



# *Waterford Vision2025*

## *General Plan*

### *Chapter 7 Urban Design*

**2025 Urban Design Vision:** A community that retains its rural small-town flavor with a central downtown surrounded by residential and other types of supporting development; a community whose appearance and overall architectural character promotes and reflects its unique rural setting along the Tuolumne River and its “gateway” status to the recreation areas to the east of the City.

#### **7.1 BACKGROUND & SETTING**

Waterford is a distinctive community, situated on the eastern side of the central San Joaquin Valley on the edge of the Sierra foothills and bordering the Tuolumne River. Waterford originally developed within a series of gridded streets aligned with the rail tracks, framed by the Tuolumne River which courses along the southern boundary of the City. Over the past hundred years or so, Waterford has become a livable, amenable place, with walkable, tree-lined streets, accessible natural areas along the Tuolumne River and surrounded by orchards and farmland. Somewhat removed from major urban growth centers to the west, Waterford combines the qualities of a friendly small town situated at the intersection of two major regional arterials and nestled

---

between the urban centers to the west and recreational resource areas to the east.

This element builds on the positive qualities of Waterford. It introduces policies aimed at protecting the natural resources of the City and enhancing its livability as it progresses into the 21<sup>st</sup> century. It embraces the concept of landscape preservation around the City and, as an extension of the Tuolumne River corridor, encourages the extension of the sense of the landscape into the City. Within the City, the element advances the notion (carried through the entire general plan) of encouraging a hierarchy of mixed-use districts that can create a model of neighborliness and the design of environments that discourage auto dependence and emphasize transit, pedestrian, and bicycle movement.

#### **7.2 THE AHWAHNEE PRINCIPALS**

---

Urban design is not merely a set of urban aesthetic standards but rather encompasses design elements which enhance the livability of the community and promote a “sustainable” urban environment.

**City of Waterford Vision 2025 General Plan Update**  
*Urban Design Chapter 6*

In the context of urban design and development, “sustainable” has been generally defined as building an environmentally and economically sustainable city. A “sustainable city” is a city designed, constructed, and operated to efficiently use natural resources, minimize waste, and to manage and conserve them for the use of present and future generations.

Perhaps a more concise description of a “sustainable city” design policy is contained in the *Ahwahnee Principles* formulated by a group of architects under the auspices of the Local Government Commission in 1991.

The *Ahwahnee Principles* define a community where housing and all the things needed to meet the daily needs of residents are located within walking distance of one another. They call for returning to higher population densities around transit stops to provide the critical mass of people and activities needed to make transit economically viable. The *Ahwahnee Principles* also call for housing which provides places to live for a variety of people within a single neighborhood. They also promote the concept of mixed use and transit-friendly commercial and employment centers.

**7.3 GENERAL PLANNING**  
**CONTEXT** -----

Community design is of critical importance to decisions that are made

regarding general growth and development. Under state law, however, community design is not a mandatory element of a general plan and, where included, frequently has a limited focus.

In Waterford, a different approach has been taken, with community design

taking a key position in the community planning process and establishing principles at the outset for the formulation of this plan element.



**7.3.1 Relationship to Other General Plan Elements**

The Urban Design Element is intended to influence the physical form of the community, and express an urban vision for the future. While other plan elements provide depth in specialized areas, such as transportation, housing, and open space, the Urban Design Element is more comprehensive in scope, and brings together many of the ideas that are discussed in other plan elements.

- x The Land Use Element addresses policies related to the physical extent of urban development; residential, commercial, industrial, and public uses, density and intensity, the creation of neighborhood mixed-use districts, and requirements for special development areas.
- x The Urban Expansion Element addresses the overall direction of growth and expansion of the City in future years and gives guidance to policy makers regarding future

**City of Waterford Vision 2025 General Plan Update**  
*Urban Design Chapter 6*

annexation of land into the City limits.

- x The Transportation Element sets forth the functional characteristics of desired circulation patterns and specifically gives guidance for a greater focus on transit, pedestrian and bicycle movement.
- x The Open Space-Conservation and Sustainable Development elements establish policies related to the integration of natural features within the community, protection of biological resources, and the use of open space for resource protection in new development.

**7.3.2 Application and Scope**

The *Waterford Vision 2025 General Plan* Urban Design Chapter (Element) is intended to provide a broad framework for making incremental decisions on the direction of growth and development. From urban expansion through the design of circulation systems, designation of land use patterns to the review of individual project construction plans, the Urban Design Element contains policies and standards that integrate the City’s goals with respect to

“Neo -Traditional/New Urbanist” approaches to “city building”.

**7.4 URBANDESIGN “VISION”**

Urban design is a grouping of concepts and guidelines which are used to describe the image or character of the City’s environment. In attempting to influence the type, location, and character of both private and public development, urban design policies provide the tools to help create a desirable relationship between the pressures for new development and the pressures for conservation.

The Urban Design Chapter of the *Waterford Vision 2025 General Plan* promotes the “Vision” of Waterford as:

*“A community that retains its rural small-town flavor with a central down-town surrounded by residential and other types of supporting development; a community whose appearance and overall architectural character promotes and reflects its unique rural setting along the Tuolumne River and its “gateway” status to the recreation areas to the east of the City”.*

**7.5 GUIDING PRINCIPLES** —

The following guiding principles provide a basis for the urban design goals and policies of this chapter as well as the subsequent elements of the general plan, in the implementation of the City’s urban design “vision”.

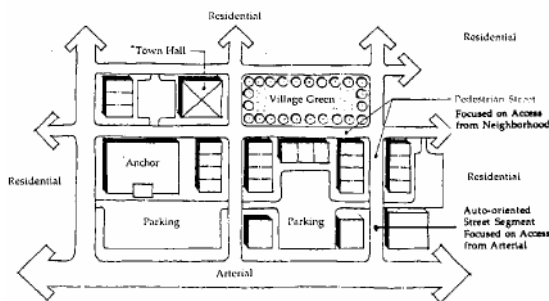


- x **Heighten the sense of the natural landscape.**

The identity of the City, to a great extent, comes from its landscape setting. Plan policies contained within this element, as well as others, strengthen the visual and physical connection between the City and the surrounding landscape.

x **Reinforce the unique identity of Waterford.**

Through purposeful acts of community building at the City’s inception, Waterford developed a strong early identity as a city. The policies of this plan are intended to recognize and strengthen the fundamental elements that contribute to Waterford’s sense of “townness”—the pattern of streets and open spaces, focal points, entries, landmark buildings, and clear edges.



x **Emphasize the role of downtown as the heart of the community.**

Downtown Waterford plays an important role in the social as well as economic well-being of the community. It is the symbolic centerpiece of the community and focus of civic life and social activity. Policies contained within this element provide for preserving and strengthening the role that the downtown plays in the community.

x **Enhance the special qualities of existing neighborhoods and districts.**

Waterford’s residential neighborhoods define, for most residents, the livability and attractiveness of the community as a whole. The individuality and distinct characteristics of the neighborhoods and the quality of life they provide should be maintained and enhanced.

x **Reintegrate transitioning industrial and commercial districts.**

The plan also sets forth policies for transitioning commercial districts to reestablish a more positive relationship with the surrounding City. Policies provide for the infill and revitalization of under-utilized areas and encourage more attractive development.

x **Establish linking elements that provide continuity and connection within the City.**

The plan policies provide for a clear and coherent system of green streets, Tuolumne River walkway, walkways along canal corridors, and linear open spaces that provide continuity and connection through the community. Guidelines emphasize the amenity of these linkages for pedestrians and bicycles, as well as automobiles.

x **Reclaim streets as public space.** Streets comprise the major open spaces of cities and can be among the liveliest and most memorable public places within the community. Plan policies are aimed at balancing the need to facilitate auto circulation and parking with the desire for the street to play an important role in creating a sense of place.

x **Emulate the positive qualities of traditional Waterford neighborhoods in new development.**

Many older neighborhoods are distinguished by a clear organizational pattern, an interconnected network of tree-lined streets, and an attractive housing stock. Plan policies are aimed at building on these elements in new residential neighborhoods.

