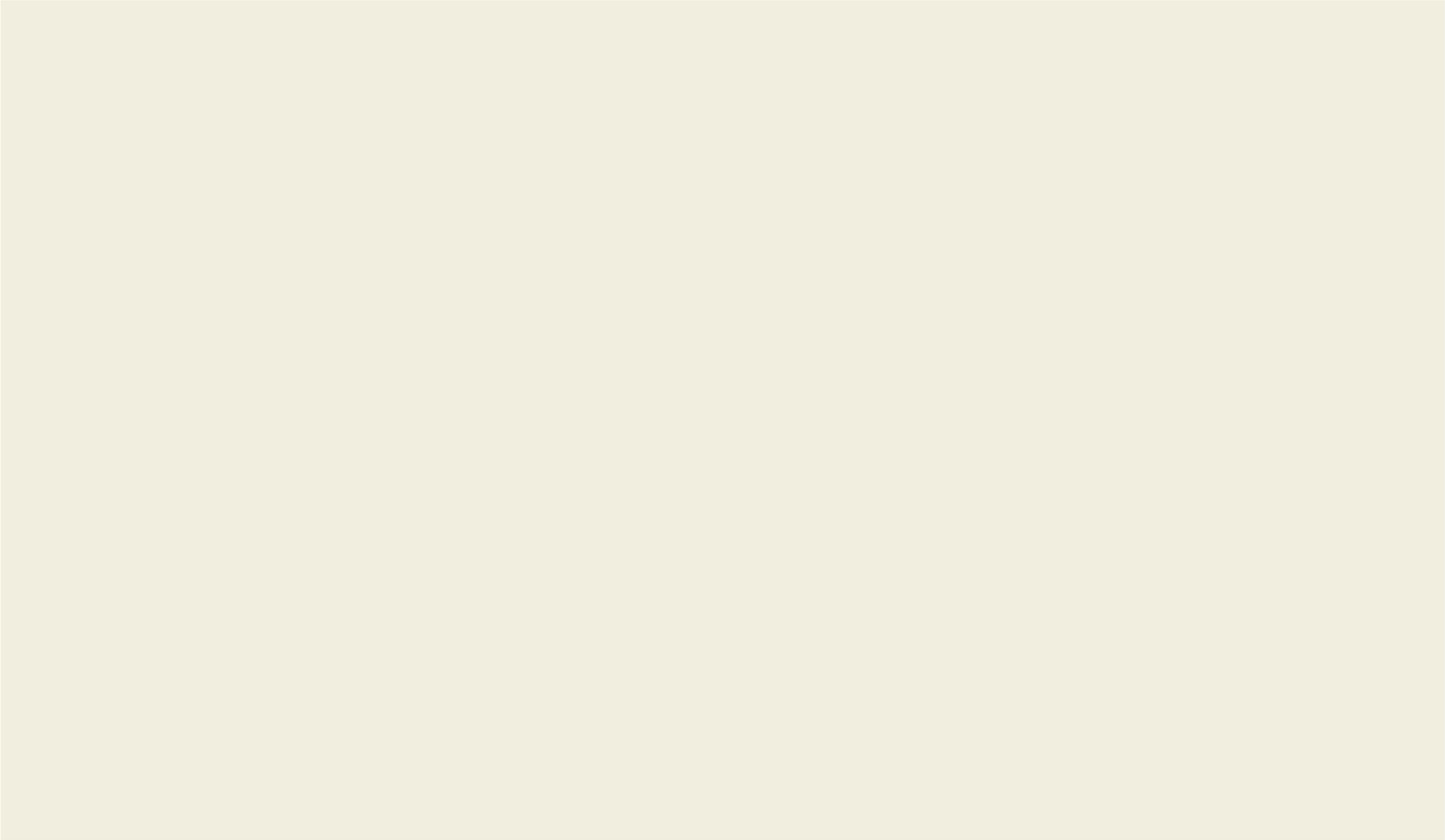


Kettlestone

Design Guidelines

Summary for Residential Uses

May 4, 2015



Preface

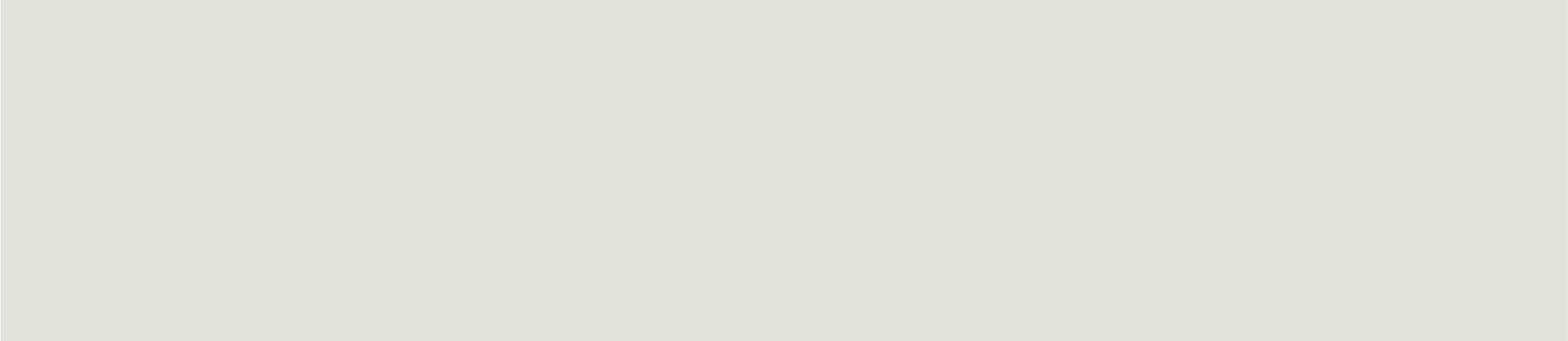


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Purpose of these Guidelines

The Kettlestone Design Guidelines serve to provide a structure for future developers and property owners to follow as they prepare to start and continue to work through the development review process for projects located within the Kettlestone Master Plan corridor. These guidelines are established to help achieve a desired aesthetic and cohesive appearance for Kettlestone.

The Kettlestone Design Guidelines book serves as a central resource for the City of Waukee as well as developers and property owners, providing information specific to the various zoning districts throughout Kettlestone. In addition, the Kettlestone Design Guidelines book provides information to guide developers and property owners through general site planning, architectural and landscape design, sustainability, lighting, storm water management, and signage. These items are further supplemented by the City of Waukee’s Municipal Codes and Ordinances.

Guidelines Summary for Residential Uses

The following is a summary of the Kettlestone Design Guidelines that apply to residential uses. This summary does not include an outline of the City of Waukee’s development review and approval process, signage regulations, and the Kettlestone Overlay Zoning Districts as detailed in the complete Kettlestone Design Guidelines booklet. For additional information, please refer to the Kettlestone Design Guidelines booklet and the Waukee City Code.

Glossary

After Hours Business: Any business open during any time between the hours of two o'clock (2:00) A.M. to six o'clock (6:00) A.M. any day of the week and where patrons are allowed to bring their own beer and wine onto the business premises.

Apartment Hotel: A building designed for, or containing both, individual guest rooms or suites of rooms, and rooms or suites of rooms are for dwelling units for which no hotel/motel tax is collected.

Architectural (Precast) Concrete Panel: A precast concrete wall panel that is designed and engineered to transfer shear, support floor and roof loads as well as offer a wide range of architectural exterior finishes. Architectural precast panels have the highest quality concrete finish and very often are integrally colored in the plant to match other building exterior finish materials.

Architectural Metal Panel: A modular exterior cladding system comprised of insulated or uninsulated prefinished metal panels and supporting framework attached to the structural frame of a building.

Articulation: The act of jointing; a joint.

Bar: Any establishment devoted primarily to the selling, serving or dispensing and drinking of malt, vinous, or other alcoholic beverage by 60% or more of total gross sales, or any place where any sign is exhibited or displayed indicating that alcoholic beverages are obtainable within or thereon, and where such beverages are consumed on the premises. (May also be referred to as “Cocktail Lounge,” “Tavern,” or “Saloon”)

Bay: 1. Within a structure, a regularly repeated spatial element defined by beams or ribs and their supports. 2. A protruded structure with a bay window.

Bay-and-Gable style: A bay-and-gable is a distinct architectural style of house that is ubiquitous in the older parts of Toronto, Canada. The most prominent feature is the large bay window that usually covers more than half of the front of the house, surmounted by a gable roof. The classic bay and gable is a red brick semi-detached structure that is two and a half stories tall, though many variations also exist. It was one of the most common forms of house built in late nineteenth and early twentieth century Toronto.

Big Box Retail: Any single tenant retail building or space that is 50,000 sq. ft. in gross floor area or larger.

Body Piercing Studio: Any establishment or business wherein body piercing is practiced. Specifically excluded from this definition are retail jewelry businesses offering ear piercing as a complimentary service. (See “Tattoo Studio”)

Burnished Block: A concrete masonry unit (CMU) whose display face has been burnished (polished) to expose the natural colors and shapes of the aggregates within the block. Burnishing yields a higher quality finish characterized by increased coloration and subtle variation in hue and tone. Burnished surfaces are coated with a clear sealer to achieve a high-resolution finish.

Coastal style: American Coastal style is a hybrid style of architecture found predominantly along the Atlantic coast of the United States that takes elements of Cottage and other folk styles and renders them in white or light pastel colors or accents giving them a distinctly bright, open and welcoming feel.

Craftsman style: A domestic architectural style in America in the first few decades of the 20th century. Houses in this style are usually characterized by: a nonsymmetrical facade typically sheathed with stucco, wood clapboard, or wood shingles, and less often with board and batten, brick, concrete block, or stone. Details often included: a gabled porch, recessed or trellised, facing the street; usually a low to moderately pitched front-gabled roof; exposed roof rafters, beams, false beams, or triangular knee braces inserted add decorative elements under the gables; gabled dormers or shed dormers with exposed beams; double-hung windows or heavily framed casement windows.

Delayed Deposit Services Business: A person or individual, group of individuals, partnership, association, corporation, or any other business unit or legal entity who for a fee does either of the following:

Accepts a check, draft, share draft, or other instrument for the payment of money dated subsequent to the date it was written.

Accepts a check, draft, share draft, or other instrument for the payment of money dated on the date it was written and holds it for a period of time prior to deposit or presentment pursuant to an agreement with, or any representation made to, the maker of the check, draft, or other instrument whether express or implied.

Dormer: Projecting framed structure set vertically on the rafters of a pitched roof, with its own roof (pitched or flat), sides, and a window set vertically in the front.

Drive-Thru: A drive-thru facility is an establishment that provides or dispenses products or services, through an attendant or an automated machine, to persons remaining in their vehicle that are in designated drive-thru stacking lanes. A drive-thru facility may be in combination with other uses, such as financial institutions, restaurants, pharmacies, and service providers such as dry cleaners. In these guidelines, car washes and gas stations will not be categorized as drive-thru facilities.

Exterior Insulation and Finish System (EIFS): An exterior finish for a building composed of polystyrene foam covered with a synthetic stucco; this type of stucco (in contrast to traditional, porous cement-based stucco) is water proof and sprayed on.

Exterior lighting: Temporary or permanent lighting that is installed, located or used in such a manner to cause light rays to shine outdoors.

Exterior lighting fixture: The complete exterior lighting unit, including: the artificial source of light, the parts required to distribute the light, elements for light output control such as the reflector (mirror), or refractor (lens), the housing that protects and holds the lamp in place, the connection to the power supply, and the component that anchors the lighting unit to the ground or onto a structure.

Facade: The exterior face of a building which is the architectural front, sometimes distinguished from the other faces by elaboration of architectural or ornamental details.

Federal style: An architectural style in the post-colonial era in America, from about 1780 to 1820 and beyond; noted for its clarity of form, simplicity, restraint, and subtle use of color, as well as its delicacy and lightness in detailing. Buildings in this style are usually characterized by: a symmetric facade, often with a large entrance portico; commonly, brick construction with a Flemish bond pattern and thin mortar joints.

Fenestration: The design, construction, or presence of openings in a building. Includes windows, doors, louvers, vents, wall panels, skylights, storefront, curtain walls, and slope glazed systems. From the Latin word fenestra (“window”).

Fiber Cement: A composite building material made of sand, cement, and cellulose fibers. Most commonly used in siding applications where quality, longevity and durability are required.

Floodlight: A lamp that incorporates a reflector or a refractor to concentrate the light output into a directed beam in a particular direction.

Floor Area Ratio (FAR): The total square footage of a building divided by the total square footage of the lot or parcel of land on which the building is located.

Foot-candle: The illuminance measured one (1) foot from a one (1) candle source.

Full cut-off: A shielded light fixture that emits no light above a horizontal plane touching the lowest point of the fixture.

Gable: A vertical surface commonly situated at the end of a building, usually adjoining a pitched roof; its shape depends on the type of roof and parapet, although most often it is triangular; often extends from the level of the cornice up to the ridge of the roof. If the gable is on the facade rather than the back end, the building is said to be *front-gabled*.

Glare: The light in a direction near one’s line of sight that either causes discomfort to the eye or impairs visibility.

Glazing: The glass surface of a glazed opening. The glass in a window.

Hookah Lounge: An establishment where patrons are provided shisha (flavored tobacco) in a hookah or nargile water smoking pipe. (See “Smoking Lounge or Smoking Den”)

Horizontal and vertical foot-candles: The illuminance, measured by a light meter, striking a vertical or horizontal plane.

