

6. A GUIDE TO TRANSIT COMPATIBLE LAND USE & DESIGN

INTRODUCTION

The general plans and associated specific plans, zoning, and design guidelines for Vacaville, Solano County, Fairfield and Suisun City govern the future land uses along the 12-mile Jepson Parkway corridor in each respective jurisdiction. This Concept Plan does not seek to change that. However, the MTC and STA recognize that this corridor provides a unique opportunity to link transportation improvements with future land use and design decisions. The corridor has substantial amounts of unbuilt land, planned for urban uses. As specific land use decisions are made and individual development projects are proposed, there is potential to integrate the land uses and site lay-outs with the transit, bicycle, pedestrian and landscape features of the Parkway. The Parkway can become a model for similar multi-jurisdictional transportation projects in Solano County and the region. This chapter provides some guidance on how future development projects might link with the Parkway.

Several points need to be recognized. First, this Plan does not recommend changing the individual general plans of the four jurisdictions. It assumes that the types and locations of planned future land use -residential, commercial, industrial, recreational and agricultural- would continue. Second, these guidelines are advisory only. And, while we believe they are useful to ensure a higher likelihood of linking future development with transportation, the guidelines will need to be adjusted and refined to fit the particular circumstances of each jurisdiction. And, finally, these guidelines are not meant to cover all situations or proposed projects. They focus on typical developments and offer suggestions on how to improve the project's "livability" and its compatibility with future transit use.

Vacaville's current General Plan calls for primarily low to mid-density residential uses along Leisure Town Road with several neighborhood and community commercial centers at key locations. Solano County's General Plan calls for continued agricultural uses along its Vanden Road segment, with some continued industrial uses. Fairfield's General Plan calls for a mix of uses in different areas including the Peabody-Walters Master Plan. Light industrial and business park uses are planned along the Walters Road and Cement Hill portions. A sports park is planned near where Cement Hill and Walters could intersect. Suisun City's General Plan calls for master planned lower density residential uses along its portion of the corridor with some convenience commercial and park use. The concepts presented here are organized according to the types of land uses and projects likely to occur under these general plans.

To fulfill the potential of this Concept Plan the STA encourages each of the jurisdictions to update and revise their general and specific plans to better link future land use and transportation. The principles described in this chapter could assist in these revisions.

LAND USE / DESIGN



FUNDAMENTAL PRINCIPLES

Much has been written in recent years about the essential connection between land use patterns and successful multi-modal transportation strategies. See for example Cervero and Bernick 1996, Calthorpe 1994, Untermann 1984, Local Government Commission 1992 and 1995, Bank of America et al. 1995, Carlson et al. 1995, and Metropolitan Transit Development Board, 1993. The arguments in favor of an integrated land use/transportation plan and the benefits of such a strategy are well documented. Reducing dependence on automobile use, particularly single occupant driving can reduce air emissions, traffic congestion and commute times. Improving land use patterns and site design to orient them less for automobiles and more for pedestrian scale can promote transit use, improve urban design quality and livability and increase social interaction. The concepts presented for the Jepson Parkway follow several simple principles to increase the likelihood of a balanced transportation system in the future.

Safety and Convenience: For commuters or travelers to use alternative modes of transportation, such as bus or rail, requires safe, convenient and comfortable stops, routes and connections to origins and destinations.

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Density: To support transit and pedestrian use, densities must be higher near transit centers and stops, along major arterials and at key intersections.

Clustered or Mixed Use: Locating residential, commercial and job-oriented uses in reasonably close proximity to each other can reduce lengthy trips for work or shopping. Locating parks, schools and neighborhood shopping near residential uses with adequate and safe connections can reduce car trips and encourage social interaction. More flexible zoning that encourages live-work spaces or mixed use within structures can promote fewer external trips.

Choice: Providing multiple convenient travel choices between uses by transit, bicycle or car can encourage alternative modes as build-out occurs and density increases. Choices for roads also reduce congestion and the need to unnecessarily widen roads. A grid or modified grid offers numerous road options to avoid channeling vehicles into one or several large intersections.

Connections: Safe, attractive and convenient pathways and linkage between buildings, between adjacent uses (such as schools and housing) and within a planned development such as an office park can increase pedestrian and bicycle use.

Human Scale: By designing planned communities and projects at a human scale, bicycling and walking are perceived as safer, more attractive and interesting. Attention to details regarding the relationship of building to sidewalks, sidewalk to street and parking areas and buildings to landscaping can enhance urban design quality and increase pedestrian comfort.

LAND USE AND DESIGN CONCEPTS

The following ideas support transit and pedestrian compatible development for planned communities, low density residential, multi-family housing, neighborhood shopping centers, industrial parks, light industrial buildings and a transit hub/multi-modal station. Specific guidelines with corresponding diagrams are presented for each of these categories. The projects shown are hypothetical, however, they are representative of the densities, land uses and development types that are typical of the Jepson Parkway corridor.