## **7.6 CITYFORM**

Waterford has long played a role as a service center for the surrounding agricultural landscape and as a focus of trade and commerce along the Tuolumne River and the recreation resource areas in eastern Stanislaus County. This civic role and importance within the region can be heightened through physical improvements to the form, structure, and character of the City and a better definition of City edges and entries.

Historic development patterns of the City create unique challenges to the integration of the City's street system as well as the design, development and redevelopment of its utility infrastructure. The following policies are provided as standards for guiding future urban design decision-making.

### **x Reinforce the compact form of the City.**

Waterford has a relatively compact focus, contained, for the most part, within the "semi-circle" bounded by the MID Main Canal and extending from the historic railroad track right-of-way near downtown to the edge of the diagonally aligned streets which reflect the original railroad town layout and the Tuolumne River corridor to the south. This "semi-circle" roughly circumscribes the outer limits of the traditional downtown area today. The semi-circle does not perfectly describe present or desired future urbanization. The generally semi-circular shape of development is useful as a conceptual diagram, should be heightened to create a stronger sense of both the sense of "place" of the community and its serene landscape setting.

Future urban expansion will be defined by the boundaries formed by the Tuolumne River to the south and Dry Creek to the north. Western expansion limits are not defined by any natural feature but rather by existence of the rich agricultural lands that exist along the City's western boundary. To the east, urban expansion will be defined by the natural habitat areas that exist along the edges of the Modesto Reservoir.



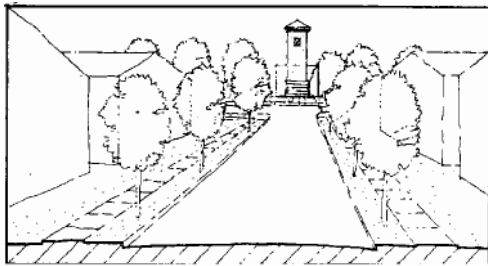
### **x Create a clear definition of the physical extent of the City.**

Sharpening the distinctions between natural and urbanized landscapes contributes to a sense of place. Natural and physical features, such as Highway 132, the Tuolumne River corridor, the irrigation canal system, elevation changes to the east and northeast, orchards and the railroad corridor, as indicated in below, are important elements in creating a clear definition of the physical extent of the City. In the future, portions of Dry Creek, as well as the rolling foothills on the east, the bluff lines on the Tuolumne River to the south, and agricultural lands on the north and west, although not contiguous, will generally define the physical extent of the City.

**x Preserve agricultural lands and open space outside the City's growth boundaries.**

This can be accomplished through cooperation with Stanislaus County, including support of programs and policies, such as transitional uses and buffers along the City's urban boundaries, and large-parcel zoning. One of the ways to reinforce the form of the City is to establish a greenbelt. Particularly on the west side of the City, such a greenbelt or open space system

should be explored. In other areas, appropriate buffers and transitions should be studied and appropriate standards established in the City's zoning ordinance.



**x Emphasize key City entrances.** There are a number of entrances that are important in establishing a sense of arrival and departure in Waterford and in creating a stronger sense of regional identity. They are:

a) The area near the intersection of Highway 132 and Eucalyptus Avenue to the west which roughly defines the City's western limit between urban development and agricultural resource areas.

b) The area near the intersection of the Waterford-Oakdale Highway and Dry Creek which defines the City's northern limits.

c) The area on the south side of the

Waterford-Oakdale Highway near the Tuolumne River Bridge that defines the City's southern urban limits.



d) The area in the vicinity of Highway 132, between the MID Main Canal and the Tuolumne River corridor, that frames the entrance into the City's eastern limits.

**7.7 URBAN GROWTH & DESIGN**

The City of Waterford has gone through several phases of growth and expansion over the years. These phases are reflected in the layout of the City's street system.

Of course, at its earliest phase of development, the City's center was focused on the "ford" across the Tuolumne River located in the vicinity of North Appling Road. Subsequent development was planned along the railroad right-of-way and the older streets in the City were laid out in a grid pattern that reflected the railroad corridor's north-south orientation.

The second stage of development in the City conformed to the east-west alignment of Highway 132 and the

**City of Waterford Vision 2025 General Plan Update**  
*Urban Design Chapter 6*

Modesto Irrigation District canal that formed the early northern boundary of the City.

Subsequent (modern) development has expanded into the surrounding areas in a more or less concentric pattern around the core (historic) City area. At present, the City is bounded by the Tuolumne River to the south and the Modesto Irrigation District (MID) Main Canal to the north.

To complement this “historic” growth pattern, based on the traditional “grid” system of streets, future City expansion is proposed to follow “Neo-Traditional” approaches to urban growth. This approach, which is also referred to as “New Urbanist” design, emphasizes neighborhood character modeled after the traditional “grid” street pattern with alley-ways, that stress “walkability” and pedestrian-friendly design.

**7.7.1 Urban “Neo-Traditional” or  
“New Urbanist” Design**

The *Waterford Design Guidelines* establish a vision for an area expected to contain most growth in Waterford for the next 20 years.

The fundamental building block for the conceptual land use plan and design guidelines is the *Village*, a compact, mixed-use district that will accommodate projected growth, help maintain Waterford's present quality of life, and help ensure its continued economic vitality.

The *Village* design achieves these goals by encouraging pedestrian and transit travel, and by planning for more than single-use, low density developments

that can generate traffic congestion, air pollution, a scarcity of affordable housing, monotonous landscapes, and poor utilization of environmental and land resources.



The Waterford application of the “Neo-Traditional” or “New Urbanist” approach to land use planning is to treat the existing downtown commercial core as the “central core” and radiate residential and other uses from this existing central “core” area.

**7.7.2 Mixed Uses**

“Neo-Traditional” or “New Urbanist” designs promote development of residential, services and employment centers so as to minimize reliance on the automobile to the maximum extent feasible. The “Neo-Traditional” or “New Urbanist” philosophy of land use planning promotes development of a mixed-use plan that promotes the location of commercial, employment, and residential development in relatively close proximity to each other.

The *Mixed-Use* approach to the “Neo-Traditional” or “New Urbanist” planning takes the typical elements of urban growth-retail centers, single family and multifamily housing, roads, and public

services and reorganizes them to form a more efficient and pedestrian-friendly development pattern.

### **7.8 URBAN DESIGN GOALS, POLICIES AND ACTIONS**

The Urban Design Element responds to issues and opportunities identified as a part of the general plan process. The

element is organized to address the following topics identified as important to the character of the city as a whole:

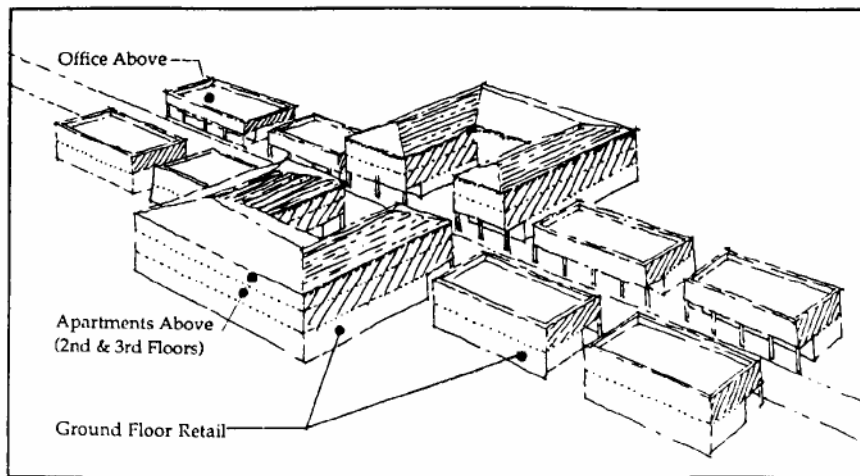
- x City Form
- x Continuity and Connection
- x Neighborhood Conservation x  
Transitioning Districts
- x Large-Scale Commercial and  
Industrial Projects
- x New Residential Neighborhoods x  
Landmarks and Public Art

Consistent with other elements of the plan, this element provides guiding and implementing policies by specific topic area. In addition, accompanying text and diagrams provide additional guidance in an illustrative fashion, indicating how policies may be applied. The diagrams

and descriptive text are conceptual in nature. They are intended to expand upon the intent of the policies, provide examples, and initiate discussion on potential solutions to identified issues.