Hotel or Motel: A building containing guest rooms in which lodging is provided and offered to the public on a temporary basis for compensation, and which is open to transient guests, in contrast to a bed and breakfast inn, boarding house, or rooming house. For establishments to be considered a hotel or motel, versus an apartment hotel or apartment house/building, all rooms must be available for rent for as little as one (1) night and no more than 30 days, no rental contract or similar agreement is involved, and the establishment must be licensed as a hotel by the State of Iowa and collect and pay to the State hotel/motel tax.

Illuminance: The intensity of light in a specified direction measured at a specified point.

Light Emitting Diode (LED): A solid-state device that emits light of a single primary color, but in combination with other diodes can produce colors of any hue for use in signage or lighting. LED fixtures are energy efficient and have a long operational life.

Light trespass: Unwanted light falling on public or private property from an off site use or property.

Liquor Store: A retail shop or establishment that primarily sells prepackaged alcoholic beverages, including wine, beer, and alcoholic liquors, intended to be consumed off the store’s premises, and where 50% or more of total gross sales are derived from the sale of alcohol and/or tobacco.

Mid-Century (Modern): An American architectural style characterized by flat planes, clean lines, open floor plans, expansive glass, changes in level and an obvious connection to the outdoors. Mid-Century most often refers to residential architecture but the characteristics of the style apply equally well to smaller scaled commercial buildings.

Open Space: Any area within a single site or lot that is not covered by building, structure, parking lot, or driveway. Sidewalks, patios, or other paved or hard surfaced area (included within any outdoor public or private space may be counted as open space).

Pacific Lodge style: Pacific Lodge or Pacific Northwest style is not a formally recognized architectural style but is instead a trend in the contemporary architecture of the Pacific Northwest characterized by the use of natural, rustic, and industrial-type materials. There is no consistent building form associated with this trend. Common materials include Cor-Ten steel, rough-hewn timbers, corrugated metal panel, clear-finished wood sidings, concrete, and stone (often rubble stone or river rock).

Parapet: In an exterior wall, the part entirely above the roof.

Pawnshop: An establishment wherein the business of a pawnbroker is conducted. A pawnbroker shall be any person who lends or advances money or other things for profit on the pledge and possession of personal property, or other valuable things, other than securities or written or printed evidences of indebtedness; or, who deals in the purchasing of personal property or other valuable things on condition of selling the same back to the seller at a stipulated price.

Prairie style: A style of American domestic architecture that originated with the Prairie School, popular primarily in the Midwest from about 1900 to 1920. A house in this style often is characterized by: a two-story height with wings and/or porches of one story, integrated with its site to provide a low, horizontal appearance; the central portion of the house usually higher than the adjacent flanking wings; traditional building materials; exterior walls commonly of light-colored stucco, light colored brick, or concrete block; contrasting wood between stories.

Recreational Facility: Football fields, soccer fields, baseball fields, tennis courts, swimming pools, or any other special event or show area.

Restaurant: An establishment that prepares and serves food and beverages to persons for immediate consumption. Any establishment with 60% or more of total gross sales in alcoholic beverages shall be defined as and considered a bar and not a restaurant.

Dine-in: A restaurant where the patron consumes food and beverages while seated at tables or counters located on the premises.

Drive-in: A restaurant that delivers prepared food and/or beverages to patrons in motor vehicles, regardless of whether or not it also serves prepared food and/or beverages to customers who are not in motor vehicles, for consumption on or off the premises. This definition includes coffee shops, ice cream parlors, and any other business that serves food or drinks to patrons in a motor vehicle.

Carry-out: A restaurant which prepares food and/or beverages which are packaged and delivered to the patrons or are picked-up at the establishment by the customer; there is no consumption of food or beverages on the premises by patrons.

Roof Form, Flat: A horizontal roof either having no slope, or a slope sufficient only to effect drainage, its pitch being usually less than 10 degrees; it may be surrounded by a parapet or it may extend beyond the exterior walls.

Roof Form, Pitched: A steep gable roof having the same pitch on each side of a central ridge.

Roof Form, Gabled: A roof having a single slope on each side of a central ridge; usually with a gable at one or both ends of the roof.

Size proportionate to level of finish: The larger the area the more green space and park like, the smaller the plaza the more pavers, benches, fountains, artwork, are expected.

Smoking Lounge or Smoking Den: An establishment where patrons can purchase and consume tobacco products on site.

Split-face Block: A solid or hollow concrete masonry unit, split lengthwise after curing; laid with the fractured surface exposed, so as to provide a rough texture.

Streetscape: The visual elements of a street, including the road, adjoining buildings, street furniture, trees and open spaces, etc. that combine to form the street’s character.

Sustainable Office (*Architectural Style*): This architectural style is not well-recognized as a distinct style with common characteristics. Buildings of this style will generally adhere to design and construction principles that create highly energy efficient buildings that architecturally are characterized as well-constructed, open plan offices that harvest and utilize abundant daylight and thus have large amounts of exterior glass that is often provided with horizontal shading devices.

Tattoo Studio: Any establishment in which tattooing is carried out professionally and may or may not include ear and body piercing. (See “Body Piercing Studio”)

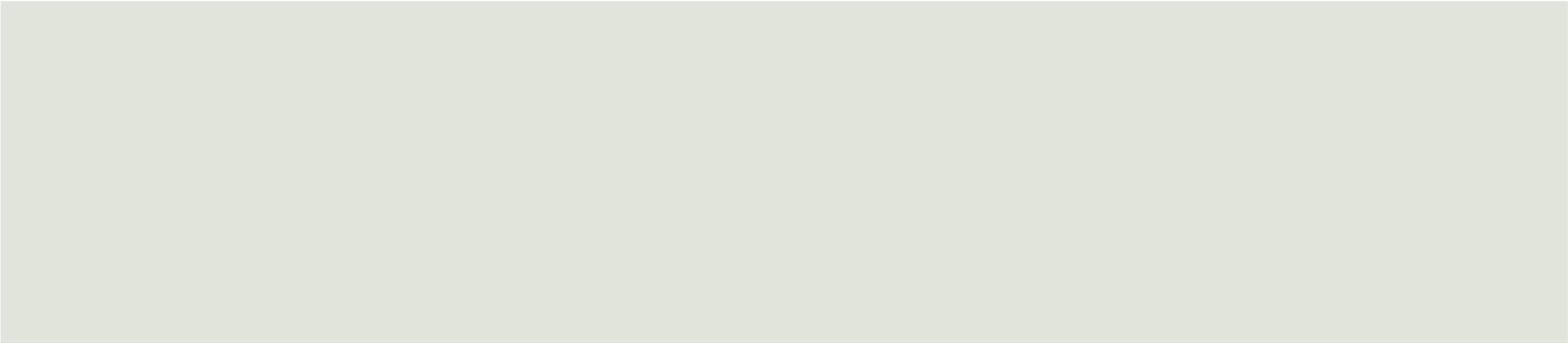
Tobacco Store: A retail shop or establishment primarily engaged in the sale of tobacco and tobacco related products for off premise consumption only, and where 50% or more of total gross sales are derived from the sale of tobacco and/or alcohol.

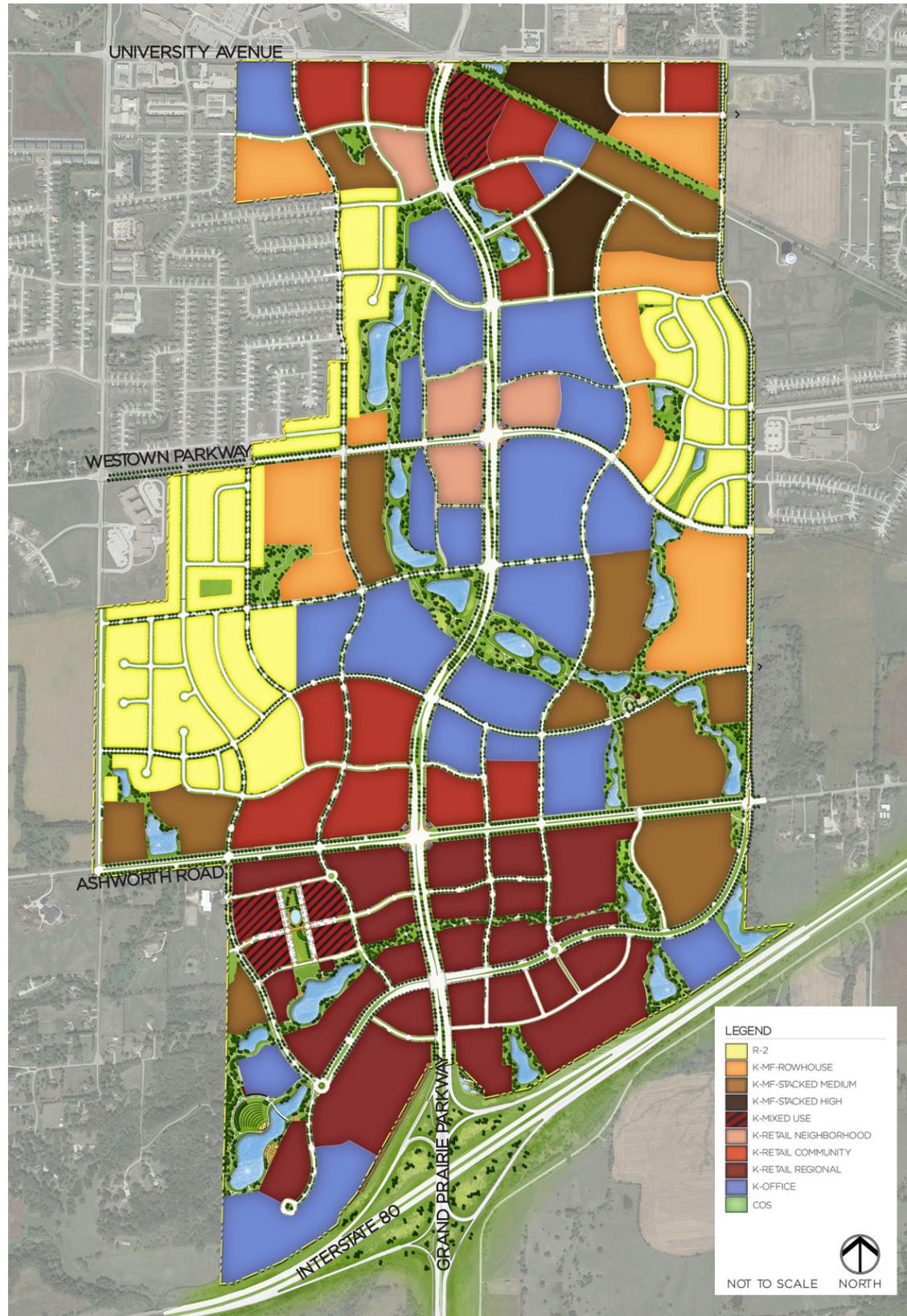
Volatile Organic Compound: Gasses emitted from certain solids or liquids.

VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects. Examples include (but are not limited to): paints and lacquers, paint strippers, cleaning supplies, pesticides, building materials and furnishings, office equipment such as copiers and printers, correction fluids and carbonless copy paper, graphics and craft materials including glues and adhesives, permanent markers, and photographic solutions.



Residential Land Use Districts





Land Use Districts

Land use classifications and land use plans are the basis for all zoning districts and regulations, as well as zoning maps. The land use map and land use classifications contained and referenced within these guidelines are based upon those established in the Kettlestone Master Plan that was adopted on June 16, 2014 by the Waukege City Council. It is intended that specific new zoning districts are created and special zoning overlay districts are established within Kettlestone to promote the goals of the Master Plan and enforce the regulations contained within these guidelines.

The land use plan map represents the desired mix and intensity of uses. This plan is intended to be flexible to allow for some swapping of land uses provided the overall intent, mix and density of the land uses remain consistent with the original plan. It is also intended that the land uses will adjust based upon final public and private street alignments.

The following is a summary of each land use classification:

Single Family Residential

Detached single and two family dwellings on individual lots with public street frontage and driveway access. Lots may also be served by an alleyway. Lot sizes range from 8,000 to 40,000 sq. ft. Typical density is 2 to 6 lots per acre. Dwellings should have front porches, windows, and front entryways that dominate the street presence. The appearance of garage doors should be minimized.



Multi-Family Rowhouse

Three or more dwelling units attached side-by-side (in a row). Units may be located on individual lots or on a common association lot under a condominium regime. Each unit typically has public or private street frontage and may be served by an alleyway. Garages are typically tuck-under or first floor attached. Units have individual entryways. Densities range from 6 to 12 dwelling units per acre. Rowhouses should be 2-3 stories in height, placed close to the street, and include front porches. Garages should be encouraged to be rear loaded.



Multi-Family Stacked Medium

Dwellings attached horizontally (side-by-side and back-to-back) and vertically with 3 or more units. If only attached horizontally, units may be located on individual lots or on a common association lot under a condominium regime. If vertically attached, units are typically located on an association lot under a condominium regime. Units may or may not have public street frontage and may be served by an alleyway. Garages may be tuck-under, first floor, or stand-alone garage units in a common parking area. First floor units typically have individual entryways. Densities range from 8 to 14 dwelling units per acre. Building units should be 2 to 3 stories tall, have a high-level of exterior finish, utilize brick and/or stone, and include heavy trim elements. The design of the buildings should include variable roof and exterior wall planes. Finish details shall be incorporated into the design to divide the mass of the buildings and add visual interest. Garages should be located in a manner to reduce their public visibility and impact.

