancillary) units. Another potential linkage with affordable housing programs is changing the zoning ordinance to allow homeowners to build “accessory units” (usually apartments) either within the existing house or in a separate building on the same lot. This will allow people in certain employment categories to live closer to their jobs (e.g.,

nannies, maids and other service workers). Orlando, Florida has had considerable success with ancillary units. However, care should be exercised in communities where property values are especially high and housing demand is unusually strong. Boulder’s “house behind a house” provisions became an opportunity for abuse as “accessory units” two or three times the size of the original dwelling were built.

- Incorporate mixed use performance standards into zoning codes. While zoning ordinances typically require adequate roadways and parking, they should also require the equivalent for pedestrians and for public transit. One way to promote land use mix is through better connections between properties: a ubiquitous sidewalk network, direct pedestrian connections between adjacent sites, small-block site layout wherever possible, and provisions for transit access and circulation.

**Undertake Development of “Specific Plans.”** Cities have begun using sub-area plans as a means of achieving the types of development called for in community master plans or comprehensive plans. Many of the issues to be resolved in achieving mixed use development patterns require planning that reaches beyond specific projects. Sidewalk networks, street grids, and desired mix of uses cannot be assured on a site-by-site basis. The role of sub-area planning is to provide a community-based framework for private development.

Kaiser, et al. define this as a kind of “small-area planning:”

Small-area planning is the process of developing detailed plans for sub-areas of the jurisdiction, based on the overall land use plan as well as on discourse with local interests to set specific community development priorities. Small-area planning can be seen as ‘stepping down’ from the more general areawide plan to deal with the nitty gritty details of neighborhoods and specific parts of the urban area. Because these plans are closer to home



for citizens, they typically inspire more focused debated than plans at the scale of the city or county. They are an important way of implementing areawide plans, translating more general policies into action recommendations, and building consensus among land use game players for these actions.

The planner can use small-area plans for a variety of purposes. They may be used to scope out future development possibilities in growing fringe areas, including transportation corridors, where future development would benefit from a planned pattern of infrastructure. (Kaiser, et al., 1995)

However, the concept of a “specific plan,” originally formalized in California, takes the sub-area plan a long step farther and provides an ideal means of achieving mixed use development. The following discussion is excerpted from the Snohomish County Guide 1993.

A particularly good model for sub-area planning is the “specific plan.” Pioneered in California, the specific plan is comprehensive and detailed, and departs from other sub-area plans by its strong orientation toward implementation. . . with applications ranging from strip-commercial redevelopment to creating urban nodes along regional rapid transit lines.

First and foremost, a specific plan is a reversal of traditional roles. The local government actively promotes and coordinates the planning of development projects, instead of simply establishing general policies and reacting to private development proposals. Second, the specific plan is a master development plan for multiple parcels of land in both private and public ownership. It treats the sub-area like a single, integrated project, rather than a series of individual projects on separate parcels of land. The local government, land owners, and developers jointly develop the plan, and it covers all of the sub-area. Often the local government finances the specific plan,

then recoups the costs through fees assessed of developers within the specific plan area. In California, specific plans can be initiated by a city or county, or by land owners within the sub-area. In planning the urban center(s) of the community, it is important that the local government, as the representative of the entire community, initiate and lead the specific planning effort.

Like any sub-area plan, a specific plan must conform to the comprehensive plan for the community in which it is located. When the plan is done, the area’s zoning, public works standards, subdivision regulations, and design standards must conform to the specific plan. Ideally, the specific plan contains enough detail in all these areas so that these regulations can be *replaced* by the plan. The plan, in effect, becomes a single, unified development plan and code.

A specific plan benefits the community as a whole by ensuring realization of the vision and goals of the comprehensive plan (including mixed use development in certain areas). It benefits developers by providing a clear indication of community desires and by helping them design projects that will gain easy approval (thereby reducing up front costs).

Specific plans have been widely used in connection with the planning of urban centers around transit centers. Portland, Oregon began using specific development planning in 1992 for planning light rail station areas as part of its “Livable City” program. Urban centers developing around Washington, D.C. rail stations also use variations of specific planning.

A good specific plan will address:

- land use (on a map);
- design guidelines;



- existing and planned public facilities (esp. ped network);
- resolution of any environmental issues and open space; and,
- an implementation program (regulations, phasing, capital improvements, and funding).