They are not intended to be used as a specific design solution or as a mandatory requirement of the plan, nor should they be construed as a set of standards to be applied universally. Rather, each image and the text which follows each policy are designed to illustrate possibilities to be considered with more specific studies. The intention of the Urban Design Element is to foster creativity and design excellence within the context of community values, and adopted principles and objectives. Priority is placed on the design of specific buildings, streets, and open spaces that add to the livability and quality of the community as a whole.

In accordance with the above, the City of Waterford has established the following goals, policies and actions relative to urban design.



## 7.8 CITY OF WATERFORD Proposed Urban Design Goals

### Goal Area UD:

#### GOALS

- A Rural Community with a Unique Identity.**
- A Well Defined Urban Center.**
- An Integrated Community-Well Connected.**

#### POLICIES

**UD-1** Promote Urban Continuity & Connection.

**UD-2** Promote Neighborhood Conservation & Development.

**UD-3** Provide for A Vibrant Downtown Center.

**UD-4** Guide the Development of Commercial Strips.

**UD-5** Guide the Development of Large-Scale Commercial & Industrial Projects.

**UD-6** Guide the Development of New Residential Neighborhoods.

**UD-7** Guide Development of Mixed-Use Neighborhood Core Areas.

**UD-8** Promote Urban Landmarks & Public Art.

**UD-9** Utilize Neo -Traditional Design Concepts in Neighborhood Revitalization Programs.

**UD-10** Maintain and Enhance the Unique Community Appearance of Waterford.

### Policy UD-1

#### Promote Urban Continuity & Connection.

Clear and continuous linkages through the community reinforce a sense of community structure and orientation within the urban environment. Within Waterford, there are several existing elements—the railroad corridor, Highway 132, certain streets, the Tuolumne River corridor, and the MID Canal corridors— that can be enhanced and strengthened to provide paths of continuity and connection through the community.

#### *Implementing Actions:*

**UD-1a. *Make improvements to the major corridors traversing the city to heighten their visibility and accessibility.***

The major linear corridors are those that extend into and through the entire City. They primarily include the railroad corridor(“F” Street/Oakdale-Waterford Highway), the River and MID Canal, Tim Bell, Waterford-Oakdale Highway, Highway 132 and Reinway street corridors. These should be improved with streetscape improvements, planting and other treatments within limits of existing development or rights of-way.

**UD-1b. *Design street River Parkway and MID Canal corridor improvements in consideration of their hierarchical role and function within the larger system.*** It is important to visually convey the relative importance of each corridor. For instance, the Tuolumne River Parkway and MID Main Canal should depict prominence within the hierarchy of City water corridors, as does Highway 132 within the system of roadways. These concepts need to be carried forth in the basic elements of civic design so that visual appearance is tied more closely to role within the organization of the City.

**UD-1c. *Extend new street patterns that heighten the sense of the water corridors and***

***that are connected to existing patterns of development.***

The physical patterning of the community can create a stronger orientation to the waterways as well as a framework for new development that provides for higher density neighborhoods. The historic grid pattern was generally aligned to the railroad tracks. New grid patterns do not necessarily need to be composed of straight, parallel streets with a repetitive scale and grain, but can integrate arching, straight and diagonal alignments, with allowances for topography and interruptions caused by the waterways. However, they should open up views and physical access to the water corridor and urban “trail” environments.

***UD-1d. Place restrictions on the overall scale and size of major arterials, so as to avoid creating barriers within the City fabric.***

The overall dimension and treatment of streets greatly influences the character of a city and the nature of uses within it. For instance, limiting the paved dimensions of streets or the number of lanes within residential neighborhoods are effective ways of ensuring that the functions of a street for traffic movement do not exceed the desires of the community for livable, pedestrian-oriented streets. In Waterford, streets do not need to exceed four lanes (not including turn lanes) to fulfill necessary traffic functions. In most cases, a two-lane configuration with a separate turn-lane and controlled access are sufficient to meet the City’s most intense traffic needs.

***UD-1e. Establish special design guidelines for scenic roads.***

Scenic roads are those that have a unique orientation and alignment or are notable for their landscaping and streetscape. Some of the streets which would fall into this category include Highway 132 (east of the Waterford-Oakdale Highway), and the Waterford-Oakdale Highway, to the Dry Creek Bridge. Design guidelines should be developed that build on the unique qualities of these roadway segments.

***UD-1f. Heighten the visual prominence of water corridors which help to establish a sense of orientation and identity within the City.***

Water corridors which traverse the City can be improved to give further identity to the city and create closer ties to the natural landscape. Enhancement of these water corridors can include landscaping and mandatory setbacks for all new development to further contribute to the visual structure and ecological diversity of Waterford.

***UD-1 g. Open up waterways to public view and access.***

The water corridors can be made more visible and accessible by appropriate landscaping, frontage roads, and the alignment of streets which directly lead to water corridors. The possibility of developing waterways with one side more public and active and the other more passive and natural, provides opportunities to achieve both recreational and environmental objectives for these important areas. Such a treatment may not be possible in already developed areas, except through incremental opportunity purchases, but a new standard can be established in areas of new development.

***UD-1h. Extend the amenity value of the waterways.***

The water corridors represent a significant amenity that should be made more public and visible. They should be extended back into the community through a “necklace” of connected open spaces creating a continuity of diverse visual experiences.

***UD-1i. Within the developed core of the City, diminish the barrier effect of the waterways.***

The barrier effect of the waterways within the urbanized City should be lessened and the waterways themselves made more visible and, where possible, accessible. Waterways should become “seams” within the fabric of the City, not separators. Waterways within the existing City are frequently hidden from view and are only visible at periodic crossings due to liability concerns of the City and concerns over public safety. Bridges should be designed for bikes and pedestrians as well as autos and should not hinder pedestrian and bicycle movement beneath them along the water corridor.

***Policy UD-2***

**Promote Neighborhood Conservation & Development.**

From a community design perspective, gracious residential neighborhoods form the fabric of the community and can be one of Waterford’s greatest assets. Many of the older neighborhoods are comprised of finer-grained elements, i.e., tree-lined streets that are open and welcoming in character; block and street patterns that are scaled to the pedestrian and encourage continuity in movement; diversity in lot sizes and housing types; and an orientation to landmarks, open space, and surrounding neighborhoods.

***Implementing Actions:***

***UD-2a. Reinforce the individual character of existing residential neighborhoods and districts.***

Waterford is comprised of a diversity of different neighborhoods and districts. *Districts can be defined as larger portions of the City or non-residential areas distinguished by similar characteristics in use or intensity of use.* Generally, neighborhoods have similar qualities, such as geographic location, physical characteristics, or clear boundaries. They may encompass several blocks and be distinguished by housing of a similar age, style, or type, or a focus on a specific community resource (waterway, school, retail center, etc), or edge conditions (highway, waterway, change in housing, etc.). The distinctions between neighborhoods and districts should be reinforced and programs established for neighborhood conservation and enhancement.

***UD-2b. Encourage neighborhood rehabilitation and improvement.***

Some of Waterford’s neighborhoods are nearing a century in age—particularly those adjacent to downtown and associated with the first and second plattings of the City. While the scale, grain and pattern of these neighborhoods can be emulated, the maturity and abundance of street trees, detailing, use of materials and variety of house types that are unique to their era, and the lived-in appeal make it more difficult to replicate in new development. In some cases, these established neighborhoods are in need of improvement and reinvestment to continue to maintain the same degree of attractiveness and livability over the next century as they have in the past. This includes public actions, such as street or park improvements, as well as private actions related to building rehabilitation and renovation.