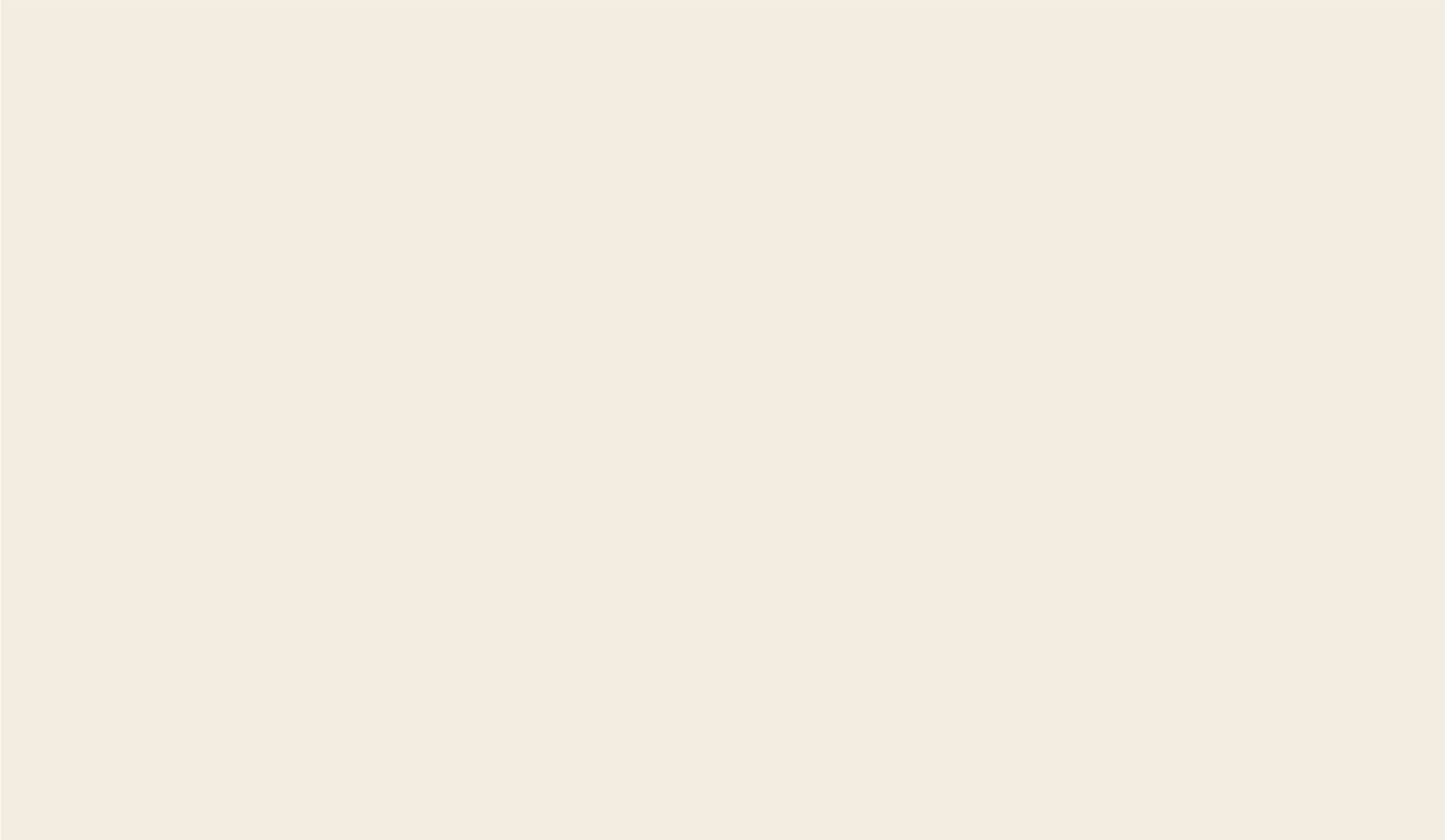


Multi-Family Stacked High

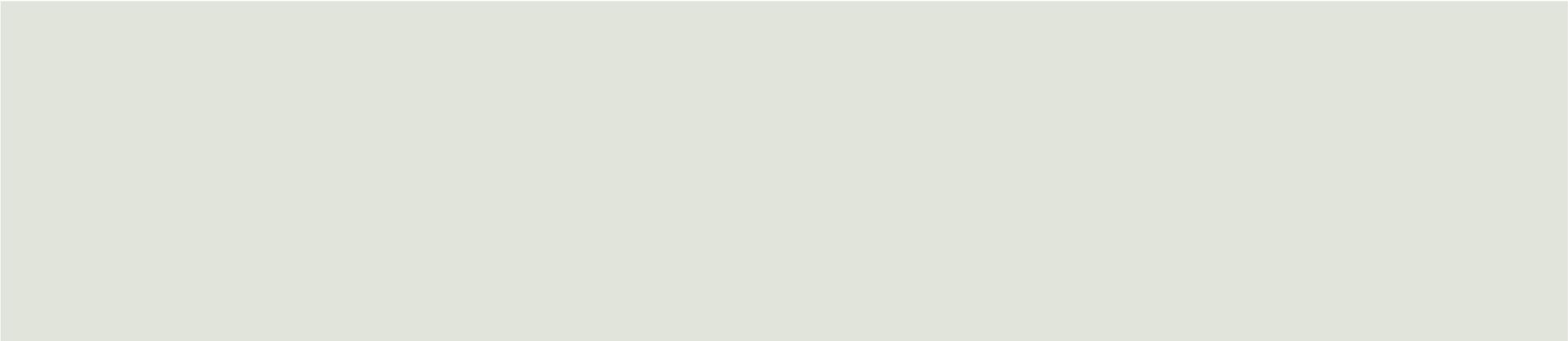
Dwelling units attached horizontally and vertically with 8 or more units per building. Building units may be located on an association lot under a condominium regime or may be under a single ownership. Building units may or may not have public street frontage. Garages may be tuck-under, located within or below the building, or stand-alone garage units in a common parking area. Densities range from 15 to 24+ dwelling units per acre. Building units should be 3 to 5 stories tall, have a high-level of exterior finish, utilize brick and/or stone, and include heavy trim elements, and patios or balconies. Building units typically have a shared entryway into the building and a common interior corridor to access individual units. The design of the buildings should include variable roof and exterior wall planes. Finish details that divide the mass of the buildings and add visual interest shall be incorporated into the design. Garages should be located in a manner to reduce their public visibility and impact.



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Kettlestone Residential Zoning Districts



Compatible with:

Kettlestone Single Family Residential land use district. Utilizes the existing R-2 district regulations and requirements (refer to City Code for Specific Requirements).

General Permitted Principle Uses:

(Refer to City Code for specific requirements.)

- Single family dwellings
- Two family dwellings (duplexes)
- Churches, chapels, temples, and similar places of worship
- Public and parochial schools
- Non-commercial golf and recreation facilities
- Nursing, convalescent, and retirement homes

General Permitted Accessory Uses:

(Refer to City Code for specific requirements.)

- Private garage or carport
- Private nurseries and greenhouses less than 240 SF with no retail or wholesale sales
- Private Swimming pools

Bulk Regulations:

	Single Family	Two Family
Front Yard Setback (required from all public/private street frontages)	30 ft	30 ft
Side Yard Setback	7 ft min. 15 feet total	7 ft min. 15 feet total
Rear Yard Setback	30 ft	30 ft
Principle Building Perimeter Setback from Adjoining SFR	n/a	n/a
Minimum Principle Building Separation	n/a	n/a
Minimum Principle and Accessory Building Separation	6 ft	
Detached Accessory Structure Setbacks	30 ft front, 2 ft internal	30 ft front, 2 ft internal
Principle Structure Maximum Height	30 ft (3 stories)	30 ft (3 stories)
Minimum % Open Space	n/a	n/a
Maximum FAR	n/a	n/a
Maximum DU / AC	6 du/ac	6 du/ac
Minimum Lot Size	8,000 s.f.	10,000 s.f.
Minimum Lot Width	65 ft	80 ft
Building Type	SF Detached	Duplex

Off Street Parking Requirements

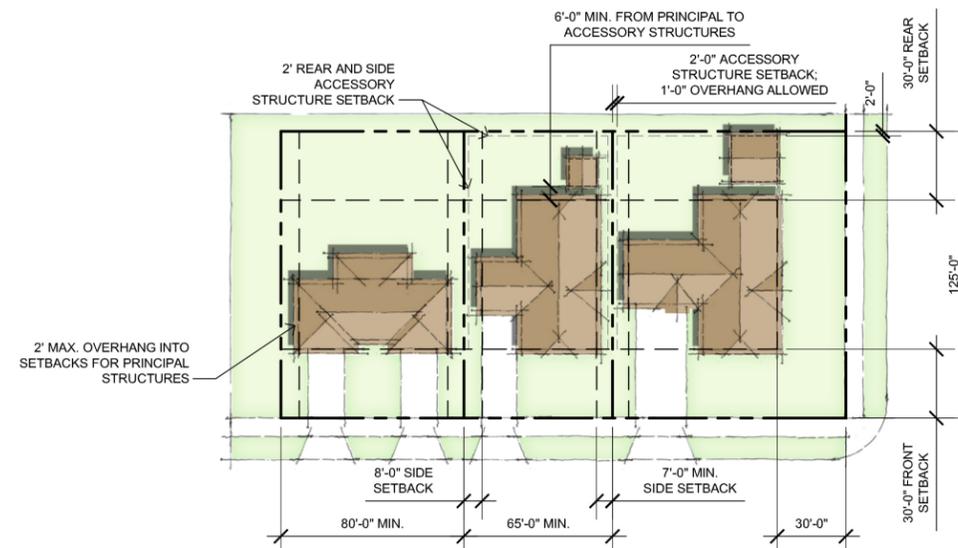
Single Family Dwellings

- Minimum 10'-0" wide driveway
- Minimum two enclosed garage spaces per unit

Two Family Dwellings

- Minimum 10'-0" wide driveway
- Minimum two enclosed garage spaces per unit

Single Family Residential (R-2)



Compatible with:

Kettlestone Multi-Family Rowhouse land use district.

General Permitted Principle Uses:

(Refer to City Code for specific requirements.)

- Single Family rowhouse and townhome units only horizontally attached, no stacked units. Maximum of 12 dwelling units per acre.

General Permitted Accessory Uses:

(Refer to City Code for specific requirements.)

- Automobile garages and carports, gazebos, and pool houses that serve and are part of a row or townhome development.

Bulk Regulations:

Front Yard Setback (required from all public/ private street frontages)	15 ft max
Side Yard Setback	attached (or) 5 ft
Rear Yard Setback	30 ft
Principle Building Perimeter Setback from Adjoining SFR	n/a
Minimum Principle Building Separation	10 ft
Minimum Principle and Accessory Building Separation	30 ft
Detached Accessory Structure Setbacks	20 ft front, 5 ft internal
Principle Structure Maximum Height	Min 2 stories, Max 3 stories
Minimum % Open Space	n/a
Maximum FAR	n/a
Maximum DU / AC	12 du/ac
Minimum Lot Size	n/a
Minimum Lot Width	n/a
Building Type	MF Horizontal, attached

Off Street Parking Requirements

- 2 spaces per unit
- Minimum 1 enclosed garage space per unit

Other Applicable Regulations

- Minimum 3 and maximum 8 units per building

Kettlestone Multi-Family Rowhouse (K-MF-Rowhouse)



Compatible with:

Kettlestone Multi-Family Stacked Medium land use district.

General Permitted Principle Uses:

(Refer to City Code for specific requirements.)

- Single Family Row and townhome units, and multi-family apartment or condominium units either horizontally or vertically attached. Maximum of 14 dwelling units per acre.
- Nursing, convalescent, and retirement homes.

General Permitted Accessory Uses:

(Refer to City Code for specific requirements.)

- Automobile garages and carports, gazebos, and private pools and pool houses that serve and are part of a row, townhome, apartment, or condominium development.