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PLANNED COMMUNITIES

Often, master-planned communities channel traffic onto one or two arterial loop roads with adjoining collector streets and residential cul-de-sacs. This circulation framework discourages walking, cycling and transit service by increasing travel distances to key destinations. A grid of local streets provides the most direct and convenient transportation routes. A network of walkways and trails connecting neighborhoods to each other and to open spaces and community services also encourages walking and bicycling. Streetscape amenities, such as seating, street trees, lighting, fountains and public art, enhance the human-scale environment and contribute to the pedestrian experience.

Mixing land uses rather than separating land uses into isolated activity zones is another strategy for reducing automobile dependence. Mixed-use development with multi-family housing or professional offices on second and third stories of buildings with retail and public uses on the ground floor allows for convenient access to housing, employment and services. Locating higher density housing near transit routes and key intersections can promote bus use. Locating retail use near higher density housing can shorten or reduce trips.

Following are more specific transit-compatible site design guidelines that correspond with the diagram on the adjacent page.

- ① Develop a grid of streets to support a convenient network of circulation for bus transit, cars, pedestrians and bicycles.
- ② Develop a community/commercial town center with a transit hub that feeds to a regional transportation network. Allow for flexible zoning so retail use, office and housing can be mixed in close proximity.
- ③ Centrally locate the transit hub so that it can also serve as a commuter park-and-ride lot and transfer center.
- ④ Mix land uses to support services within comfortable walking distances of homes.
- ⑤ Avoid separating neighborhoods by long distances from commercial areas, which will increase auto-dependency.
- ⑥ Cluster higher density housing and office/industrial uses along major transit routes. Flexible zoning can also facilitate these uses on major routes.
- ⑦ Encourage higher intensity development near transit centers.

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Figure 19

Planned Communities



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LOW DENSITY RESIDENTIAL: THE GRID

Many low-density residential subdivisions are designed with cul-de-sacs and few connecting local streets. This layout can isolate neighborhoods, create longer travel distances and encourage driving. An alternative solution would include a network of local streets facilitating efficient access throughout the neighborhood, to bus stops, neighborhood parks and community services. Alleyways, bike lanes, pedestrian walkways and conveniently located bus stops also encourage alternative modes of transportation.

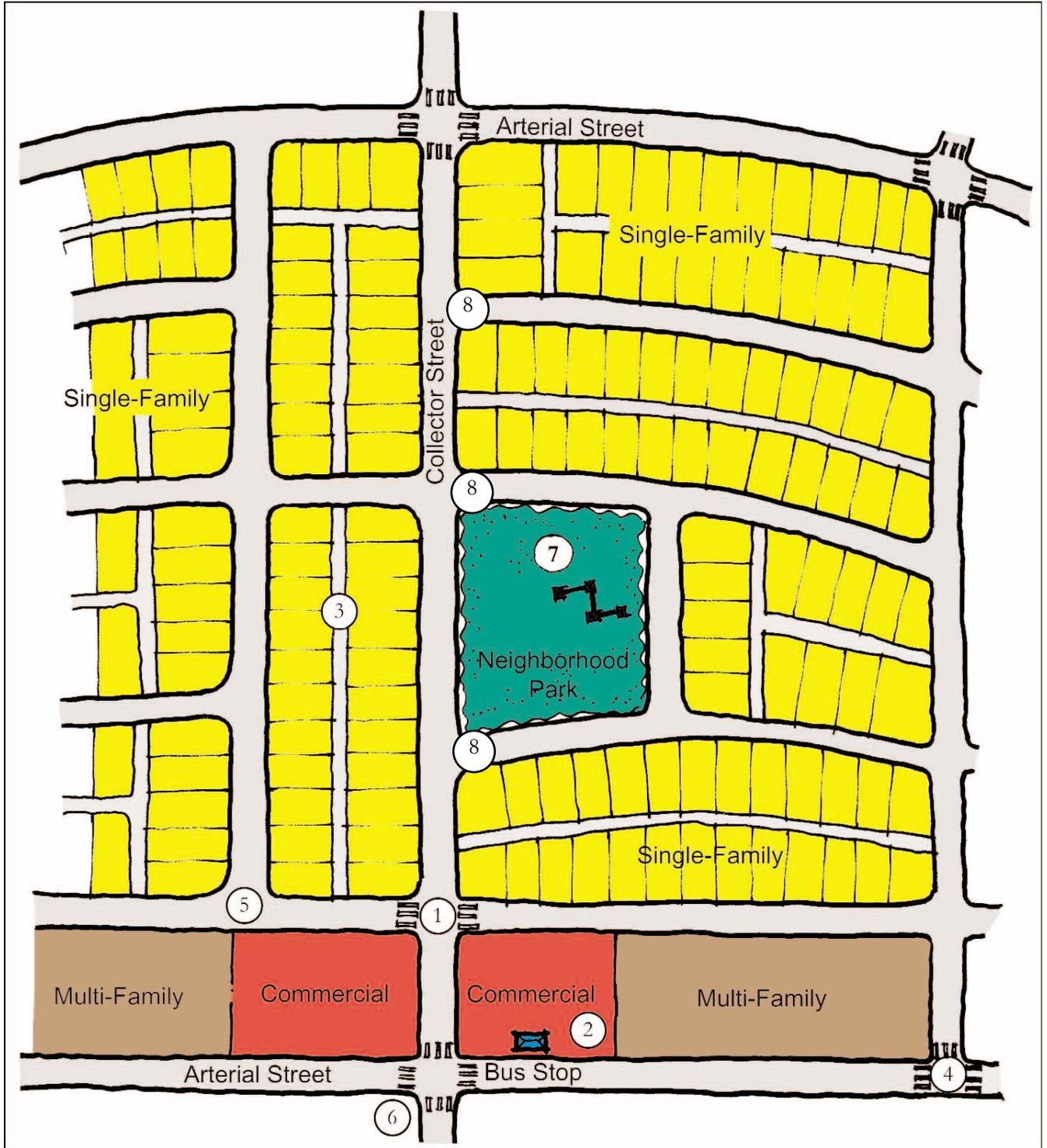
The following are specific guidelines that correspond to the diagram on the adjacent page:

- 1 Provide connecting neighborhood streets for convenient bus transit, automobile, pedestrian and bicycle circulation within neighborhoods and adjacent activity areas.
- 2 Provide safe, direct walking routes to bus stops, parks, schools and commercial uses.
- 3 Use alleys as appropriate to reduce on-street congestion and to take parking and utilities off the streets.
- 4 Develop a system of arterials and local streets that provide the most direct routes between origins and destinations.
- 5 Include bike lanes on arterial and collector streets.
- 6 Provide crosswalks, or more defined features like special parking, to bus stops and other major pedestrian destinations.
- 7 Provide a centrally located park and/or school for convenient access.
- 8 Provide traffic slowing or “calming” infrastructure as needed to slow speeds into residential streets.

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Figure 20

Low Density Residential "The Grid"



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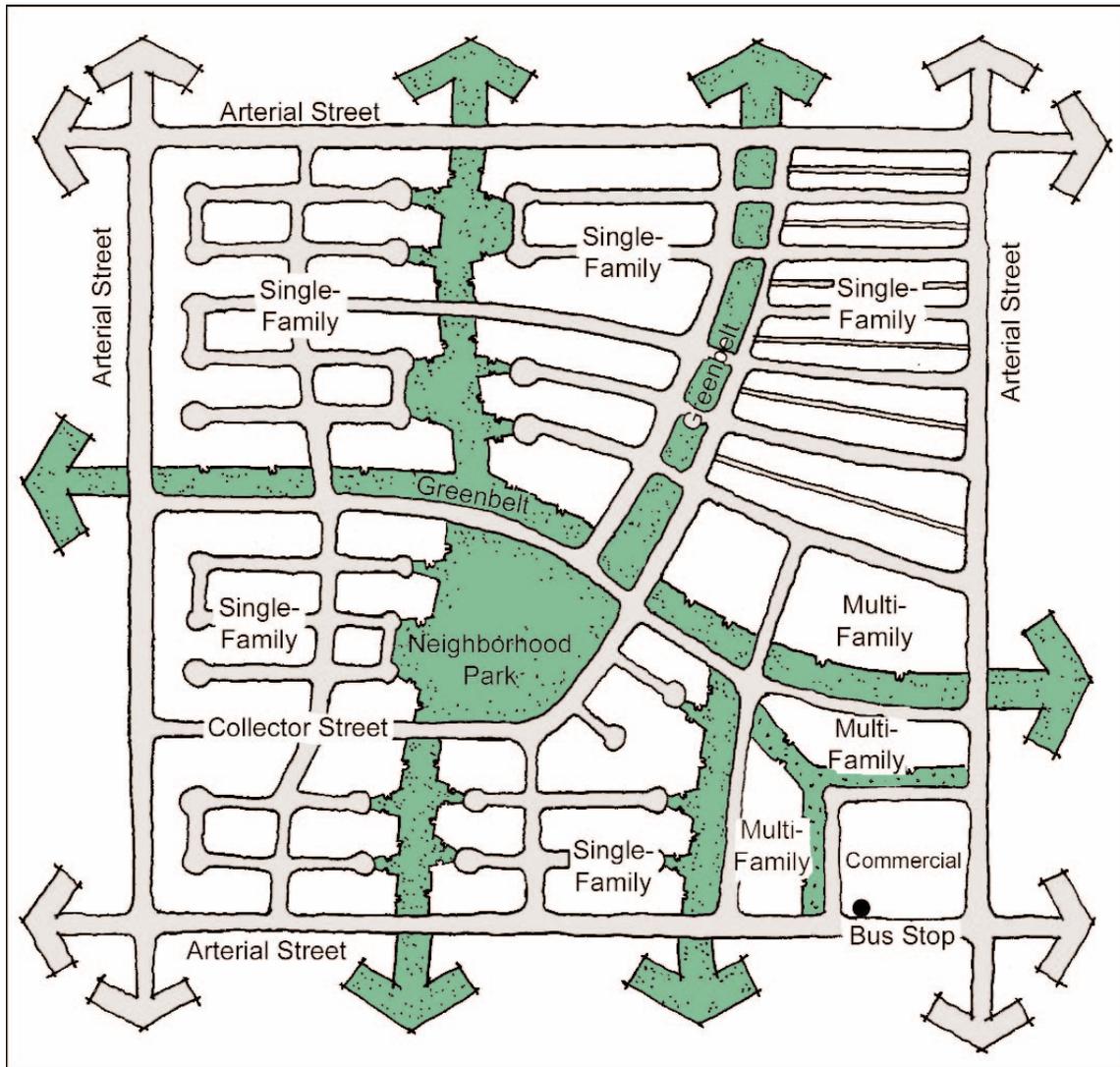
LOW DENSITY RESIDENTIAL: INTERIOR GREENBELTS AS “GRIDS”