***UD-2c. Protect and enhance the urban forest that reinforces the image and identity of the community and its older neighborhoods.***

Waterford’s older neighborhoods have a special identity, gained to a great extent from a canopy of mature trees that contrasts with the open fields and foothills and ameliorates

the influence of the climate in hot summer months. While additions to the urban forest are important, it is equally important to protect and enhance the existing resource as it ages over time.

**UD-2d. Encourage positive transitions in scale and character where new development and extensive expansions of existing buildings are proposed.**

The character of a neighborhood comes from the large-scale patterns of streets, house location and orientation, landscaping, and front yard setbacks and garage locations, but it is also influenced by the relationships of adjoining residences to one another. When neighborhoods begin to be “infilled” or redeveloped with parcels of a much higher density or scale, it is important to ensure that the overall character is not destroyed. Specific attention needs to be placed on proposed parcel sizes, building footprint, heights, relationships to the street, and linkages to the surrounding neighborhood by foot.

**Policy UD-3**

**Provide for A Vibrant Downtown Center.**

Waterford’s downtown provides a focus for the community and is the civic and cultural center of the City. The following policies are aimed at reinforcing the role of the downtown in community life and as a vital, people-oriented place.

**Implementing Actions:**

**UD-3a. Reinforce the physical framework which defines the downtown district.** There are a number of key elements which help to physically define the downtown as a district. Downtown is framed by Main Street to the north, and the Tuolumne River to the south. In addition, “F” and “D” Streets frame the downtown on the west and east. These elements should be more prominent within the downtown, and more positive relationships (in terms of activity) should be developed. The intersection “E” Street & Main Street should be the major downtown intersection capitalizing on the cultural aspects of the “Library & Learning Center”. The Fire Department can be modified to contribute more positively to the street scene and present a more unified, reinforced theme. This intersection should present a public open space for small community events which will encourage movement into the downtown on off-hours.

**UD-3b. Encourage new development that is urban in scale, treatment, and character.**

New development should reflect in scale, character and pedestrian orientation the urban traditions of downtown. Lot sizes should be maintained at fifty-foot widths and building heights should respect context. Traditional store & office fronts should be utilized which further reinforce the “historic” nature of the part of Waterford. Traditional materials will further enhance this effect.

**UD-3c. Encourage the preservation and enhancement of buildings of special historic and/or architectural interest.**

Downtown has a concentration of buildings and landscapes of historic. The downtown historic character contributes greatly to the sense of place, and efforts should be made to identify, preserve, and enhance this image. Efforts should be made to encourage owners to maintain these buildings and landscapes, especially with respect to their historic elements.

**UD-3d. Maintain and enhance a strong pedestrian scale and orientation within the downtown through the design of buildings and streets.**

Pedestrian-scale signage and pedestrian lighting, continuous street trees, wide sidewalks, canopies, bicycle parking areas, open areas, benches, public art, and continuity of ground floor activity are among the elements to be emphasized in reinforcing the pedestrian character of downtown. In addition, such measures as build-to lines, restrictions on surface parking, curb cut limitations, and minimum building heights are useful in defining the “wall” of the street and in framing the activities which happen in public spaces. Specific design guidelines should be developed to define approaches best suited to downtown. *Traffic lighting and pedestrian lighting should be separate systems which serve the separate needs. The pedestrian lighting can be lower and warmer and should include power outlets for “street events”* Pedestrian crosswalks of differential material should be utilized in the core area.

**UD-3e. Define Waterford’s “Downtown”.**

Through comprehensive planning to establish a clear vision and specific direction for the downtown, identify public projects and funding. *Public process should be initiated to determine projects of priority and budget resources to complete these projects.* **UD-3f.**

**Encourage a lively streetscape environment with buildings and activities oriented to the street and sidewalk areas at ground level.**

Buildings should be encouraged to incorporate ground floor treatments of interest to the pedestrian, including, for example, the use of large windows, tall ground floor pedestrian entrances, canopies, arcades, and sidewalk cafes. The feasibility of establishing greater access and use of public rights-of-way in the downtown area should be explored. *Public parking should be encouraged within ½ block of the “E” Street corridor with easy pedestrian access to the street. A public open space will allow a variety of “of-hour” activities and provide a “landmark” site.*

**UD-3g. Maintain the scale and fine-grained fabric of the downtown.**

The block and parcel sizes of development in the downtown help create a pedestrian environment that is attractive to visitors and residents alike. *The traditional lot sizes should be respected to maintain the “rhythm” typical of the historic fabric, even if within the same building’s frontage. Lot divisions in commercial areas should be considered only as part of a complete development proposal which includes construction of new commercial space.*

**UD-3h. Establish a more positive relationship to the Tuolumne River near the downtown area.**

Specific opportunities exist in the downtown for reorienting development *which promotes “vistas” and pedestrian access* to the river. Rather than turning away from the river and locating parking lots and storage areas along it, cafes, plazas and activities, which focus on this resource and create active public space, should be encouraged *above the bluff of the river course.*

**UD-3i. Improve the physical linkages to the Tuolumne River Parkway through development of special pedestrian street crossings of Highway 132, urban trails, and other bicycle and pedestrian improvements.**

*Highway 132 is a physical barrier to this goal and efforts should be made to minimize the effects of this barrier. Special crossings with well-lit pedestrian cross-walks and*

**City of Waterford Vision 2025 General Plan Update**  
*Urban Design Chapter 6*

*pavement flashers may provide greater safety. Once the “River Park” is accessed a trail system should be developed which promotes pedestrian or bicycle connection between the “downtown” area and the residential areas to the east.*

The future development of the downtown government center, extended campus education center, and cultural facilities will become major activity areas which support the downtown. Linkages to the downtown facilities should be expanded for pedestrians and bicyclists so that the downtown continues to benefit from the patronage of the downtown community and surrounding neighborhoods.

**UD-3j. Encourage special events, festivities and celebrations within streets and public spaces.**

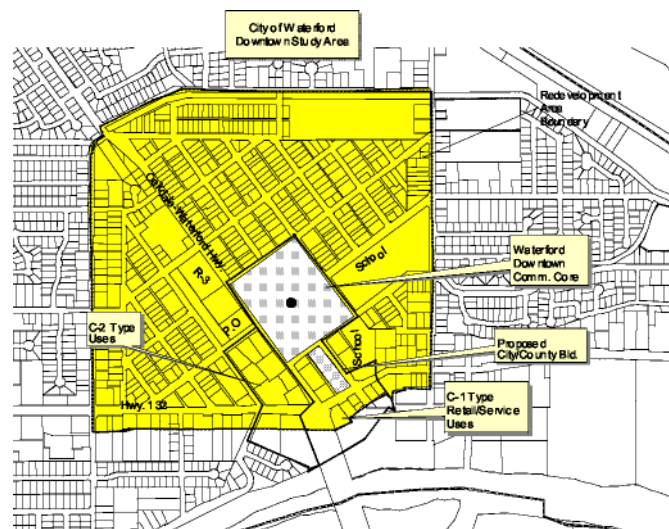
Streets and other public spaces within the downtown should be designed and programmed so that they can be utilized for seasonal celebrations and special day and nighttime events. *Establishment of a “Business Improvement District” may provide a means of funding this activity.* Cultural arts and special events programming and the ongoing management and maintenance of public spaces (including streets) can possibly be guided by the Fine Arts Commission, or other volunteer and City staff efforts. These activities will help to provide an additional attraction within the downtown.

***UD-3k. Provide visible landmarks to enhance the “Sense of place” and orient the community to the downtown features.***

*These may include plazas, a clock element, arches, kiosk and the like. These can be publicly funded and will contribute to the overall understanding of the definition of the core “downtown” area..*

***UD-3l. Encourage a sense of place with a consistent theme of street furniture.***

*Benches, ornamental fences, signage, trellises, news stands and the like should reflect a constant theme.*



***Policy UD-4***

**Guide the Development of Commercial Strips.**

Several commercial strip developments within Waterford are relatively small and auto-oriented “mini-malls”. With the expansion of retail developments elsewhere, some will experience difficulty in attracting and keeping tenants. As uses begin to change along the City’s arterials there may be opportunities for infill development incorporating a broader mix of uses.