Bulk Regulations:

Front Yard Setback (required from all public/private street frontages)	0 ft
Side Yard Setback	0 ft
Rear Yard Setback	0 ft
Principle Building Perimeter Setback from Adjoining SFR	30 ft.
Minimum Principle Building Separation	10 ft. per story
Minimum Principle and Accessory Building Separation	30 ft
Detached Accessory Structure Setbacks	20 ft front, 5 ft internal
Principle Structure Maximum Height	Min. 2 Stories Max 3 Stories
Minimum % Open Space	n/a
Maximum FAR	n/a
Maximum DU / AC	14 du/ac
Minimum Lot Size	n/a
Minimum Lot Width	n/a
Building Type	MF Vertical or horizontal, attached

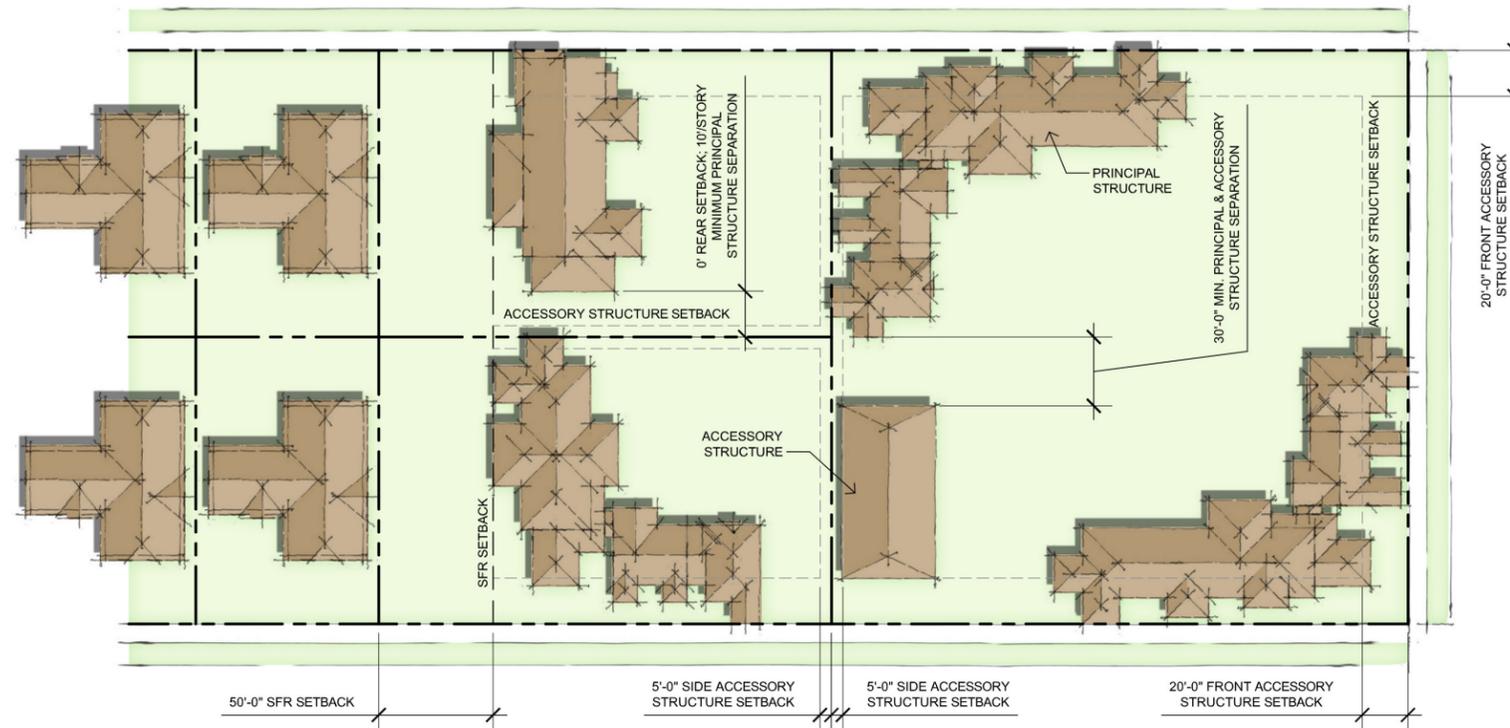
Off Street Parking Requirements

- 2 spaces per unit + 1 visitor space per 5 units
- Minimum 1 enclosed garage space per unit

Other Applicable Regulations

- Minimum 3 units per building

Kettlestone Multi-Family Stacked Medium (K-MF-Stacked Med)



Compatible with:

Kettlestone Multi-Family Stacked High land use district.

General Permitted Principle Uses:

(Refer to City Code for specific requirements.)

- Single Family Row and townhome units, and multi-family apartment or condominium units either horizontally or vertically attached. Minimum of 15 and a Maximum of 24 dwelling units per acre.
- Nursing, convalescent, and retirement homes.

General Permitted Accessory Uses:

(Refer to City Code for specific requirements.)

- Automobile garages and carports, gazebos, and private pools and pool houses that serve and are part of a row, townhome, apartment, or condominium development.

Bulk Regulations:

Front Yard Setback (required from all public/ private street frontages)	0 ft
Side Yard Setback	0 ft
Rear Yard Setback	0 ft
Principle Building Perimeter Setback from Adjoining SFR	50 ft.
Minimum Principle Building Separation	10 ft. per story
Minimum Principle and Accessory Building Separation	30 ft
Detached Accessory Structure Setbacks	20 ft front, 5 ft internal
Principle Structure Maximum Height	Min. 3 Stories Max 5 Stories
Minimum % Open Space	n/a
Maximum FAR	n/a
DU / AC	Min 15 du/ac, Max 24 du/ac
Minimum Lot Size	n/a
Minimum Lot Width	n/a
Building Type	MF Vertical or horizontal, attached

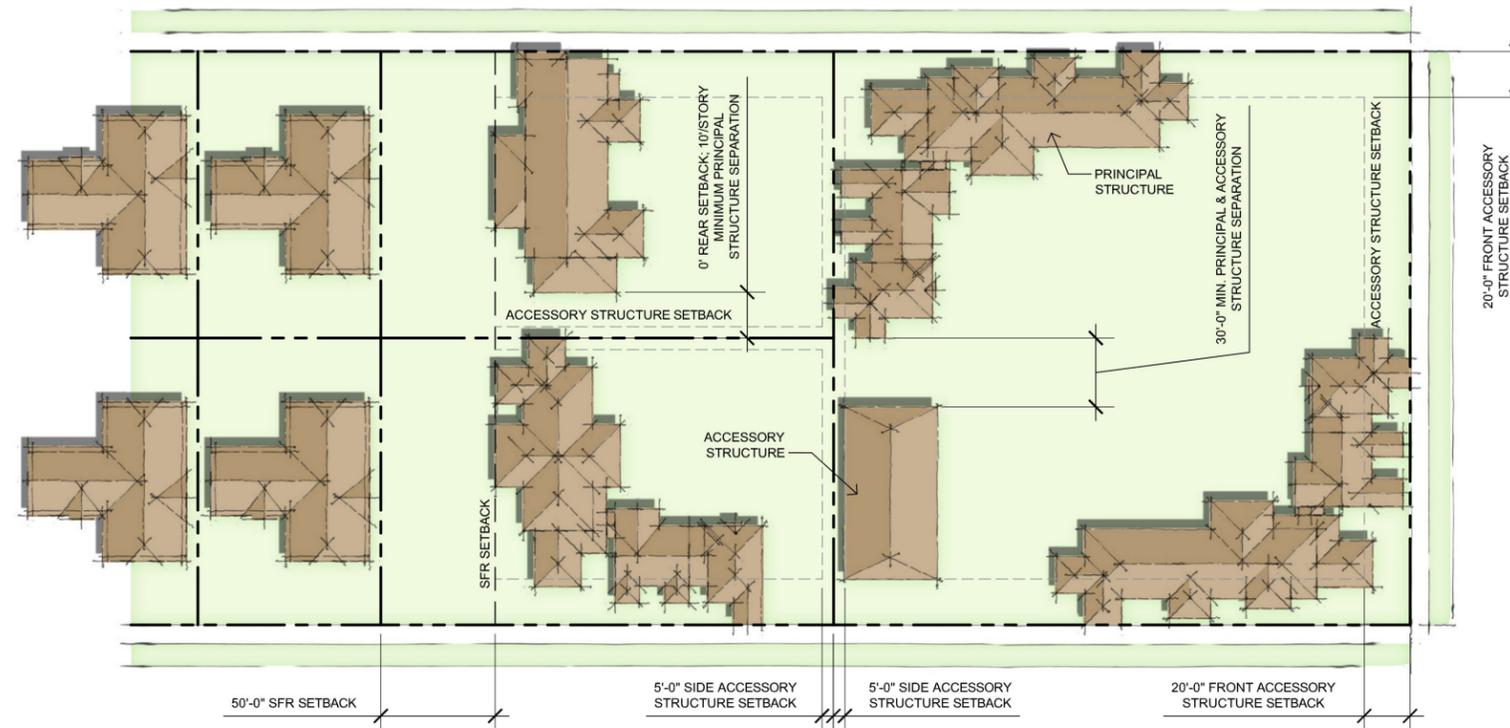
Off Street Parking Requirements

- 2 spaces per unit + 1 visitor space per 5 units

Other Applicable Regulations

- Minimum 8 units per building

Kettlestone Multi-Family Stacked High (K-MF-Stacked High)



Compatible with:

Kettlestone Open Space and Parks land use districts. Utilizes the COS district regulations and requirements (Refer to City Code for specific requirements).

General Permitted Principle Uses:

(Refer to City Code for specific requirements.)

- Agricultural uses and structures not including livestock or poultry
- Public parks and non-commercial recreational uses
- Civic Uses
- Special event vendors as permitted by the City.

Prohibited Uses:

(Refer to City Code for specific requirements.)

- All Residential uses

General Permitted Accessory Uses:

(Refer to City Code for specific requirements.)

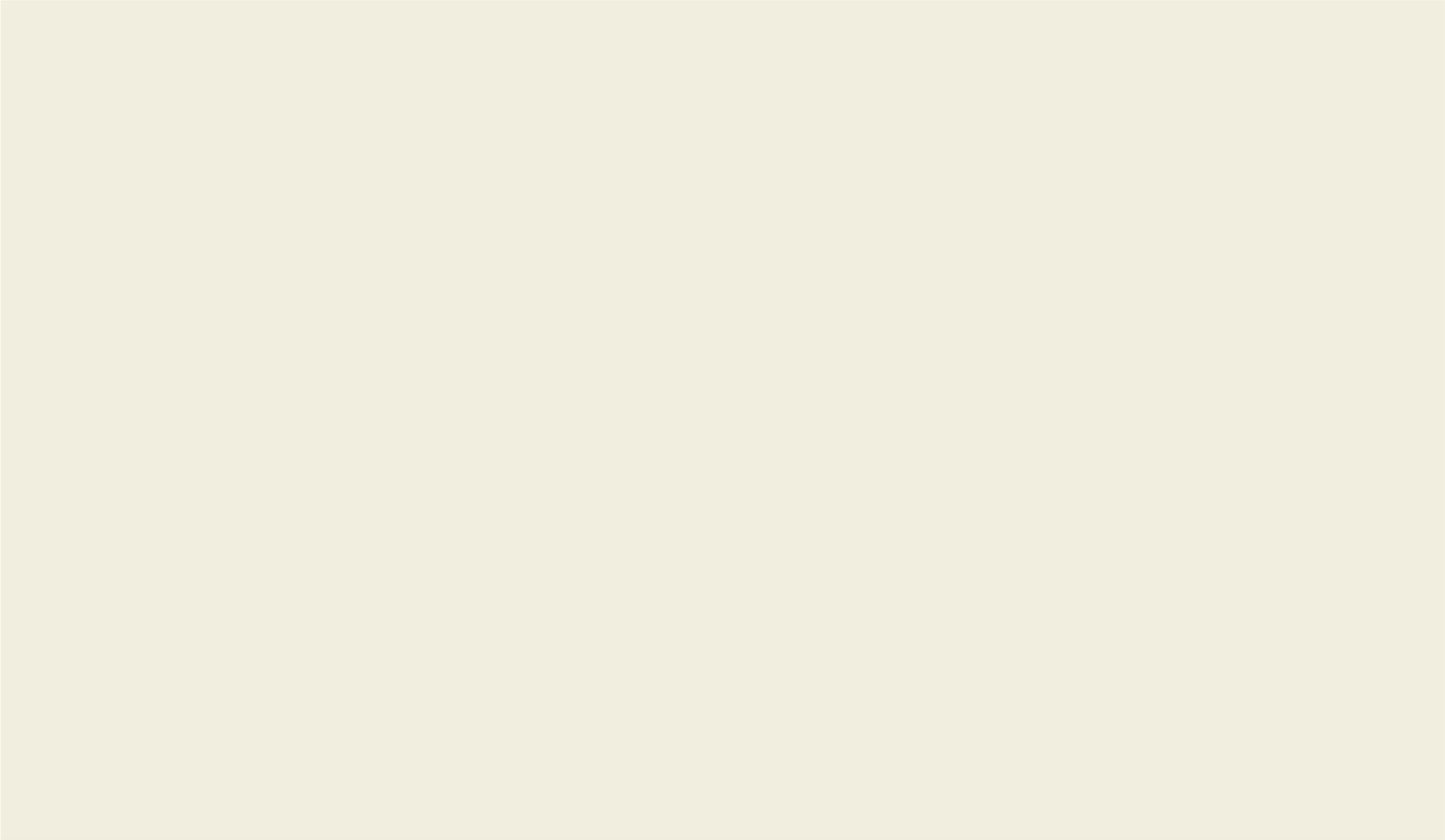
- Accessory uses customarily incidental to a permitted principle use.