For many, the grid system and the use of alleys introduce disadvantages. The grid system does not provide the kind of quiet “play” streets offered by cul-de-sacs. Alleys can be perceived as unsafe or unattractive if not well cared for. A narrow grid plus an alley grid can often lead to as much or more total land devoted to pavement than a more traditional street pattern. Another approach, described here as a “modified grid” can provide pedestrian benefits, while minimizing these concerns. Figure 21 shows how a modified grid might work. An overall framework of arterials and collectors moves auto traffic. Short cul-de-sacs are used for residences to produce a bicycle/pedestrian grid with a central greenbelt spine to carry people to schools and parks, and possibly shopping or transit stops. This approach combines some of the perceived advantages of a “grid” philosophy with those of a “cul-de-sac” philosophy.



Figure 21

Low Density Residential: Interior Greenbelts as "Grids"



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MULTI-FAMILY HOUSING

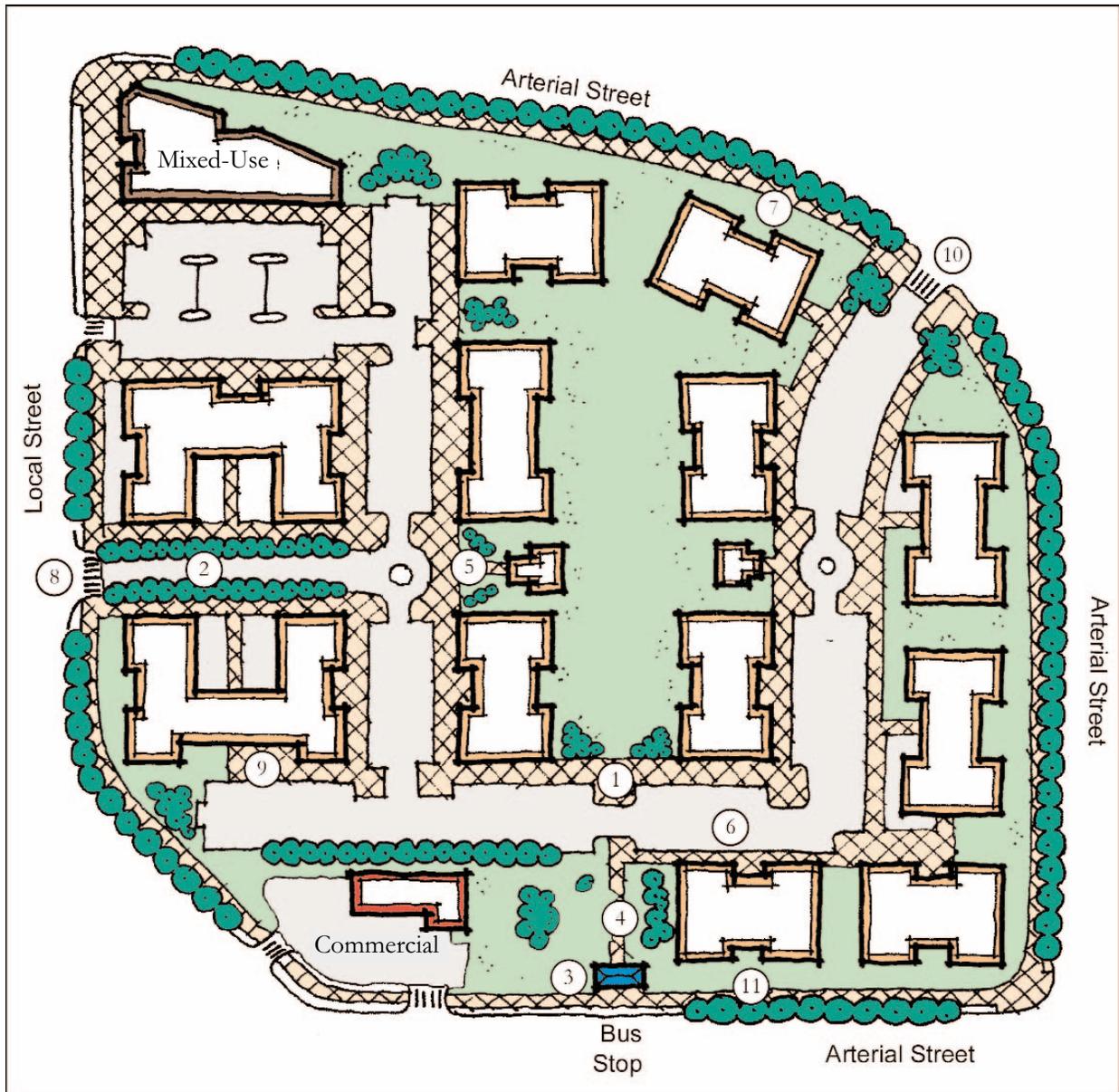
Often, multi-family housing developments are oriented toward parking lots and feature looped interior streets, prohibiting bus service and limiting pedestrian access to bus stops. Many multi-family housing developments also lack interior walkway connections to sidewalks, adjacent activities and bus stops. A transit-compatible site design incorporates local streets and provides walkways throughout the site with connections to adjacent destinations. Orienting development away from parking lots creates a more attractive environment, and providing “tuck-under” or underground parking maximizes opportunities for small parks or public gathering areas on site. (Clearly, this type of parking can be costly and may not be feasible in many projects.) Providing balconies for above-grade units facing the street and designing entry porches for ground floor units with direct access to public streets also contributes to the functionality and livability of multi-family housing.

Specific site design suggestions correspond to the drawing on the adjacent page:

- ① Incorporate walkways throughout multi-family housing sites to provide convenient access to neighborhood stores, bus stops and offices.
- ② Landscape parking lots and local streets to improve the comfort level for pedestrians.
- ③ Site bus stops so that they are accessible to the entire multi-housing development.
- ④ Connect interior walkways to sidewalks on adjacent local and arterial streets.
- ⑤ Incorporate plazas and green space between buildings to encourage interaction and increase walkability.
- ⑥ Locate parking to the rear of buildings away from public view, or in smaller parking areas.
- ⑦ Avoid orienting the front of developments toward parking lots.
- ⑧ Provide local streets for improved access and circulation
- ⑨ Provide safe, convenient pedestrian connections from parking areas to building entries.
- ⑩ Minimize the number of access drives and curb-cuts to parking.
- ⑪ Provide a landscape separation between parking and residential units.