***Implementing Actions:***

**UD-4a. Support beautification of Waterford’s commercial strip development along Highway 132.**

Commercial strip development will be limited in the future. However, the viability and physical condition of existing strip development continues to be a concern. In planning for the long-range future, it is important that provisions be made to improve the overall appearance of the streets and the commercial projects which they support. These strips, especially those along Highway 132, become the most visible and memorable part of our City. Guidance is needed to realize incremental change and improvement over time. Potential treatments could include additional landscaping and street trees, adding or widening sidewalks, building the sidewalks in key locations providing pedestrian-scale lighting, and orienting buildings to the street.

**UD-4b. Encourage infill and adaptive reuse of transitioning commercial developments.**

Many commercial projects in cities experience a transition as a result of changing lifestyles, competing projects and developments, purchasing patterns, the distribution of merchandise, and innovations in transportation and communication. As these changes occur, opportunities for new uses within existing buildings (i.e. adaptive reuse) are created. The typical mini-mall development is oriented to the street with parking in front. Future opportunities may be to reorient development and provide for new uses which can more fully contribute to the vitality, attractiveness and overall viability of the area. Infill development should result in a more positive orientation to the street, with the emphasis on punctuating important intersections, with taller buildings and wider sidewalks and screening parking areas generally from view of the street.

***Policy UD-5***

**Guide the Development of Large-Scale Commercial & Industrial Projects.**

Commercial and industrial projects have increased in size and scale over time, with buildings in some projects exceeding several hundred thousand square feet. In Waterford, more than one million square feet of commercial space has been added to the City’s inventory over the past six or seven years, much of which is located on sites greater than 20 acres in size. These large-scale, single-use projects present some special challenges to design. The following policies are aimed at creating commercial and industrial projects that relate more positively to the surrounding context, are of a scale and character that is attractive and accessible to pedestrians and bicyclists as well as motorists, and which

allow for intensification and diversification to occur over time.

***Implementing Actions:***

**UD-5a. Encourage site and building design to respond to the context and potential linkages to surrounding areas.**

A sensitive integration of large-scale projects should be encouraged by master planning larger districts; designing for pedestrian, bike and transit access directly from streets and surrounding areas; carefully addressing issues of scale and massing; respecting view corridors and vistas; integrating community and cultural uses; and achieving higher standards for environmental quality through innovative storm drainage and planting design.

**UD-5b. Encourage consideration of pedestrian and bicycle access in new commercial and industrial projects.**

New commercial and industrial projects should not be designed exclusively for the convenience of motorists, but rather, approaches that consider the needs of pedestrians and bicyclists, as well as those arriving by transit, should be a part of each project. While this may not be considered important today, by building in flexibility future opportunities will not be foreclosed.

**UD-5c. Encourage a human scale in the design of large-scale projects.**

The perceived overall size of large projects should be mitigated to the extent possible through, for example, sensitive massing, appropriate scaling of building facades, articulation and organization of buildings, sensitivity in the use of color and materials, and the use of landscape screening.

**UD-5d. Encourage the use of high quality materials and finishes in buildings.**

Discourage the use of metal buildings unless they utilize wood, stucco, masonry concrete or stucco on all surfaces with public exposure.

**UD-5e. Encourage innovative site design and treatment of surface parking areas.**

Surface parking areas should be organized and treated in such a fashion so as to avoid the appearance of a “sea of asphalt.” Landscaping should meet or exceed, if possible, a 50 percent shading requirement, with large trees planted throughout the parking area as well as along the street and sidewalks. The use of porous paving and the integration of drainage features should be encouraged for reasons of environmental quality and to improve the visual appearance of parking areas, which are often more intrusive than the buildings they are intended to serve.

**UD-5f. Encourage infill and intensification over time.**

Infill and intensification of existing projects should be encouraged to achieve a greater mix and intensity of uses. Site planning for large commercial projects should anticipate the potential for future structured and shared parking as well as convenient and effective transit service that would facilitate intensification and help to create focal points of activity.

**UD-5g. Encourage simple design in consideration of future adaptation to new uses.**

Commercial and industrial uses are rapidly undergoing change. It is important that investments into new facilities consider potential future adaptations to new uses to the extent feasible.

**UD-5h. Incorporate design features that foster a sense of security.**

Implement *Crime Prevention Through Environmental Design* (CPTED) standards as an

element in the project design review process to be applied to subdivision and site plan review, building, and improvement planning. (See Urban Design Section 7.9)

***Policy UD-6***

**Guide the Development of New Residential Neighborhoods.**

New residential neighborhoods will be formed as Waterford continues to grow and expand over the next twenty to thirty years. These neighborhoods should be designed so that they build on the positive qualities of existing Waterford neighborhoods and districts with strong physical and visual linkages to surrounding areas. To do so, special care needs to be taken in the design of:

- x Streets and entries
- x Development patterns
- x Development increment or scale (blocks, neighborhoods, districts) x
- Mixing of activities and densities
- x Small-Lot Housing
- x Buildings

***Implementing Actions:***

**UD-6a. Create new neighborhoods that have a human scale and are oriented to the pedestrian.**

Neighborhoods with a pedestrian scale are those where the length of blocks is not too long (e.g. not greater than 400 feet), streets are not excessively wide, houses front onto the streets with gracious transitions from indoor to outdoor spaces, and pedestrians can walk protected from traffic and the sun in summer months by a continuous canopy of trees.

**UD-6b. Establish clear and distinctive neighborhood edges, organized around larger streets and natural features such as streams or creeks.**

As with the City as a whole, it is important to give definition to individual neighborhoods by establishing clear and distinct edges and clustering neighborhoods within larger districts organized around schools, parks, and other community facilities.

**UD-6c. Mark major entries to neighborhoods, but discourage the use of high walls and gated entries which isolate areas from one another and create an unfriendly appearance.**

Major entries to neighborhoods should be recognized through the use of monuments, gateways, and other such elements incorporated within the broader streetscape. However, these should appear to be welcoming in nature and not convey the image of an exclusive district, set apart and isolated from other parts of town.

**UD-6d. Establish a central focus within each neighborhood.**

The mixed-use neighborhood core is an important element in providing an activity center to each neighborhood; they should be located in a geographically central position, combining activities that are both publicly oriented and commercial in nature. **UD-6e. Encourage a fine-grained and integrated pattern of streets that provides continuity, focus, diversity, and a human scale.**

The grid pattern is characteristic of older areas of Waterford and works well as a basic

pattern, providing continuity and clarity of structure. Diversity and complexity can be added to this basic fabric with the introduction of diagonal, axial and curvilinear patterns to emphasize special places and focal points.

**UD-6f. Encourage the continuity of streets between neighborhoods.**

To increase the accessibility and connectedness of neighborhoods, and to support pedestrian as well as vehicular movement, block lengths should be limited (e.g., to 400 feet) and four-way intersections encouraged.

**UD-6g. Orient neighborhoods and individual residential and commercial buildings positively to the street, not away from it.**

Innovative approaches to the need for privacy and noise protection are needed, without resorting to the conventional solution of high walls. For instance, along major arterials broad setbacks and alleys or frontage roads should be considered instead of high walls to provide protected residential areas that are open and accessible to all.

**UD-6h. Establish a hierarchy of streets, open spaces, and community buildings that can be used to help provide structure and orientation to the neighborhoods and districts.**

A differentiated hierarchy of elements (parks, open spaces, waterways, streets) should be carefully conceived as a part of neighborhood design.

**UD-6i. Design streets with a priority on neighborhood structure and pedestrian scale.**

To create more attractive and meaningful street environments, the following should be encouraged:

- x Pavement widths (curb-to-curb) to the minimum necessary.
- x Continuous and consistent street tree planting adjacent to the curb.
- x Continuous, unbroken curb lengths.
- x Minimized use of “rolled-curbs” except in places where vehicular access is to be encouraged or permitted.

In addition, alley-way may be considered as part of a comprehensively designed pattern of streets.