**Require Mixed Use in Transit Corridors and Station Areas.** In some cases, it may be appropriate to take a regulatory approach and actually require a mix of land uses along major transit corridors and around planned regional transit centers. This approach capitalizes on the value added by high capacity transit by imposing additional requirements for development in transit-benefited areas. This will be most effective in connection with rail system development where land values are enhanced by the proximity to stations.

**Provide Incentives for Mixed Use Development.** Rather than require mixed use, a city can offer developers incentives to build mixed use projects. These can take a number of forms. In areas of high land value where development forces are strong, density bonuses may be an incentive to mixed use development. These may be based on trip reduction estimates or mode share assumptions. In suburban parts of the Roaring Fork Valley, density bonuses may have little appeal to developers, who feel the market leans toward low-density projects in the first place, and who are building on low cost land. In urban parts of the region, bonuses may have more appeal. Where cities have implemented impact fee systems, impact fee credits can provide an effective incentive, again based on trip reduction estimates or mode share assumptions. Cities can also offer expedited processing and plan review for mixed use projects conforming to specific standards. Finally, an important way to encourage mixed use is for the city to participate financially in the cost of key infrastructure components (e.g., roads and sidewalks) even if these are later repaid out of special district fees or taxes.

**Facilitate Infill and Redevelopment Projects.** One important reason more mixed use projects are not built within existing urbanized areas is the existence of zoning requirements that actually discourage such projects. Cities and towns with an interest in infill and redevelopment should carefully identify barriers to such projects and eliminate them. One way to do this is through an “Urban PUD” ordinance which accomplishes for urban projects what PUD ordinances have traditionally done for suburban projects: provide a means for developers to pull together site plans that address zoning and subdivision requirements in an integrated manner, and that allow some variation from requirements to make the project work.

**Implement Demonstration Projects.** A significant deterrent to mixed use development in the Roaring Fork is the lack of recent, successful examples. Citizens rightly are skeptical about the idea of “neighborhood commercial” projects, for example, because they will envision not the “mom and pop grocery” of planners’ dreams, but the convenience gas stations of home owners’ nightmares. Developers accustomed to building large residential subdivisions have no working template of how jobs and retail might be incorporated into such projects. Commercial developers have little or no experience with marketing or managing residential components of office/retail projects, and bankers are similarly inexperienced with such combinations. One activity local governments could pursue is development of demonstration mixed use projects. Where “new urbanist” style development projects have been built around the country, they have sold and leased out rapidly (Disney’s Celebration is the one example). This exposes the development industry and financial community to the potential opportunity and gives potential homeowners and commercial space tenants an attractive local example to visit and gain an understanding of how mixed use might add, rather than detract from, property values.



## I. Transit-Oriented Site Design Checklists

### Pedestrian Access and Circulation

	important	essential
<input type="checkbox"/> 1. Direct, continuous sidewalks across all large parking areas	████████████████████	
<input type="checkbox"/> 2. No parking barriers to major cross-site sidewalks	████████████████████	
<input type="checkbox"/> 3. Direct sidewalk connections to external sidewalk grid	████████████████████	
<input type="checkbox"/> 4. Direct sidewalk connections between all areas of the project site	████████████████████	
<input type="checkbox"/> 5. Global walkway width: 16 ft minimum (20 ft preferred)	██████████████████	██
<input type="checkbox"/> 6. Local walkway width: 10 ft min. (12 ft preferred); 20 ft max.	██████████████████	██
<input type="checkbox"/> 7. Private walkway width: 5 ft min.; 10 ft max.	██████████████████	██
<input type="checkbox"/> 8. Pedestrian plazas and parks to create "place" and tie uses together	██████████████████	██
<input type="checkbox"/> 9. Global and local crosswalks use texture, color and/or are raised	██████████████	██████
<input type="checkbox"/> 10. Driveways located away from building entrances	██████████████	██████
<input type="checkbox"/> 11. Canopies /awnings - building entrances and walks next to buildings	██████████	██████
<input type="checkbox"/> 12. Sidewalk width/design reflects hierarchy (global-local-private)	██████████	██████
<input type="checkbox"/> 13. Sun angle explicitly designed into pedestrian space layout	██████████	██████
<input type="checkbox"/> 14. Information signing at global/global and global/local intersections	██████████	██████
<input type="checkbox"/> 15. Appropriate street furniture on all global and local walkways	██████	██████