Figure 22

Multi-Family Housing



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NEIGHBORHOOD RETAIL CENTERS

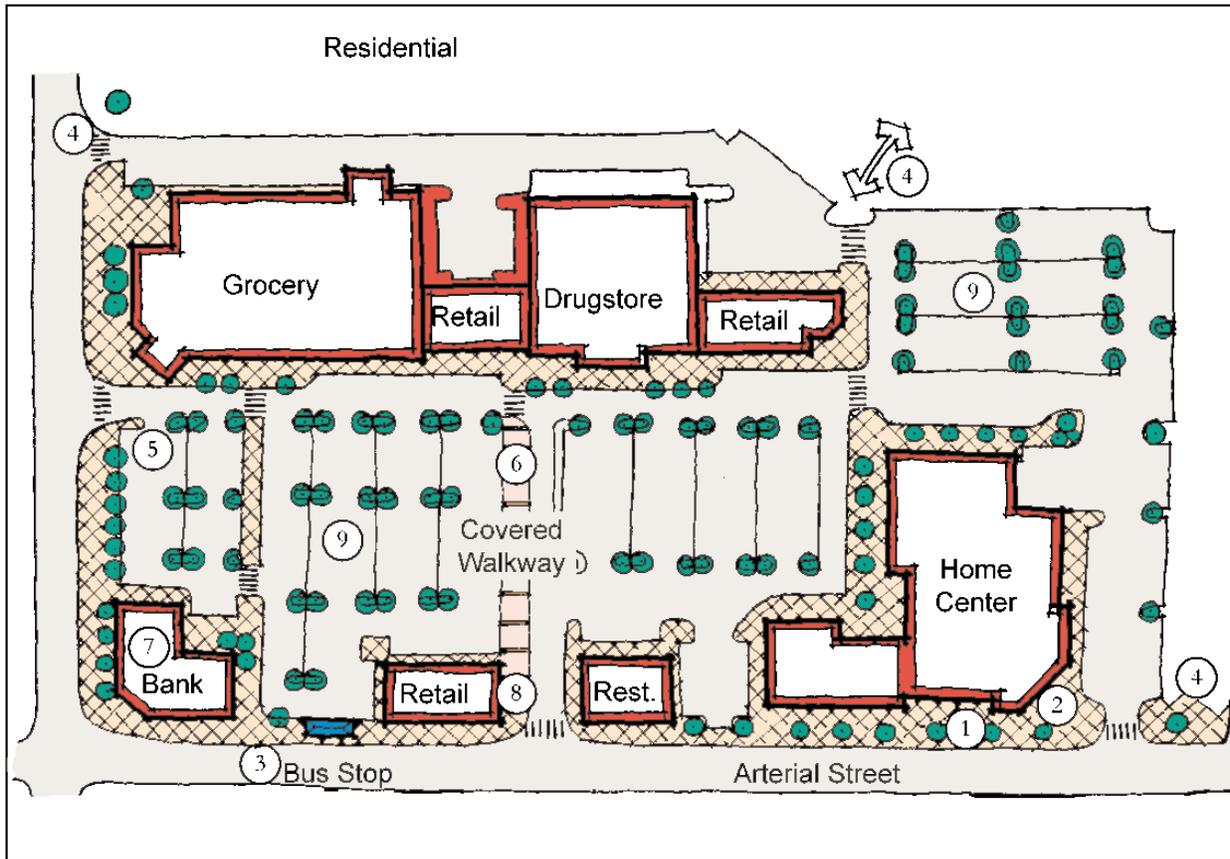
Often, neighborhood retail centers fail to provide convenient access to adjacent residential neighborhoods and lack walkways into and through the site. Expansive setbacks from the street also make many neighborhood retail centers less pedestrian-friendly and reduce their urban design quality. To encourage pedestrian and bus transit access, buildings should be located close to the street and close to bus stops, and should provide interior walkways, perimeter sidewalks, crosswalks and local street connections.

Additional guidelines for neighborhood retail centers correspond to the drawings on the adjacent page:

- 1 Locate buildings along the street for convenient pedestrian access and offer an “urban edge: not a parking lot.”
- 2 Site buildings along wide sidewalks to encourage pedestrian access. Avoid wide, sloping landscaped setbacks between sidewalks and stores that discourage walking.
- 3 Link bus stops to stores with safe, direct and comfortable walkways.
- 4 Provide pedestrian access from surrounding residences.
- 5 Landscape streets and parking areas to invite pedestrian use and to improve urban design aesthetics.
- 6 Provide convenient access to parking via safe walkways.
- 7 Locate free-standing businesses on corners for better pedestrian access.
- 8 Connect interior walkways with perimeter sidewalks.
- 9 Break up parking lots into smaller units to reduce the expanse of pavement.
- 10 Encourage opportunities for mixed use through more flexible zoning approaches.