**UD-6j. Integrate special features as landmarks to heighten a sense of orientation within new residential neighborhoods.**

Waterford has an abundance of unique natural features surrounding and within the City, such as waterways, remnant orchards, heritage trees, and terrain features (bluffs). These should be incorporated in a positive fashion with development to heighten an understanding and appreciation of the landscape and to help establish a sense of place.

**UD-6k. Encourage tree planting and consider adopting a heritage tree preservation and maintenance program.**

Landscaping is one of the most visible elements of residential neighborhoods, adding to their amenity and perceived value. While trees and understory vegetation would vary depending upon the site and soil conditions, planting programs should be encouraged. **UD-**

**6l. As part of the planned development process, encourage the design of buildings that are oriented to the pedestrian and create positive transitions to the street.**

Porches, stoops, windows facing the street, landscaping, and slight grade transitions within the yard space help to create positive transitions between indoor and outdoor,

public and private spaces. Garages should not dominate the street space, nor the front elevation of residential buildings.

**UD-6m. Establish higher standards for small-lot design in projects approved through the planned development process.**

Residential lots of 5,000 square feet or less have become increasingly commonplace in California, in part as a result of higher land costs and the need to create more affordable housing. However, in general, smaller lots have a greater need to address design issues, especially related to garage location and treatment and the provision of open space. With reduced lot size, there is an increased need for community open space.

**UD-6n. Encourage creativity and high quality in the design of residential buildings in projects approved through the planned development process.**

To be successful, neighborhoods need to be designed to age gracefully. Durable building materials and high standards of construction should be incorporated, not only for longevity, but also to reduce the overall maintenance costs for residents.

**UD-6o. Encourage the use of distinctive architectural features in projects approved through the planned development process.**

Windows, doors, chimneys, and other such elements provide articulation to building facades and reveal internal organization.

**UD-6p. Discourage the repetitive feel of new development while providing for design continuity in projects approved through the planned development process.** Diversity in the color, massing, and scale of residential buildings is desirable to avoid the feeling of a monotonous tract development. At the same time, some level of continuity is needed to better define the public realm related to landscape treatment, building orientation, front yard spaces, and the use of fences and articulated entries.

**UD-6q. Encourage some diversity in parcel and house sizes, but with careful transitions between densities in projects approved through the planned development process.**

Where parcels change dramatically in size, special care should be taken to provide for privacy and to maintain some visual continuity along the street.

**UD-6r. Ensure that multiple-family residential development is designed with a street and pedestrian orientation.**

Multiple-family dwellings should be oriented to the street and linked to surrounding neighborhoods, with usable and meaningful open spaces for residents.

**UD-6s. Design for greater resident surveillance and visibility of public and semi-public places.**

This can be achieved by: placing windows so that they view onto yards, corridors, entrances, streets, and other public and semi-public places; providing for landscaping that does not obscure visibility to public areas; providing for well-lighted streets, entrances and house numbers and, in multi-family development, lighted and windowed stairwells where possible. Porches, stoops, and other elements that provide a place to comfortably linger will also help to provide “eyes on the street,” helping to maintain a sense of security within neighborhoods.

***Policy UD-7***

**Guide Development of Mixed-Use Neighborhood Core Areas.**

Neighborhoods should be developed around a central place that is publicly oriented and conducive to social gathering and meeting. The cores are conceived of as mixed-use centers that provide service and amenity at the neighborhood and district level, and may consist of community facilities such as parks and schools, higher density residential development, or small-scale retail uses. Within these areas, emphasis should be placed on achieving a fine-grain mix of uses, incorporating open space and recreational facilities for amenity, and creating appropriate transitions between uses and densities.

***Implementing Actions:***

**UD-7a. Locate mixed-use neighborhood cores centrally within neighborhoods**

A neighborhood “core” serves the immediate residential area and is closely tied to the framework of neighborhood parks, playgrounds and community facilities that support the structure of a neighborhood. The location of these neighborhood centers is important so that they can serve all parts of the neighborhood within an easy walking distance and reinforce pedestrian and bicycle routes.

**UD-7b. Where appropriate and feasible, focus the neighborhood cores around neighborhood parks and open spaces.**

The neighborhood core uses should be designed so that they are organized around publicly-oriented uses and open spaces to increase their accessibility and sense of focus. **UD-7c.**

**Provide for the development of publicly-oriented activities within the mixed-use neighborhood cores**

A variety of public and private uses, as well community facilities, such as child care services, meeting halls, post offices, medical support, and recreational facilities, should be encouraged to locate in the mixed-use cores to broaden their role and function and to attract a greater number of people who can use them to shop for daily needs as well as to socialize, recreate, meet and gather.

**UD-7d. Ensure that the scale and character of development does not overwhelm the surrounding neighborhood.**

These neighborhood centers should be designed for a higher density than their surroundings and provide for an innovative mix of uses, but with a fine-grained pedestrian scale and positively integrated within the surrounding neighborhood.

**UD-7e. Encourage the location of parking areas in a manner that does not detract from the pedestrian environment.**

Parking areas must be carefully planned and configured within the neighborhood cores to balance a vital pedestrian environment with automobile convenience. Parking areas should be:

- x Broken up into smaller increments by landscaping and connected to sidewalks through clear pedestrian connections;
- x Located away from pedestrian activity areas and focal uses (i.e., parks and open space);
- x Sized to take advantage of shared parking opportunities;

- x Landscaped to achieve a 50 percent shading at tree maturity; and
- x Buffered from adjacent uses through the use of low walls and hedges.

**UD-7f. Establish build-to lines and require buildings to front on the primary street(s).**

This would promote a stronger pedestrian orientation to the street and provide opportunities for more public active uses to occur within sidewalk areas.

**UD-7g. Promote set-back areas for commercial buildings where outdoor uses can be conducted.**

Such uses may include community promotions and special events, outdoor dining, outdoor bazaars, and sales of new goods and handcrafted items.

**UD-7h. Encourage the development of seasonal or temporal events which attract a concentration of activities in selected areas of the City.**

Produce or specialty markets, neighborhood fairs, and seasonal celebrations have grown in popularity throughout the country, and they may provide a way of further enlivening the mixed-use neighborhood core. These should be carefully planned to enhance, not take away from, future retail activities in the mixed-use cores.

***Policy UD-8***

**Promote Urban Landmark Public Art.**

Landmarks and public art are important elements that can be used to provide focus and structure within the City and, at the same time, give greater meaning to the urban experience. The following policies place emphasis on utilizing landmarks and public art to heighten the sense of the City, its visible structure, and cultural legacy.

***Implementing Actions:***

**UD-8a. Identify locations for new landmarks at key places within the City fabric.**

These key places may include City entrances, along open space corridors, where street grids meet, or within the park system. Landmarks should be located within public spaces and associated with community uses (including places of worship), and designed as focal points in the structure of the City.

**UD-8b. Encourage the development of cultural and arts facilities in the downtown.**

There are several historic buildings that are presently within the City downtown area that might be identified for potential reuse as cultural, arts, and theatrical facilities.

**UD-8c. Encourage the development of cultural and art facilities within neighborhoods.**

The role of the mixed-use neighborhood cores can be broadened and made more meaningful through the careful siting and design of cultural, arts, and community facilities.

**UD-8d. Identify key places for a broad range of public art.**

Public art should generally be placed in areas that are public in nature and where consideration is given to their proper viewing and experience. Such places may include public parks, river greenways, schools and educational facilities, City Hall, and civic or community facilities.

***Policy UD-9***

**Utilize Neo-Traditional Design Concepts in Neighborhood Revitalization Programs.**

Neo-Traditional development policies and principles result in improved neighborhood environments, reduced traffic congestion, and better and more cost effective community service delivery systems. Although existing neighborhoods throughout Waterford contain some of the elements of the Neo-Traditional design, some service and infrastructure improvements could enhance these neighborhoods. Through the use of the modified zoning and development codes, existing neighborhoods could be revitalized utilizing Neo-Traditional design policies, programs and standards.