Bulk Regulations:

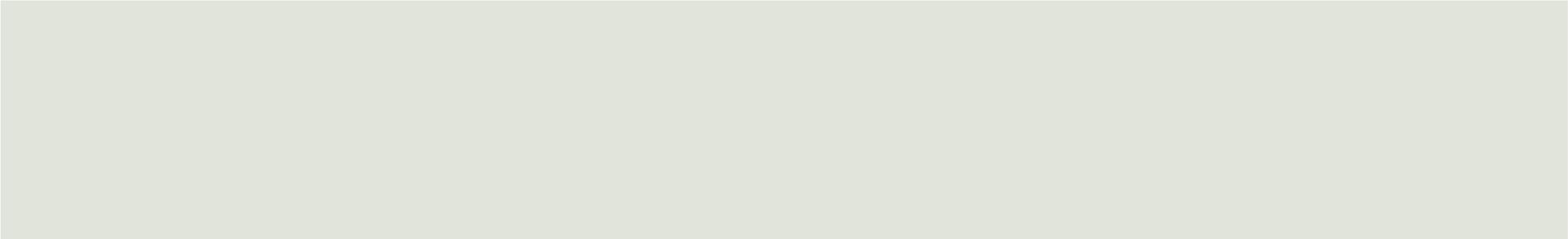
Front Yard Setback (required from all public/private street frontages)	50 ft
Side Yard Setback	50 ft
Rear Yard Setback	50 ft
Principle Building Perimeter Setback from Adjoining SFR	n/a
Minimum Principle Building Separation	n/a
Minimum Principle and Accessory Building Separation	n/a
Detached Accessory Structure Setbacks	n/a
Principle Structure Maximum Height	No limit
Minimum % Open Space	n/a
Maximum FAR	n/a
Maximum DU / AC	n/a
Minimum Lot Size	n/a
Minimum Lot Width	n/a
Building Type	n/a

Conservation and Open Space (COS)





General Site Planning &
Circulation Guidelines



Equipment Screening and Outdoor Displays and Sales

Outdoor Storage and Loading Docks

Outdoor storage of any products, materials, debris, garbage, carts or equipment of any kind is prohibited except as provided herein. All loading docks and areas shall be located behind the principal structures screened from view of all public and private streets and adjoining properties through a combination of screen walls, fences, and landscaping.

Trash, Grease, and Recycling Containers

All trash, grease, and recycling containers and dumpsters must be fully contained within a building or otherwise confined within a walled permanent enclosure with opaque gates. Said enclosures must be either incorporated as part of or located behind the main structures in an inconspicuous area and be of sufficient height to completely screen from view the containers. The enclosure and gates must be of durable materials that match the finish materials of the primary structure. Wood or composite material fencing is not an acceptable enclosure material except for the enclosure doors or gates. Landscaping should be added around the enclosure to soften its visual impact.

These regulations do not apply to individual trash and recycling bins for single family detached residential and row house units that each have their own containers.

Back-up Power Generators, Ground-Mounted HVAC Equipment, Chillers, Solar Equipment, Towers, and Satellite Dishes

All back-up power generators and ground-mounted HVAC equipment, including chillers, must be fully screened from view of public and private streets and adjoining properties. Screening shall be accomplished by a combination of screen walls and landscaping. Said equipment should be located behind the principal structures in areas to minimize the noise impact on adjoining properties. All equipment must be designed, enclosed, and/or muffled to produce minimal noise and shall comply with the City's noise control regulations.

Any solar collectors or photovoltaic panels shall not be visible from any public street, must be incorporated into the roof structure of an approved principal structure, and shall protrude no further than four (4) inches from the roof surface.

Communications towers and wind turbines are prohibited within Kettlestone. Satellite dishes 24 inches in diameter and smaller should be located so not to be visible from a public or private street. All other satellite dishes must be completely screened from view.

Utility meters and exposed utility conduits, pipes, and cables

Utility meters shall be located within an enclosure or otherwise located in an inconspicuous area and screened from view with a combination of screen walls and landscaping. All utility conduits, pipes, cables, and roof access ladders shall be fully concealed within the structure.

Public and Private Utilities and Easements

When practical, all public utility easements should be located along the rear of properties and outside of any required buffer parks so not to limit the ability to plant and maintain landscaping, especially along the street frontage. Above ground utility boxes, transformers and equipment should also be located in the rear of properties and behind the principal structures to minimize their visual impact. When possible, transformers should be enclosed within the trash screen walls and landscaping, including ornamental grasses, should be planted around these structures - subject to any required safety clearances.



Acceptable Examples of trash enclosures and screening

Not Acceptable examples of trash enclosures and screening

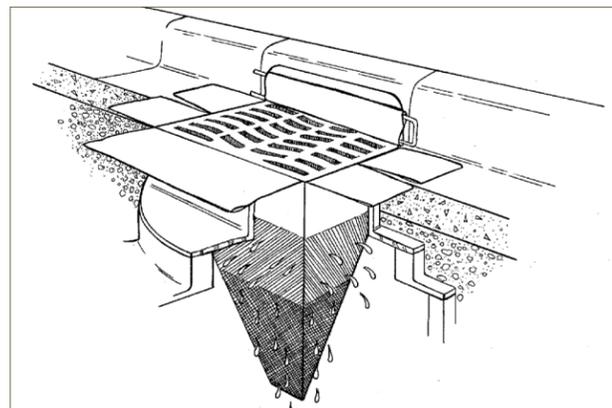
Grading and Erosion Control

- I. Coordinate with the City of Waukee to determine the storm water detention requirements for individual parcels within the Kettlestone district. Some parcels have previously been accounted for with the appropriate storage quantities within the regional detention facilities constructed by the City. A Storm Water utility fee (See the attached Storm Water Fee District section of the guidelines) is required for those developments that benefit from the regional detention.
- II. Additional storage, if required, should be constructed adjacent to the existing regional detention when applicable, and provide an overland flowage easement or connection to the existing regional detention. The intent of the design is to eliminate small detention basins that litter the landscape. Developers are further encouraged to utilize these connections to connect their development to the greenway via trails and complimentary landscape features.
- III. Topsoil depth shall be verified and documented on each site prior to construction beginning. The contractor shall follow the City's current standard for minimum topsoil depth. The increased depth of topsoil reduces the need for irrigation and promotes infiltration of storm water as well as provides a fertile base for plants.
- IV. Developer must comply with all NPDES requirements.
 - Iowa Department of Natural Resources – Iowa Administrative Code: Section 567:
 - Website: <http://www.iowadnr.gov/InsideDNR/RegulatoryWater/NPDESWastewaterPermitting/NPDESRules.aspx>
 - Chapter 60 – Definitions / Forms / Rules of Practice
 - Chapter 62 – Effluent and Pretreatment Standards
 - Chapter 63 – Monitoring, Analytical, and Reporting Requirements
 - Chapter 64 – Wastewater Construction and Operation Permits

- V. Developer must complete and abide by the City of Waukee COSESCO checklist.
 - City of Waukee – MS4 Permit Requirements: Website: <http://www.waukee.org/465/MS4-Permit-Requirements>
 - Construction Site Storm Water Runoff Control (COSESCO) Website: <http://www.waukee.org/DocumentCenter/View/141>
 - Construction Site Storm water Runoff Control (COSESCO) Checklist Website: <http://www.waukee.org/DocumentCenter/View/74>
- VI. Developer must complete a Post-construction storm water management program for all sites.
 - Reference BMP Design Manual for post-construction runoff controls within SUDAS. Website: <http://www.iowasudas.org/manuals/manual.cfm?manual=design>
 - Reference All Chapters, but the following three are a priority.
 - Chapter 1: General Provisions
 - Chapter 2: Storm Water
 - Chapter 7: Erosion and Sediment Control
- VII. Owners are encouraged to utilize the City of Waukee's Storm Water Best Management Practices Reimbursement Program.
 - Website: <http://www.waukee.org/468/Stormwater-BMP-Reimbursement-Program>



Silt Fence



Storm Intake with integrated sediment catchment / protection device



Example of a small detention basin. This type of detention is discouraged within Kettlestone.



Kettlestone Greenways

Vehicular Access Management

Introduction

The following Access Management Guideline for the Grand Prairie Parkway corridor from Interstate 80 to Hickman Road was developed to promote safe and efficient vehicular circulation. Iowa SUDAS is the minimum standard for the development of the Guideline. The Grand Prairie Parkway corridor was analyzed using a posted speed of 40 mph and a design speed of 45 mph. The goal of this Access Management Guideline is to provide a balance between traffic flow and development access/circulation. To achieve this goal, three access priorities are defined for the corridor.

- Priority #1 is to provide full signalized access intersections along the Grand Prairie Parkway corridor. Signalized intersections provide for the regional traffic flow and the reasonable movement of traffic along the corridor. It allows for ample access and circulation to development. The location of these intersections is considered the highest priority for this corridor.
- Priority #2 is to provide public streets with right-in/right-out access to Grand Prairie Parkway. These public streets provide reasonable circulation to the development adjacent to Grand Prairie Parkway. It is more important to provide consideration /access to these streets rather than private entrances.
- Priority #3 is to provide private entrances with right-in/right-out access to Grand Prairie Parkway. Private entrances or driveways provide reasonable circulation to a parcel. This is the lowest priority of this Access Management Guideline.

Consideration for a lower numbered priority will not be given if it negatively impacts a higher numbered priority. For example, consideration for a right-in/right-out public street (Priority #2) will not be given if the right-in/right-out street negatively impacts a nearby signalized intersection (Priority #1). Similarly, a right-in/right-out private driveway (Priority #3) will not be given consideration if it negatively impacts a nearby right-in/right-out public street (Priority #2).

Signalized Intersections

The location of the signalized intersections along Grand Prairie Parkway is the first priority of the Access Management Guideline. Iowa SUDAS recommends uniform traffic signal spacing to provide efficient traffic signal progression in a corridor. A desirable signal spacing of 1/4 mile should be used for all Priority #1 signalized intersections along Grand Prairie Parkway. This signal spacing is set based on providing reasonable traffic progression on Grand Prairie Parkway. Exhibit 44-1 shows an aerial image of the Grand Prairie Parkway corridor indicating the locations of the listed signalized intersections.

The following roadways are planned to be signalized on Grand Prairie Parkway:

- | | |
|--------------------------------|--|
| - I-80 Ramps | - Future Westtown Parkway |
| - Future Kettlestone Boulevard | - Future SE Pleasant View Drive |
| - Ashworth Road | - Future SE Prairie Park Lane |
| - Future Esker Ridge Drive | - University Avenue (currently signalized) |
| - Future Altamont Trail | |

Text from the Access Management Guideline: SE Alices Road Corridor Report as produced by Foth Engineering for Waukege Iowa. June 4, 2014.

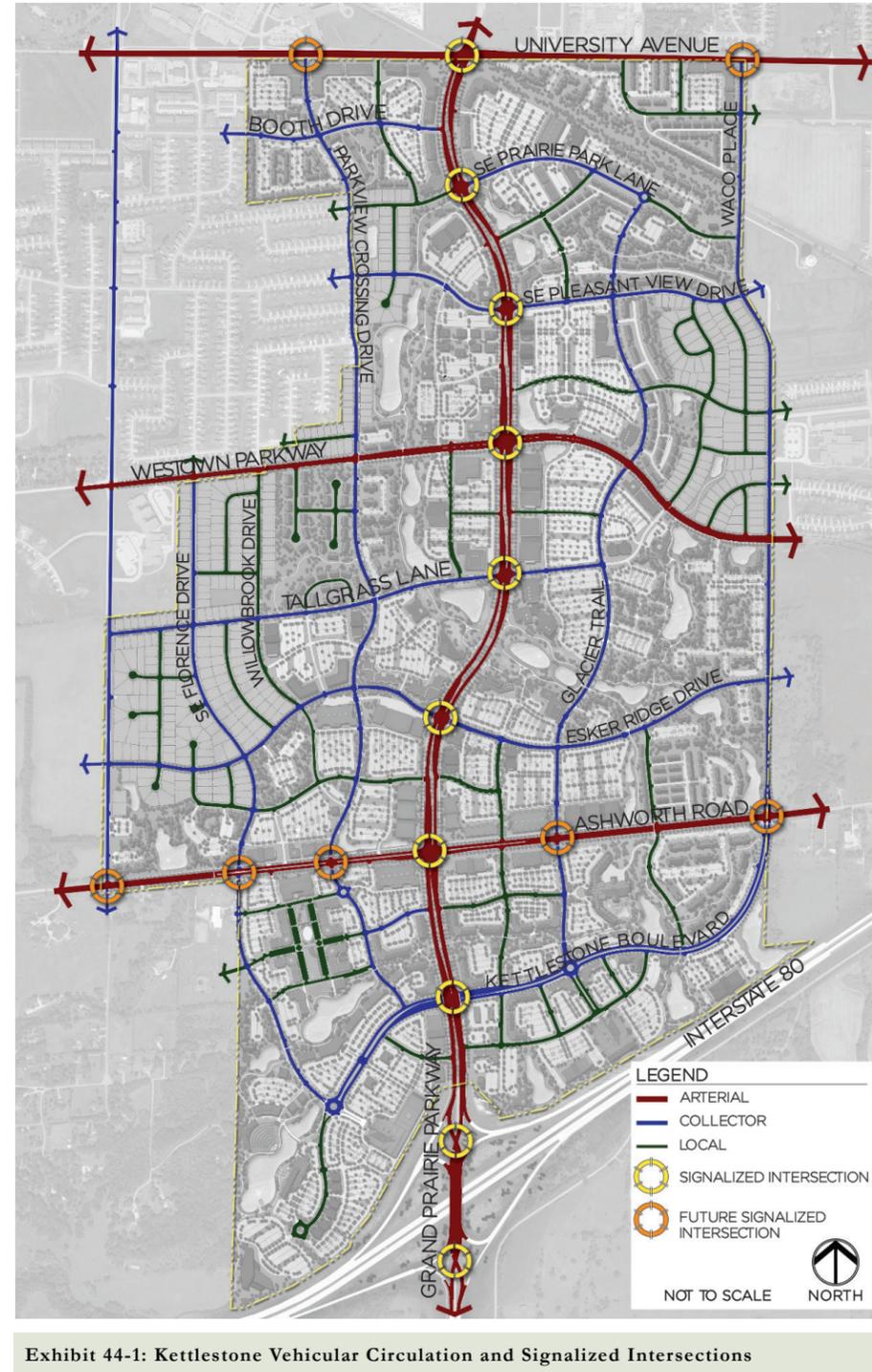


Exhibit 44-1: Kettlestone Vehicular Circulation and Signalized Intersections

Intersection Functional Area

Each priority #1, #2, and #3 intersection is comprised of both a physical and functional area. The Priority #1 intersection functional area sets the location for other adjacent intersections. A schematic representation of these two areas is depicted in Figure 44-2 below. The physical areas of the intersection is bound by the crosswalks or the area where the roadways cross. There are two functional areas for an intersection, one upstream and one downstream.