Figure 23

Neighborhood Retail Centers



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OFFICE/BUSINESS PARKS

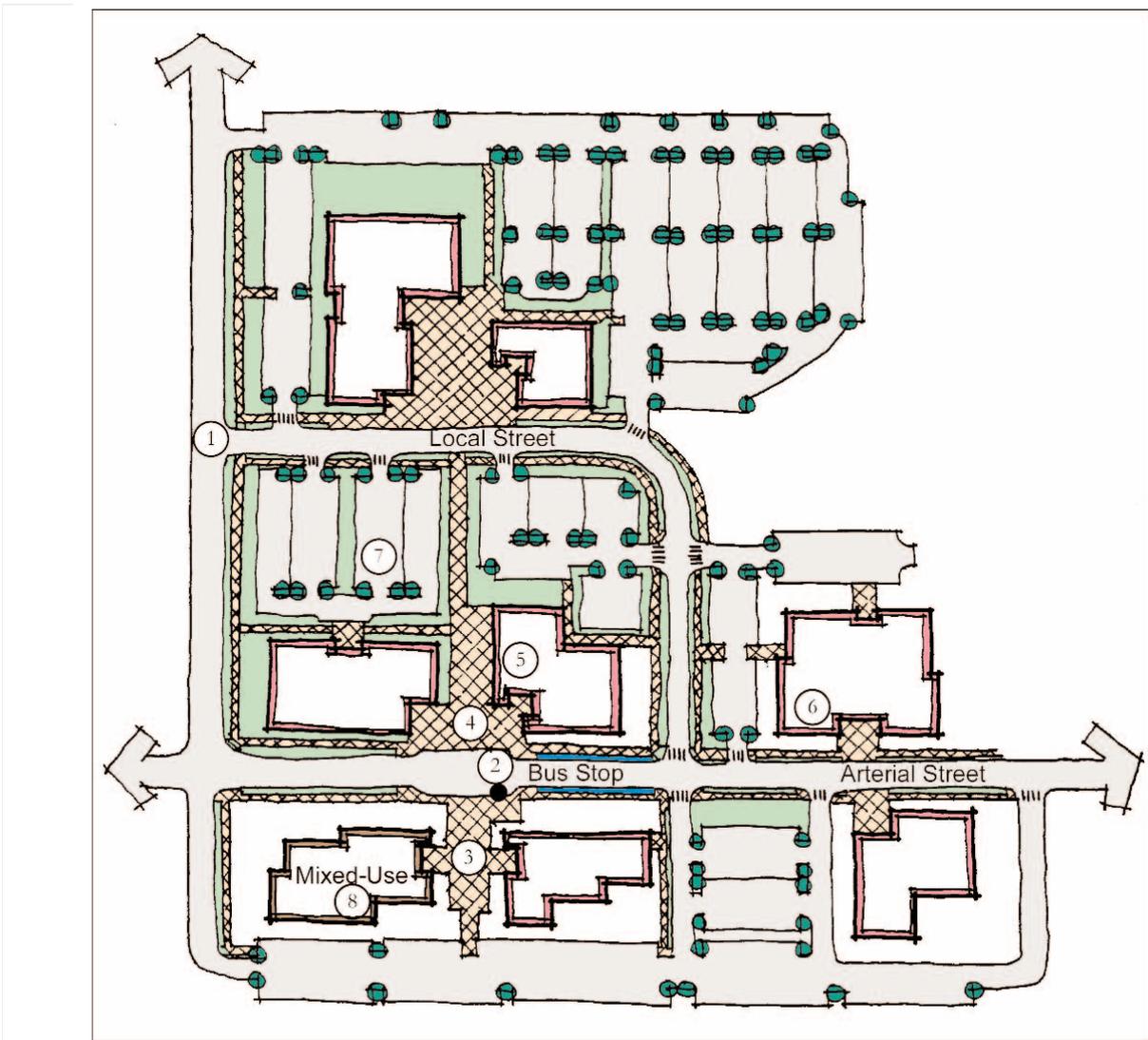
Many industrial parks are designed with dispersed buildings, few through streets and no places for social interaction or gathering. This arrangement makes transit service infeasible and discourages bicycle and pedestrian access. Instead, clustering buildings, orienting them to the street, and incorporating through-streets invite opportunities for alternative transportation. Locating bus stops centrally, within building clusters, also makes bus transit a more appealing option.

More detailed recommendations for business parks correspond to the drawing on the adjacent page:

- ① Provide through-streets to facilitate transit service and to provide alternative routes for automobiles, cyclists and pedestrians.
- ② Locate a bus stop or stops at a central point within the office park complex.
- ③ Incorporate the bus stop into a plaza or mini-park design with a strong relationship to primary building entries.
- ④ Provide continuous walkways and sidewalks between buildings and to the bus stop to allow convenient pedestrian access.
- ⑤ Cluster buildings to reduce walking distances.
- ⑥ Orient buildings to the street. Avoid orienting buildings toward parking lots.
- ⑦ Locate parking and driveways behind buildings or to the sides of building clusters.
- ⑧ Where feasible, include mixed uses such as banks, daycare centers, pocket parks and restaurants to reduce the need to drive off-site during the workday.

Figure 24

Office/Business Parks



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SINGLE OFFICE/LIGHT INDUSTRIAL BUILDING