***Implementing Actions:***

***UD-9a. Evaluate public transit alternatives and service levels within existing neighborhoods.***

Based on existing population and service centers, locate optimum public transportation service routes, park and ride facilities, transit stops, etc. Through the Specific Plan or other appropriate planning technique, develop a program for developing necessary public transit support facilities within existing neighborhoods throughout Waterford. ***UD-9b. Identify needed neighborhood level public and quasi-public service facilities within existing neighborhoods.***

Develop a plan and program for the development of public and quasi-public facilities which should be located in the vicinity of existing or planned Core Commercial service centers.

***UD-9c. Apply Neo-Traditional design policies to Waterford's older neighborhoods with ally access.***

Develop a plan and program for the improvement of the City's older neighborhoods with alley-ways, and implement development standards that facilitate the application of Neo-Traditional design applications within these neighborhoods.

***Policy UD-10***

**Maintain and Enhance the Unique Community Appearance of Waterford.**

By virtue of its location, set apart from other urban areas by several miles of open farmland, orchards and pasture land, the community of Waterford occupies a unique character as a compact urban settlement.

***Implementing Actions:***

***UD-10a. Encourage joint City and County cooperation in establishing land use and development standards along all major gateways to the City.***

Highway 132 and the Waterford-Oakdale Highway are important entry points into the Waterford urban area. Scattered and unsightly development along these entry points detracts from the overall positive appearance of the City. To a large extent, these entry corridors are subject to development rules and regulations administered by Stanislaus

County. Working in cooperation with the County, the City shall propose development standards for these City entrances and outline a strategy for implementation.

**UD-10b. Discourage scattered development patterns along major entrances to the City, such as along Highway 132 and the Waterford-Oakdale Highway.** Support County efforts to limit non-agricultural uses along these corridors. **UD-10c. Discourage the visual monotony along major streets created by designs which use uninterrupted walls or fences with little or no landscaping.**

Where it is necessary to develop fences or walls as visual screens or sound barriers, encourage the use of earth berms and landscape techniques to minimize visual monotony. Fences and walls shall be landscaped and adequate measures shall be imposed on construction permits to ensure that long-term landscape maintenance is implemented.

**UD-10d. Encourage the development of methods to require acceptable levels of landscaping for new development and for landscaping maintenance in highly visible areas of the community.**

Landscape designs shall incorporate water conservation and low maintenance features.

**UD-10e. Develop a program for under-grounding utility lines.**

Working closely with MID and other utility companies, the City shall increase its efforts to place existing overhead electrical and communication lines underground. **UD-10f.**

**Require architecturally suitable means of screening utility equipment and garbage containers.**

Site plan review procedures shall consider screening of utility equipment, garbage collection/recycling stations, and other necessary appurtenant features of urban development.

**UD-10g. Develop specific corridor plans for designated major streets to improve or maintain the appearance of the corridor through special design, landscaping, and land use controls.**

Gateway improvement plans for the Highway 132 and the Waterford-Oakdale Highway should be developed to define entry corridors of the City.

**UD-10h. Strict attention should be given to the transition area between residential uses and commercial uses by requiring special landscape treatments and land use controls to lessen the impacts between different land uses.**

Landscaping buffers, rather than fences and walls, should be the primary means of minimizing nuisance conflicts between commercial and residential areas. Special care should be taken to ensure that pedestrian access is maintained between residential, commercial, and employment centers.

**UD-10i. High-rise residential, multi-family, and senior citizen housing projects are encouraged in and around the City's downtown core.**

High-rise multi-family development is not permitted in other areas of the City, but could play an important role in increasing activity and business opportunities in the downtown area.

## ***7.9 CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN***

---

### **7.9.1 Introduction/Background**

Since the 1970's, the name *Crime Prevention Through Environmental Design* (CPTED) has been attributed to the concept that is based on the belief that:

- x the proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime as well as an improvement in the quality of life
- x its success and popularity can be measured, in part, by its global acceptance and world-wide institutionalization.

### **7.9.2 The Need for CPTED in the Urban Design Process**

The need for CPTED in the urban design process can be found in the following two statements:

- x Crime and loss prevention are inherent to human functions and activities, not just something that police or security people do.
- x What we do right or wrong with our human and physical resources produces a lasting legacy.

### **7.9.3 The Value of CPTED**

The value of CPTED is twofold. First, it recognizes that the physical environment can be manipulated to produce behavioral effects that will reduce the fear and incidence of crime while improving quality of life. Then, it provides a conceptual framework, derived from this insight, which serves to develop and ensure a better designed

property. It is through the development of this design that crime and loss is kept to a minimum. That is because CPTED believes that crime and loss are by products of human functions that are not working properly.

### **7.9.4 CPTED and the Planning Process**

The City of Waterford recognizes the value of CPTED principles and encourage the integration into the formal development planning and design review processes in a number of important ways.

These include:

- x the formal adoption of CPTED principles into the City's Vision 2025 General Plan, and
- x the establishment of a policy that adopt CPTED principles into the City's Urban Design goals, policies and standards,

### **1. CPTED Fundamentals**

CPTED involves the design of physical space in the context of the needs of the bona fide users of the space, the normal and expected (or intended) use of the space and the predictable behavior of both bona fide users and offenders. In this regard, the proper function must not only match a space that can support it but the design must assure that the intended activity has the opportunity to function well and support the control of behavior.

#### **Goal:**

To create an environment where the design and use can lead to the reduction in the fear and incidence of crime and an improvement in the quality of life.

### **CPTED Concerns CPTED Objectives**

- x designs that make it difficult for an intended function to work well.
- x designs should ensure that the intended activity has the opportunity to function well and directly support the control of human behavior (design strategy).
- x lands and/or spaces that do not support their intended function.
- x match intended human functions with spaces that can support them (space assessment).

There are three overlapping CPTED design strategies. They are:

- x ***Natural Surveillance*** is a design strategy that is directed at keeping intruders under observation.
- x ***Natural Access Control*** is a design strategy that is directed at decreasing crime opportunity. The primary thrust of an access control strategy is to deny access to a crime target and to create a perception of risk in offenders. and,
- x ***Territorial Reinforcement*** is an “umbrella” design strategy that realizes that physical design can create or extend a sphere of influence so that users of a property develop a sense of proprietorship over it. Territorial strategies will often embody natural surveillance and natural access control strategies.

The conceptual thrust of the CPTED program is towards the exploitation of “natural” forms of surveillance and

access control. The term “natural” when referring to natural surveillance and access control, refers to deriving surveillance and access control as a result of the routine use and enjoyment of the property.

Examples of “natural” forms of surveillance include the strategic use and placement of park benches, windows and lobbies. Examples of “natural” forms of access control include the strategic use of distance (e.g. lawns, flooring) and/or topographical features (e.g. creeks, sidewalks) to direct activity or create a buffer between potentially conflicting activities.

**Mechanical Forms of Surveillance & Access Control** Other forms of surveillance and access control often used by designers include mechanical forms such as lighting, fencing or gating. **Territorial Reinforcement** Territorial reinforcement is an expression of proprietorship.

For example, a clean, well lit attractive store will present behavioral and environmental cues that tells the “normal user” that they are safe and only accepted behaviors will be tolerated. The same cues have an adverse effect on “abnormal users”.

The design of space and the way people are behaving will give the impression that the abnormal user will be observed, stopped or apprehended. Territorial reinforcement, together with natural surveillance and access control, promotes more responsiveness by users in protecting their territory.

### **Principle:**

City of Waterford Vision 2025 General Plan Update  
*Urban Design Chapter 6*

City of Waterford Vision 2025 General Plan Update  
*Urban Design Chapter 6*

To develop a design that functions well and supports the intended human behavior.

*influencing movement?*

**Natural Surveillance**

***Issues Objectives***

**Does the design allow us to observe?**

(a) Design space to facilitate observation by

increasing “visual permeability” i.e. the ability to see what is ahead and around. Measure the need for privacy and/or limited sightlines against the need for personal safety.