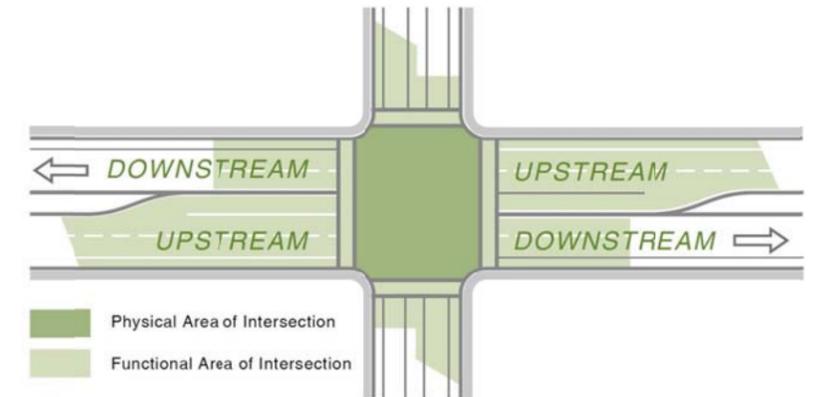


Figure 44-2: Comparison of the Intersection Physical and Functional Area¹.

Access should not be granted within the functional area of a priority #1 signalized intersection along Grand Prairie Parkway. Keeping the functional area free of Priority #2 and #3 access points allows for improved capacity and mobility of the corridor. It is also safer since there will be reduced driver conflict and crashes. Figure 44-3 depicts the appropriate placement of Priority #2 and #3 access points between the functional areas of two intersections along Grand Prairie Parkway.

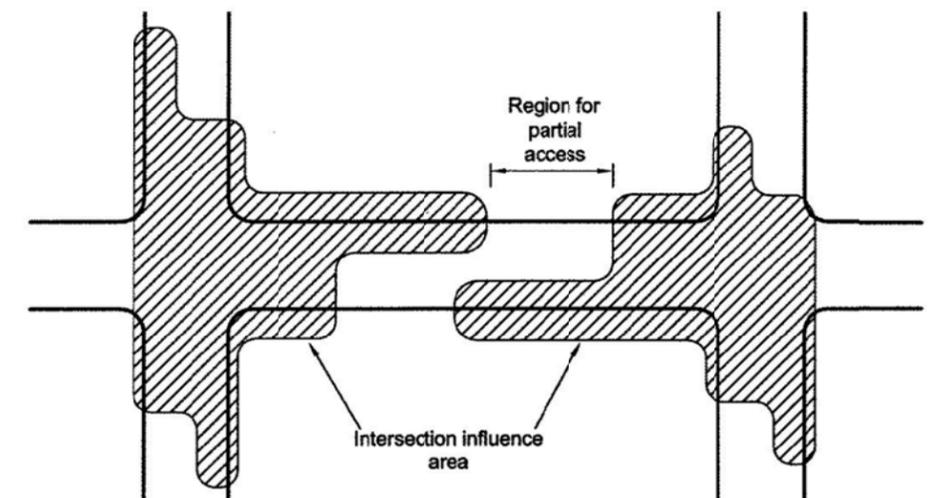


Figure 44-3: Partial Access Between Functional Areas².

Upstream Functional Area

The upstream functional area is composed of three components: perception-reaction distance, maneuver distance, and queue storage distance. Figure 45-1 shows the location of these components included in the upstream functional area.

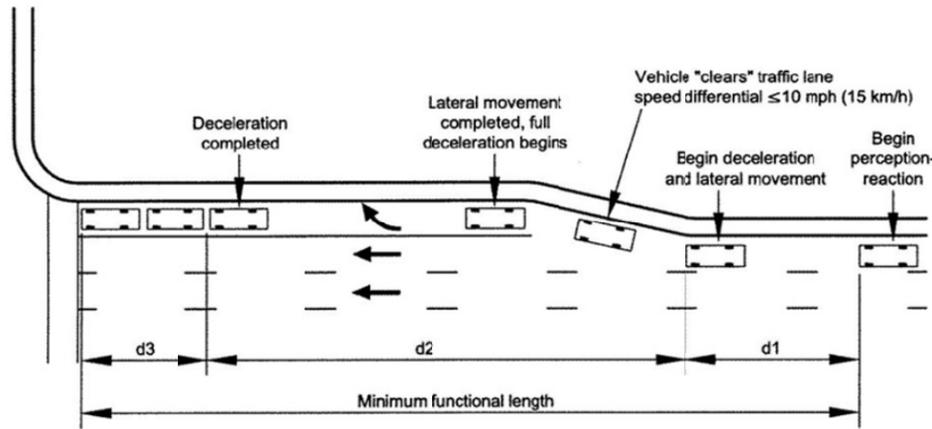


Figure 45-1: Minimum Upstream Functional Area².

- Perception Reaction Distance (d1): This is the distance traveled during perception-reaction time as a driver approaches the intersection. It is based on speed. The equation for perception-reaction distance is³:

$$d1 = 1.47 S t$$

$$d1 = 1.47 (45 \text{ mph})(1.5 \text{ seconds})$$

$$d1 = 100 \text{ feet}$$

Where:

- $d1$ = the perception-reaction distance in feet
- 1.47 = the conversion factor from miles per hour to feet per second
- S = the speed in miles per hour (45 mph for Grand Prairie Parkway)
- t = the reaction time in seconds (1.5 seconds in urban areas)

- Maneuver Distance (d2): This is the deceleration distance required by a vehicle to travel from the through lane to a turn lane and come to a complete stop upstream of the intersection. This distance is equal to 350 feet at the 45 mph design speed.
- Queue Storage Distance (d3): This is the length required in a turn lane for stored vehicles waiting to make a turn. This distance is based on the expected queue at the intersection however it should not be less than 50 feet.

The above calculation provides the desirable functional area. The practical upstream functional area for the Grand Prairie Parkway corridor will be no closer than 100 foot before the start of the right turn lane taper or no closer than 90 foot after the start of a left turn lane taper.

Downstream Functional Area

The downstream functional area of an intersection is the distance required by the driver to clear the intersection and be able to perceive and react to a conflict downstream of the intersection. Stopping sight distance is often used for this. For this Access Management Guideline the downstream functional area of all Priority #1, #2, and #3 access points is 360 feet along Grand Prairie Parkway. This distance is based on the stopping sight distance for a speed of 45 mph (the design speed for the Grand Prairie Parkway corridor).

Right-In / Right-Out Intersection Spacing

All non-signalized access points including Priority #2 public streets and Priority #3 private driveways along Grand Prairie Parkway will be right-in / right-out. For these intersections three criteria need to be met: location from Priority #1 signalized intersection, spacing between other priority #2 and #3 intersections, and number of Priority #2 and #3 intersections per mile.

Location Criteria

The location of a Priority #2 or #3 right-in/right-out access point needs to comply with the following three location criteria. All three criteria shall be met to allow an access point along Grand Prairie Parkway.

1. The edge of the access point shall not be closer than 100 feet before the start of the right turn lane taper.
2. The center of the access point shall not be any closer than 90 feet after the start of a left turn lane taper.
3. The edge of the access point shall not be any closer than 360 feet downstream of a Priority #1 signalized intersection.

Figure 45-2 illustrates these three location criteria.

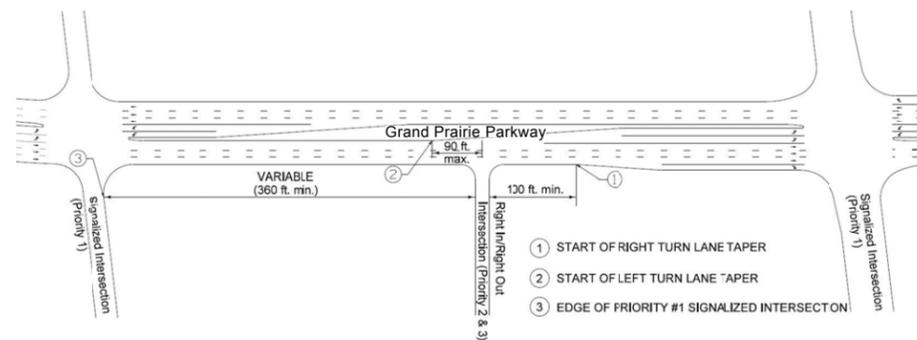
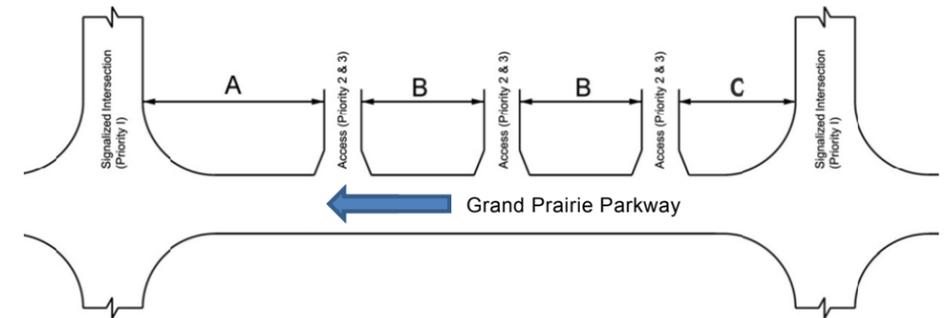


Figure 45-2: Right-In / Right-Out Location Criteria

Spacing Criteria

There should also be a minimum spacing between Priority #2 and Priority #3 access points to prevent right turn overlap. A minimum 350 feet edge to edge spacing shall be provided between all Priority #2 and Priority #3 access points.

Figure 45-3 illustrates the required location criteria from a Priority #1 signalized intersection and the spacing criteria between Priority #2 and #3 access points.



- A = See Figure 45-2
- B = 350 foot minimum
- C = 360 foot minimum

Figure 45-3: Right-in / Right-out Spacing Criteria

Access Spacing

In addition to the above spacing and location criteria the Priority #2 and #3 access points will be limited to a maximum number per mile. There should be no more than four (4) Priority #2 and #3 access points per mile along the Grand Prairie Parkway Corridor. These four locations are in addition to the Priority #1 signalized intersection as previously stated. Since all Priority #2 and #3 intersections shall be right-in/right-out the four access points per mile spacing is in each direction of travel.

Side Road Access Point Spacing

Providing adequate space between Grand Prairie Parkway and an access point along an intersecting side road is important so a driver can clear the Grand Prairie Parkway intersection and be able to perceive and react to a vehicle turning into an access point. The spacing between Grand Prairie Parkway and the first access point along an intersecting side road is indicated in Table 45-4.

Table 45-4: Downstream Functional Area

Design Speed (mph)	Downstream Functional Area (feet)
45	360
40	305
35	250
30	200

Traffic Calming

Grand Prairie Parkway is the main artery connecting Waukee to I-80, fed by two additional arterial roadways, University Avenue and Ashworth Road. A series of collector roadways further expand the traffic network. The intent of the arterial and collector street network is primarily to provide for the efficient movement of vehicles through the district. However, the smaller interior local roadways throughout mixed-use areas within Kettlestone should be designed to keep traffic moving smoothly at slower speeds typical for residential areas and streets with pedestrian and bicycle traffic. To accommodate this, developers and designers should consider and evaluate applying the following:

1. Provide angled or parallel parking along roadways. (60° preferred)
2. Add dedicated or shared bicycle lanes and markings, including marked crossings.
3. Narrow Crosswalk distances by providing corner bump-outs. (22' preferred)
4. In key areas raise the paving to the Pedestrian level – (speed table effect).
5. Crosswalks and Mid-block crossings should be accented with Concrete Pavers and other treatments to announce the crossing to motorists.



Clockwise from top left: landscaped median, diverging-diamond intersection, speed-table, and landscaped intersection bump-out.

Pedestrian and Bicycle Circulation

Pedestrian Experience

Kettlestone is intended to be a very walkable development when complete. All developments will be required to connect to and/or develop additional pedestrian spaces. The City of Waukee is committed to the investment of pedestrian underpasses that provide unrestricted access to the greenways flanking Grand Prairie Parkway. The collection of kettles (ponds) and native plantings will further enhance the visual appeal of the greenway. A similar investment and attention to detail by developers is expected when making connections to the many greenways.