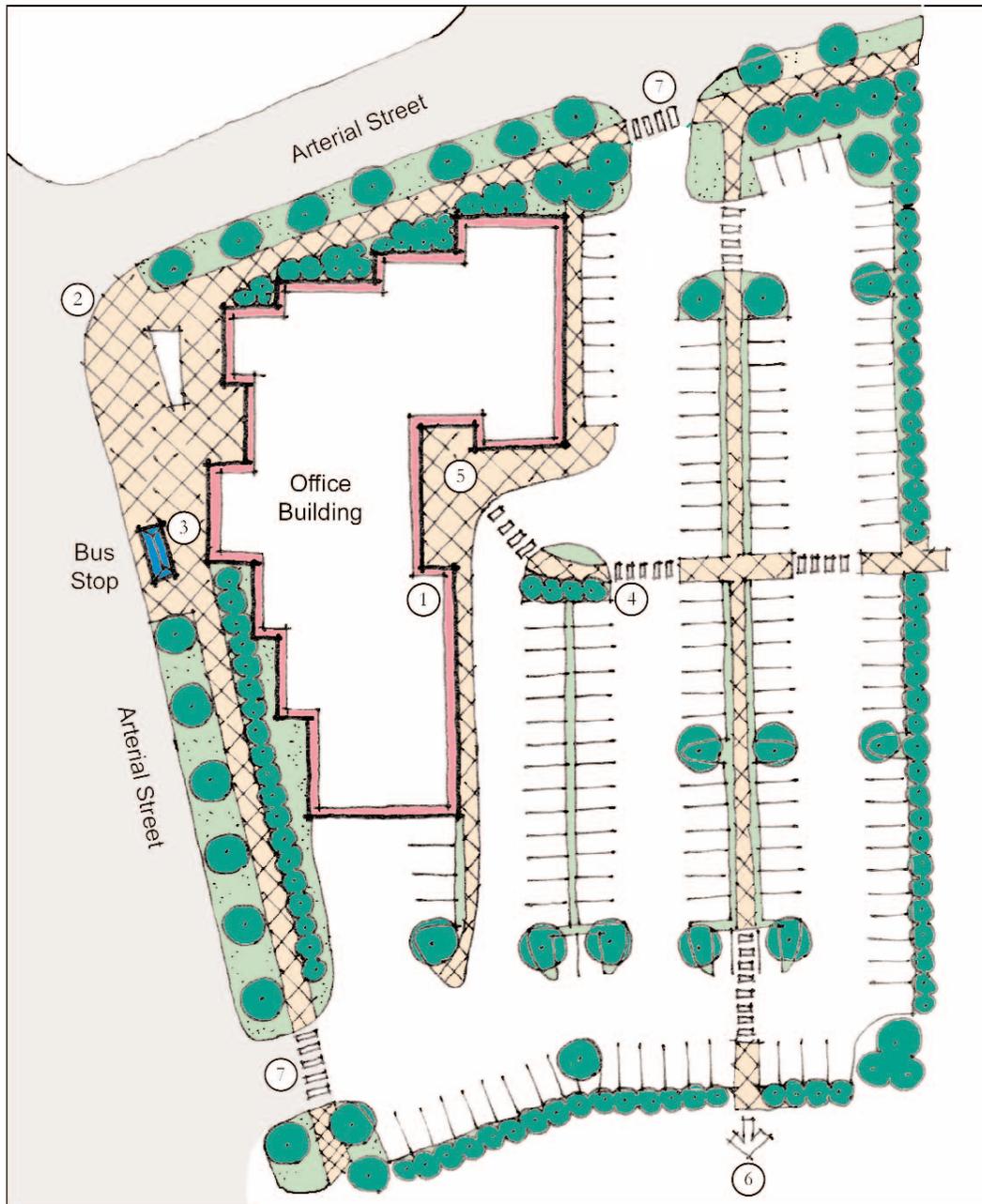
Many stand-alone office buildings are sited away from the street behind large landscapes setbacks and expansive parking lots. Frequently, bus stops are located at inconvenient distances from major office buildings. A more pedestrian and transit-friendly layout locates office buildings closer to the street and close to bus stops with parking tucked behind. Direct walkways connecting offices to parking, perimeter sidewalks and adjacent office parcels ensure safe and convenient access for pedestrians.

Additional guidelines for transit-compatible light industrial buildings correspond to the drawing on the adjacent page:

- ① Locate the building along the street and sidewalk with parking behind to enhance the pedestrian streetscape.
- ② Create a distinct entry at a corner or along a main street.
- ③ Locate the office entry as close to the bus stop as possible.
- ④ Provide landscaped parking lots with clearly delineated, safe and direct walking paths.
- ⑤ Provide plaza or open space near front and rear entries.
- ⑥ Provide linkages to adjoining office parcels.
- ⑦ Locate multiple driveways away from building entries.

Figure 25

Single Office/Light Industrial Building



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TRANSIT HUB/MULTI-MODAL CENTER

A successful transit hub or multi-modal station should be an integral part of the community and commercial center. A multi-modal transit station provides access for diverse modes of transportation, including bus, train, and bicycle. The transit hub should feed into a regional transportation network, and should be centrally located so that it can serve as a commuter park-and-ride lot and transfer center. Higher densities and a mix of uses near the transit hub will provide the most convenient access to employers and residences.

Clearly delineated walkways linking building entrances with transit stops are safe, simple and pedestrian-friendly. A multi-modal center should include walks and bikeways that connect to key destinations in the community. Bicycle storage should be provided to maximize opportunities to combine bus or train transit with bicycle commuting. A transit hub should be viewed as a positive public gathering place; safe, visually-pleasing, well-lighted and comfortable. It needs to become a successful people place to be a successful and well-used transit center.