**Is this level responsive to the needs for observation?**

(b) Place vulnerable activities, such as cash handling/child care and others, in places that can be naturally, well-monitored. Develop potential for “eyes on the street” by strategically aligning windows, work stations and other activity generators towards these areas of “vulnerable activity”.

**Has the need for observation been carried consistently throughout the project?**

(c) Take special care to ensure that each phase of the project enhances and complements natural surveillance opportunities created in the design phase. This is particularly critical with respect to the landscaping and lighting phases. Photo 1: These houses have been strategically designed and placed to maximize observation to the entrance of the streets and the neighboring homes.

**Natural Access Control**

***Issues Guidelines***

*Does the design decrease criminal opportunity by effectively guiding and*

(a) Provide for “eyes on the street” through the strategic placement of entrances, windows, etc. Direct normal access to observable areas and prevent access to unobservable areas. Design space to provide people with a sense of direction while giving them some natural indication as to where they are and are not allowed (refer to Definition guidelines – Sec. 3.2)

*Will safety be compromised by limiting access?*

(b) Provide a limited number of access routes while allowing users some flexibility in movement.

*Does the design develop natural access control opportunities without considering their impact on natural surveillance?*

(c) Take special care to ensure that natural access control opportunities enhance and complement natural surveillance objectives. Photo 4: Multiple Entrances into this parking lot were replaced by a single, well observed entrance that includes a fence and control gate.

## **Territorial Reinforcement**

### ***Issues Objectives***

*Does the design act as a catalyst for natural surveillance and access control opportunities?*

(a) Enhance the feeling of legitimate ownership by reinforcing existing natural surveillance and natural access control strategies with symbolic or psychological barriers. Accomplish this by demonstrating the transition between public, semi-public and private space so that unwanted intrusion elicits a protective response that offenders will

perceive. This is often easily

accomplished with the strategic use of bollards and signs.

*Does the design create ambiguous spaces?*

(b) Minimize the creation of ambiguous spaces (a space is ambiguous when it lacks any sort of clue as to what it is for, and who it is for). Accomplish this by identifying potential “leftover spaces”, for instance the area between the aboveground portion of a building’s underground parking lot and its property line. Then take some positive action to develop this space so that users of the property take responsibility for it.

*Will the design create heavy or unreasonable maintenance demands?*

(c) Design space to allow for its continued use and intended purpose. Create durable environments that limit the need for maintenance especially where it affects natural surveillance and access control.

### Space Assessment

The CPTED approach to space assessment provides a simple guide for the layperson to use in determining the appropriateness of how a space is designed and used. This approach is based on three functions or dimensions of human space.

These functions are:

- x All human space has some designated purpose.
- x All human space has social, cultural, legal or physical definitions that prescribe the desired and acceptable behaviors.
- x All human space is designed to support and control the desired behavior.

By emphasizing designation, definition and design, space may be evaluated by asking the following types of questions:

### Designation

*What is the designated purpose of this space?*

*What was it originally intended to be used for?*

### Definition

*How is the space defined?*

*Where are its borders?*

*Are there social or cultural definitions that affect how that space is used?*

*Are legal or administrative rules clearly set-out and reinforced in policy?*

*Are there signs?*

### Design

What physical design will best support the intended use of space?

What physical design will best provide the means to influence behavior?

Once a basic self-assessment has been conducted, the “Three-d’s” can be examined to help guide the decisions about what to do with human space. These guidelines are presented in the accompanying table.

### Principle:

To develop a space that supports its intended function.

### Designation

#### *Issues Objectives*

**How well does the space support its intended use?**

(a) Assign space according to its ability to support an intended function.

**Is there conflict?**

(b) Use natural barriers, such as terrain or distance, to physically separate conflicting activities.

**Definition**

**Issues Objectives**

**Is it clear who owns the space?**

(a) Provide clear border definitions of controlled space.

**Is there conflict or confusion between the designated purpose of the space and its definition?**

(b) Provide clearly marked transitional zones that indicate movement from public to semi-public to private space.

**Design**

**Issues Objectives**

**Does the physical design match its intended use?**

(a) Ensure that physical space is designed in the context of the needs of the bona fide users of the space.

**Does the physical design impede or conflict with the productive use of space?**

(b) Design and organize space to allow for its effective use and safe critical intensity of people.

**Does the physical design impede or conflict with the proper functioning of the intended human activity?**

(c) Design space to increase the perception or reality of natural surveillance, natural access control and territoriality.

**Does the physical design provide the means for normal users to naturally influence the activities of others?**

(d) Identify vulnerable areas, including those with limited natural surveillance, natural access control and territoriality such as parks or parking areas, then reduce their risk by improving the distribution of safe activities near them.

**Is there conflict or confusion in the manner in which the physical design is intended to influence human behavior?**

(e) Identify vulnerable activities, such as cash handling and child care centers, then reduce their risk by placing them inside areas of strong natural surveillance, natural access control and territoriality.

**Notes on Section 3.1 Designation**

**(a) Assign space according to its ability to support an intended function.**

The purpose of this guideline is to match a functions need for natural surveillance, natural access control and territorial reinforcement with a space that can support them.

**(b) Use natural barriers, such as terrain or distance, to physically separate conflicting activities.**

The purpose of this guideline is reducing fear-producing conflict by effectively separating conflicting activities. Effective barriers to conflicting activities include distance, terrain and activities that can be described as neutral or complementary.

An example of a conflicting activity is a basketball court next to a senior's centre. The sounds and action produced from the court can be disruptive and fear producing to seniors.

**Notes on Section 3.2 Definition**

**(a) Provide clear border definitions of controlled space.**

The origin of this guideline can be found in the common law requirement that space be defined to preserve property rights. Its underlying principle is that a “reasonable person” must be able to recognize that he or she is moving from public to private space. Fences, certain types of shrubs or signs are examples of acceptable border definition. Border definition can be physical or symbolic.

**(b) Provide clearly marked transitional zones that indicate movement from public to semipublic to private space.**

The importance of this guideline is that users of a property must be made to acknowledge movement into a controlled space.

The rationale behind this, is that as transitional definition increases, the range of excuses for improper behavior is reduced.

**Notes on Section 3.3 Design**

**(a) Ensure that physical space is designed in the context of the needs of bona fide users of the space.**

The purpose of this guideline is to properly match a space’s physical design with its intended use. This can best be accomplished by matching the physical design of the space with the physical, social and psychological needs of the space’s bona fide users.

**(b) Design and organize space to allow for its effective use and a safe critical intensity of people.**

It has generally been found that the effective and productive use of space

will generate a safe and critical intensity of people that will not only cause “abnormal users” to feel at greater risk, (due to greater risk of surveillance and intervention) but will also result in “normal users” feeling and experiencing reduced risk.

**(c) Design space to increase the perception or reality of natural surveillance, natural access control and territoriality.**

The purpose of this guideline is to emphasize “user friendly” natural forms of surveillance and access control such as windows, clear lines of sight and spatial definition. The reason for this emphasis is to minimize the constraints on the routine use and enjoyment of the property as is often the case when traditional forms of target hardening are used.

**(d) Identify vulnerable areas, including those with limited natural surveillance, natural access control and territoriality such as parks or parking areas, then reduce their risk by improving the distribution of safe activities through them.**

This guideline is to be used within reason to strategically distribute “safe” activities through, what would otherwise be “unsafe” areas. The benefits associated with this guideline include increased witness potential and challenging or controlling behavior (e.g. staring). The net impact of these benefits is a greater feeling of safety for “normal” users of the property and a greater sense of risk, scrutiny and intervention amongst most “abnormal” users.

**City of Waterford Vision 2025 General Plan Update**  
*Urban Design Chapter 6*

**(e) Identify vulnerable activities, such as cash handling or child care centers, then reduce their risk by placing them inside areas of strong natural surveillance, natural access control and territoriality.**

The purpose of this guideline is to proactively distribute vulnerable activities in the safest possible places. The positioning of vulnerable activities

near windows of occupied space or within tightly controlled areas will help to overcome risk and make the users of these areas feel safer. These photos show a kindergarten play area designed within an unheated interior courtyard of the school. It also serves as a gathering place.