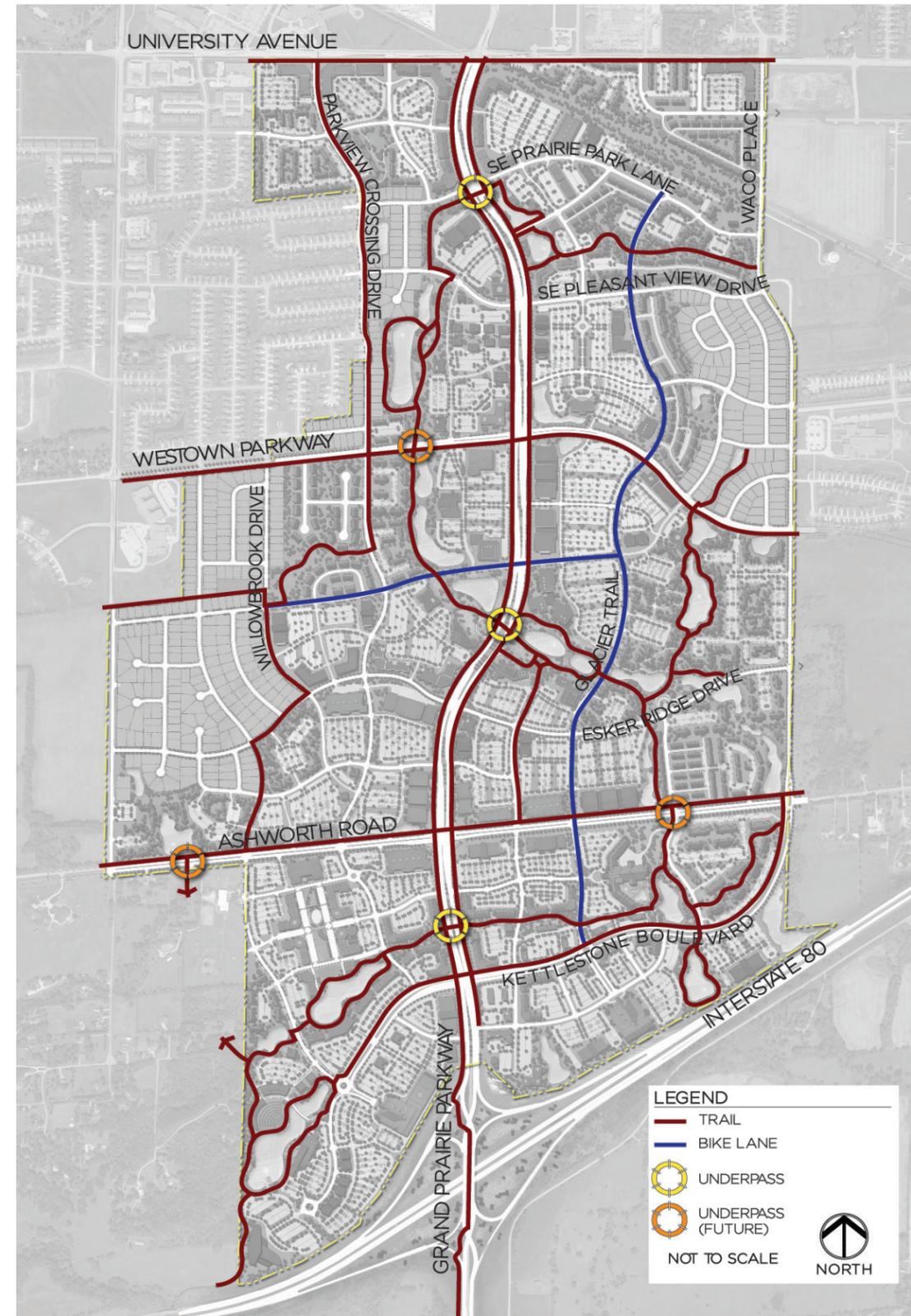
The pedestrian experience should be a priority for all developments within Kettlestone. In commercial and retail areas, pedestrians should be allowed to window shop as they travel along a pedestrian scale store front environment. Office developments should be oriented to capture views of the greenways and shall provide outdoor seating areas that overlook and connect to the trail system. Residential developments should provide direct access to the trail system.

Map 47-1 details the anticipated locations of public trails within Kettlestone. Trails located within the city-owned greenbelts will be constructed by the City of Waukee. Trails located within public street rights-of-way shall be constructed by the adjoining property owner/developer at the time of development with the City reimbursing the owner/developer for fifty percent (50%) of the cost of the trail. All Property that is adjoining a public trail shall make one or more internal private trail connections to the public trail.

Bicycle Circulation / Parking

The City of Waukee is a bicycle friendly community. The Raccoon River Valley trail connects to the Clive Greenbelt Trail system which extends to downtown Des Moines. The Kettlestone greenway and trail system will connect to this existing network to the North. As expansion takes place, the Sugar Creek trail system will be extended South of Interstate 80 and into West Des Moines. Kettlestone will also connect to this trail system. Streets classified as collectors can be considered bicycle friendly for bicycle commuters. When complete this development should be very well connected and will serve as a trail head for many bicycle commuters.

As the demand for the trails increases so will the demand for bicycle parking. To accommodate this demand and promote additional bike traffic, Kettlestone has established a minimum bike parking requirement. The number of bicycle parking spaces provided shall be at least equal to three percent (3%) of the number of automobile parking spaces required for all retail and office uses (exclusive of any residential uses) with more than 100 parking stalls. Bicycle facilities shall have convenient access from the building or structure and street or other bicycle lanes, be clean, secure and well lit. When possible they should be located within a building or structure, either on the ground floor, basement, or first level. Bicycle parking facilities are also encouraged at trail heads and near major greenspaces.



Map 47-1: Public Trails

On and Off-Street Parking Standards

Within the Kettlestone district, parking standards have been reduced based on the desire to promote shared parking and a greater emphasis on alternative modes of transportation including walking and bicycling. When possible, on-street parking (on public and private streets) should be encouraged to supplement area parking. At the discretion of the City Council, on-street parking is generally permitted on local and minor collector public roadways within residential areas and credit for on-street parking on private roadways may be given for retail and office uses. At the discretion of the City Council, some credit may be given for shared parking between adjoining uses that are off-peak from each other.

In general, two (2) parking spaces are required to be dedicated for each dwelling unit and one (1) parking space is required for every 250 sq. ft. of office or retail use. All other uses must be parked per the rates identified in the City’s Zoning Code. Table 48-1 summarizes the parking requirements for residential, retail, and office uses within the Kettlestone district.

Drive-Thrus

All food and beverage service drive-thrus shall provide a minimum of 11 vehicle queuing spaces per drive-thru, 5 of which must be located ahead of the ordering station if separate from the pick-up window. All other drive-thru and pick-up windows shall have a minimum of 4 vehicle queuing spaces. Queuing spaces shall be a minimum of 12 feet wide and 20 feet long and must be located within any driveway or parking lot drive aisle and cannot block any designated parking spaces.

Use	Parking Rate
Single and Two Family Residential Dwellings	2 spaces per dwelling unit
Rowhouses and Townhomes (horizontally attached only)	Minimum of 1 garage space per unit and a total of 2 spaces per unit
Multi-Family Residential - Apartments and Condominiums (maximum 14 dwelling units per acre)	Minimum of 1 garage space per unit and a total of 2 spaces per unit + 1 visitor space per 5 units
Multi-Family Residential - Apartments and Condominiums (more than 14 dwelling units per acre)	2 spaces per dwelling unit + 1 visitor space per 5 units
Retail and Office Uses	1 space per 250 sq. ft. of gross floor area
Multi-Tenant Retail Centers	1 space per 250 sq. ft. gross floor area + the area of any outdoor seating
Mixed Use Buildings	1 space per 250 sq. ft. of gross floor area (retail/office) + 2 spaces per dwelling unit.
Restaurants, Coffee Shops, and Bars	15 spaces per 1,000 sq.ft. of gross floor area + area of any outdoor seating
All other Uses	Per City Zoning Code

Table 48-1: Parking Requirements

Parking for Persons with Disabilities

All parking areas must comply with the federal, state and local laws regarding the provision of parking spaces for persons with disabilities including but not limited to Iowa Code Chapter 321 (L) and the Americans with Disabilities Act. Per the Iowa Code, the Table 48-2 provides the current minimum total number of parking spaces required for persons with disabilities.

Total Stalls Provided	Minimum Number of Parking Spaces Required for Persons with Disabilities
10 to 25	1
26 to 50	2
51 to 70	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1000	2 Percent of Total
1001 and Over	20 spaces plus one for every 100 over 1,000

Table 48-2: Parking Requirements for Persons with Disabilities

Angle of Parking Space (Degrees)	Minimum Stall Width (Feet)	Minimum Aisle Width (Feet)
0	9	14
45	12	15
50	12	15
55	12	17
60	10	17
65	10	17
70	9	19
75	9	19
90	9	24

Table 48-3: Drive and Parking Stall Dimensions

Driveway and Parking Lot Design Standards

Single and Two Family Residential Dwellings

The minimum driveway width shall be 10 feet and said driveways shall be a minimum 4 inch thick PCC paving. The driveway approach and public sidewalk shall comply with the City’s design standards. Driveways shall be located no closer than 2 feet of an adjoining property unless said driveway is shared with or connected to the driveway of the adjoining property.

Multi-Family Residential, Commercial, and Office

The individual driveway to separate attached garages for Rowhouse units may meet the standards of Single and Two Family Residential Dwellings.

To afford a tandem parking space within a driveway, a minimum depth of 20 feet shall be provided between the face of the garage and the sidewalk, the public street right-of-way line, the back of curb or easement line of a private street - whichever is closer.

Paving and Markings

All common driveways and parking lots shall be minimum 5” thick PCC or 6” thick HMA paving with integral 4” tall PCC curbs along all pavement edges. Wheel stops are prohibited. All private streets shall be constructed to public street design standards. All private streets, parking lots and driveways shall be adequately maintained to allow for the free and safe movement of traffic and emergency service vehicles and should be signed and striped according to Manual on Uniform Traffic Control Devices (MUTCD) standards from the Federal Highway Administration (FHWA).

Drive and Parking Stall Dimensions

The minimum width of a one-way driveway shall be sixteen (16) feet, and the minimum width of a two-way driveway shall be twenty-four (24) feet.

The minimum length of all parking spaces shall be nineteen (19) feet. Any proposed parking space of an angle other than specified in this section shall have a sufficient width and length of no less than nine (9) feet by nineteen (19) feet measured from face of curb.

Any parking space parallel to a wall or other solid barrier shall be widened by an additional two feet. All parking spaces abutting a sidewalk shall have a minimum sidewalk width of six (6) feet. When the front of a parking space abuts open space within the perimeter of the parking lot, the minimum width of the open space shall be five (5) feet. When the front of a parking space abuts an open space or sidewalk as defined herein above, the stall length may be decreased a maximum of two (2) feet. This reduction is only applicable to off-street parking

Setbacks

No parking may be within 25 feet of a property used or zoned for Single and Two Family Residential Dwellings and Rowhouses. A minimum parking lot setback of 10 feet is required from all public and private street rights-of-way and easement lines, and a minimum five (5) foot parking lot rear and side yard setback is required. The certain side and/or rear yard setback requirement may be waived by the City Council if the parking lot is interconnected with the parking lot of the adjoining property.

Traffic and Pedestrian Intersection Vision Clear Zones

In all zoning districts for all uses, the following vision clearance zones shall be maintained to provide for vehicular and pedestrian traffic visibility.

I. Vision Clearance:

- A. Intersections: On a corner lot or at the intersection of two (2) streets, public and/or private, nothing shall be erected, placed, planted or allowed to grow in such a manner as to impede vision between a height of two and one-half feet (2½') and ten feet (10') above the centerline grades of the area described as follows:
 1. That area bounded by the street right-of-way lines of a corner lot and a straight line joining points on said right-of-way lines twenty-five (25) feet from the point of intersection of said right-of-way lines (see Figure 49-1).



Figure 49-1: Intersection / Corner Lot Vision Clearance

- B. Driveways: At the intersection of a driveway and a public or private street, nothing shall be erected, placed, planted or allowed to grow in such a manner as to impede vision between a height of two and one-half feet (2½') and ten feet (10') above the centerline grades of the area described as follows:
 1. That area bounded by the street right-of-way line and the intersecting driveway line and a straight line joining points on said right-of-way line and driveway line fifteen (15) feet from the point of intersection of said right-of-way line and driveway line (see Figure 49-2).

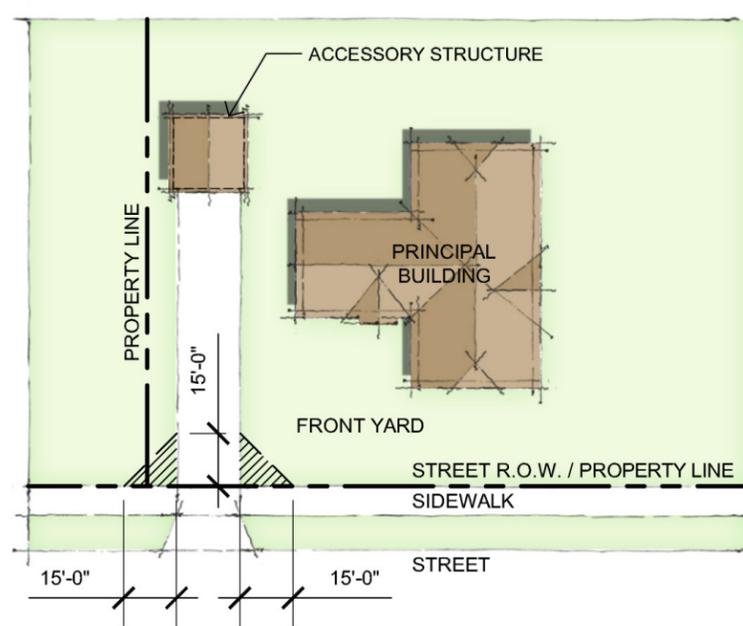


Figure 49-2: Driveway Vision Clearance

- C. Undeveloped Property: At the intersection of an undeveloped adjoining property line and the right-of-way line of a public or private street, nothing shall be erected, placed, planted or allowed to grow in such a manner as to impede vision between a height of two and one-half feet (2½') and ten feet (10') above the centerline grades of the area described as follows:
 1. That area bounded by the street right-of-way line and the intersecting adjoining undeveloped property line and a straight line joining points on said right-of-way line and property line fifteen (15) feet from the point of intersection of said right-of-way line and property line (see Figure 49-3).

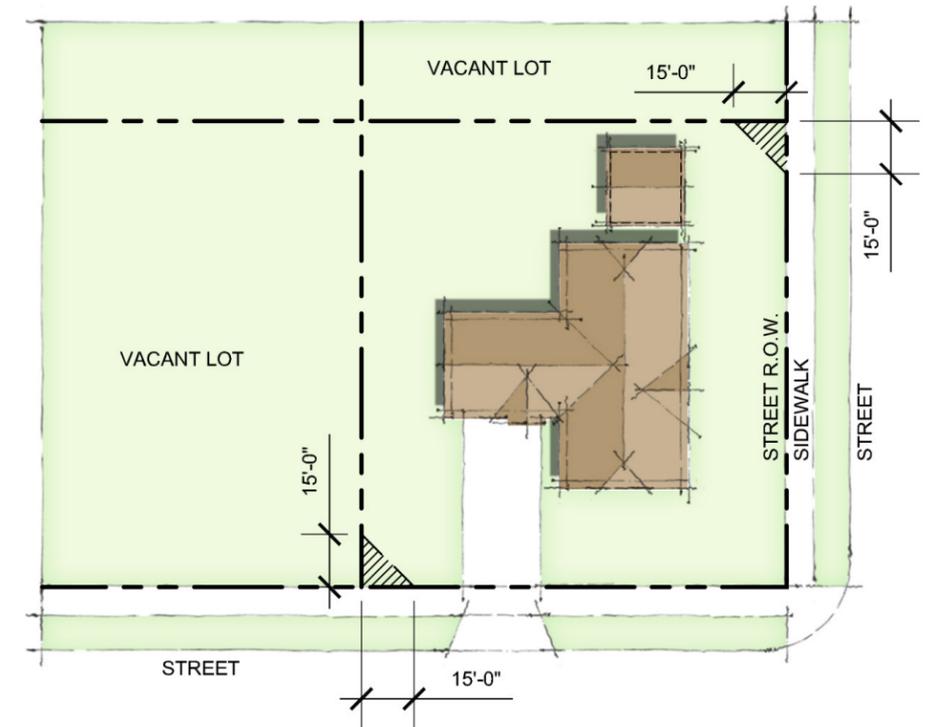
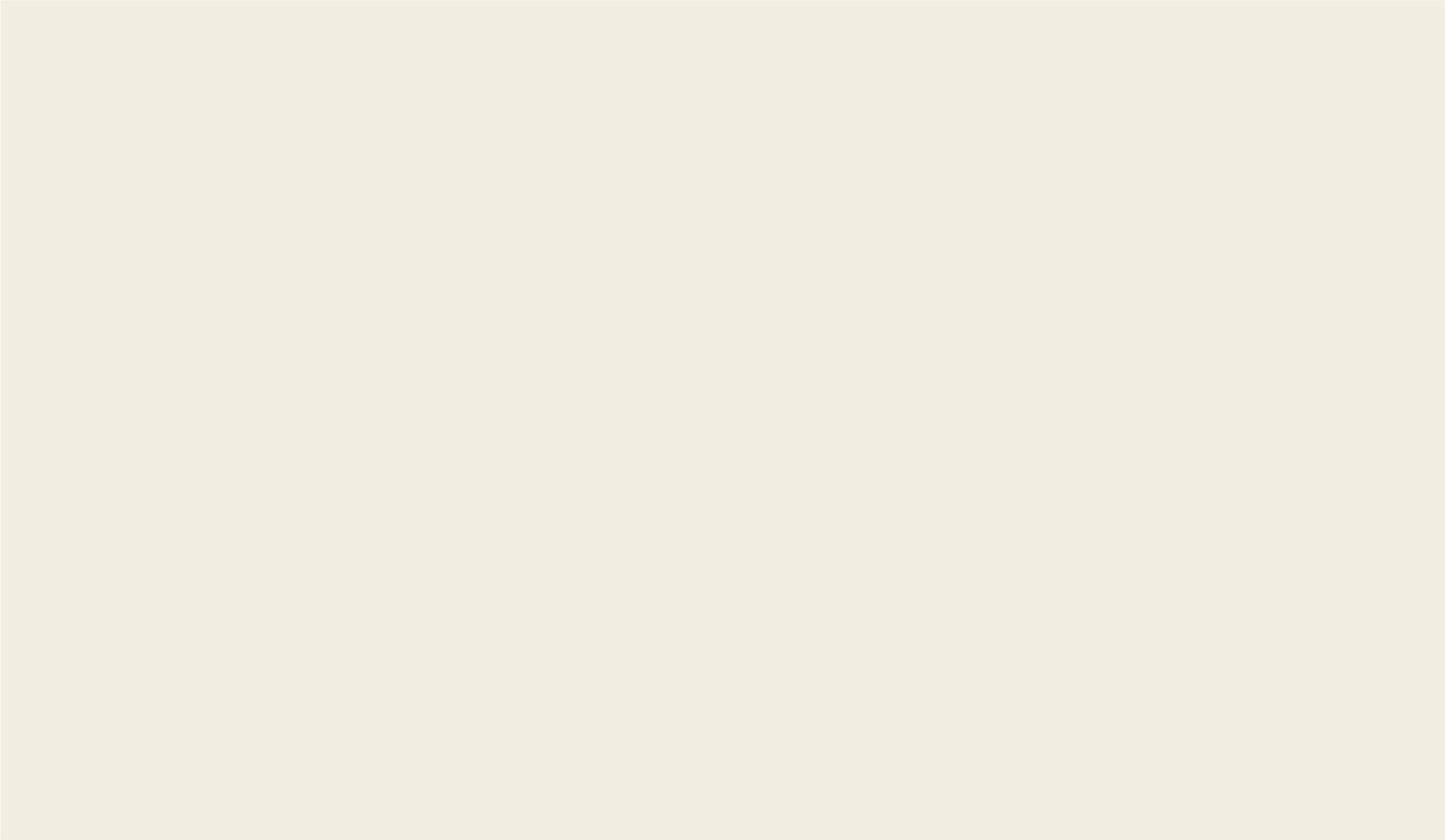
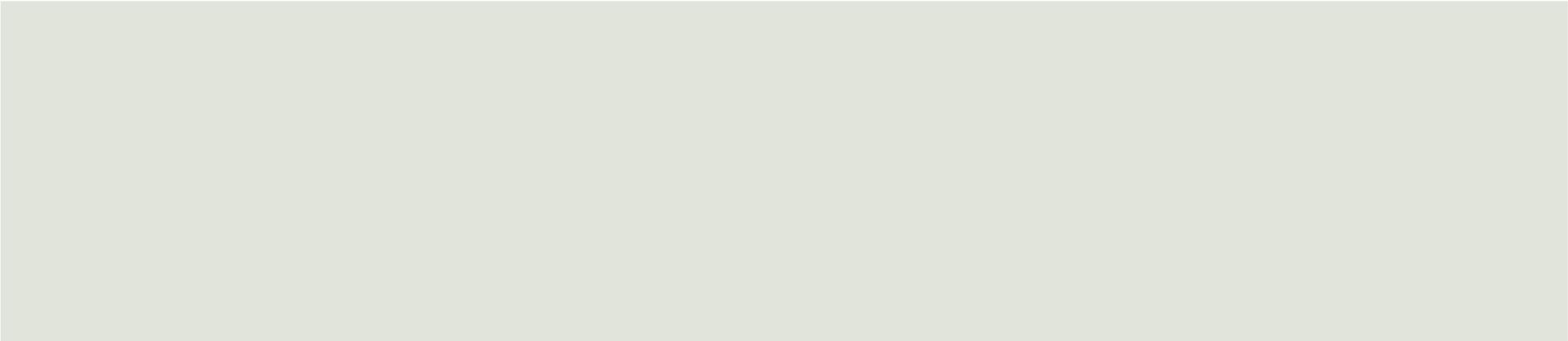


Figure 49-3: Undeveloped Property Vision Clearance

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Sustainable Design Guidelines



Intent

Overview

- Development should complement the surrounding area and connect to the existing open space framework established by the Kettlestone Master Plan.
- Projects should promote sustainability practices.
- Recognize the importance of cohesive public space and its' impact on the people who use it.
- Commercial streets are active engaging spaces that place pedestrian safety first and vehicles second.
- Promote building transparency and encourage people to get outdoors and live active lifestyles.

References

All developers and designers are encouraged to reference the assortment of design manuals that guide sustainable development. LEED, The Sustainable Sites Initiative, and Complete Streets are three of the most applicable to the Kettlestone area. However, this document will not set a minimum standard for development. (Silver, Platinum, etc.) It does express an expectation that the principles outlined in this section need to be referenced and examples of their implementation need to be documented during the submittal process with a sustainability statement. This statement will be attached to the site plan submittal and shall outline all of the steps being taken to address the issues outlined in this section.

Site Design

Site Context

Building Location

- Parcel development should consider the existing landscape first. Drainage patterns, sun angles, existing vegetation predominant winds, etc. should all be considered prior to any architecture being designed. Buildings shall be designed to work with the landscape.
- Pedestrian connectivity and a relationship with outdoor spaces shall be considered with outdoor access provided on at least two sides and engaging the public space when the program allows.
- Orient the building to take advantage of natural light source and reduce lighting cost.

Protect Floodplain Functions

- The Kettlestone corridor has a collection of green spaces that is intended to serve as the main conveyance of storm water through the corridor. The Kettlestone Master Plan was created with the intent of eliminating most individual parcel detention areas, and minimize the use of underground storm water conveyance methods.
- If it is determined that a development needs supplemental detention – all efforts need to be made to locate it near the existing drainage corridor and it should be constructed to blend in to the established landscape framework in construction methods and landscape character.

Conserve, Protect, or Restore Habitat

- Throughout this development the oak savannah, the native prairie, and the natural habitat have all but been eliminated by modern farming practices. Developers and designers should strive to plant open space areas with native species in an attempt to re-establish some of these naturally functioning ecosystems. (See Landscape Guidelines for recommendations)
- Natural surroundings should be considered. The development intends to work with nature and not harness it. The greenbelt created within Kettlestone should be used as an example and expanded upon within adjacent parcels and beyond.

Soils and Vegetation

Soil Erosion Control Measures

- Developers shall abide by all State of Iowa and City of Waukee standards.
- NPDES Permit guidelines shall be followed.

Conserve Healthy Soils

- Topsoil shall be preserved and stockpiled on site or nearby.
- A soils report shall be completed for each parcel developed. After development, topsoil should be replaced in compliance with the City's MS4 permit (Keeping a similar depth of topsoil allows the natural systems to function as intended. This will encourage infiltration, decrease runoff, increase the success of all plantings, and minimize irrigation needs.)

Parking Lot Islands

- Parking lot and tree plantings shall be used to reduce the Urban Heat Island effect. (See Parking Lot guidelines and Landscape Guidelines for specifics.)



Storm Water

Connection to the Established Drainage Corridor / Greenbelt

- All developments shall work with the Storm Water District principles and guidelines.
- The greenbelt corridor is intended to serve multiple purposes for this district and has been sized appropriately to accept many adjacent parcels' runoff. If additional storage is necessary it needs to be of similar character and vegetative quality to those within the greenbelt.

Quantity Management

- All storm water regulations shall apply to the Kettlestone District, per the City of Waukee code.
- Weir structures where necessary will match the existing City installed Kettlestone weir structures.



Above: Bioswale Parking Lot Median

Quality Management

- Green infrastructure practices should be utilized whenever possible.
- Utilize bio-swales in place of pipes where possible.
- Buffer plantings shall be installed to filter water prior to entering the storm drain systems.
- Utilize best management practices for storm water management methods to slow water down and allow it to infiltrate the soil and have particulates settle out of it prior to entering the drainage system.

Detention/Retention Requirements

- Porous paving shall be considered in certain areas and on a limited basis until further research is completed on the effectiveness of the applications. On a case by case basis the City will review the design of each system.
- All detention/retention ponds shall be designed to match the natural character of the greenbelt. No concrete edges or chain link fence enclosures will be accepted.

Health and Well Being

Provide Optimum Site Accessibility, Safety, and Way-Finding

- All developments shall plan for and provide easy pedestrian access to an adjacent trail or greenbelt.
- Trailhead connections shall be well lit at connection points and provide signage that clearly directs visitors, employees, and residents to the proper entrance locations.

Connect to Multi-Modal Transportation Systems

- Developers shall embrace the bike and pedestrian culture that Kettlestone anticipates by providing accessible bike parking.
- It is anticipated that a bus route will extend along Grand Prairie Parkway and may be extended in the future. All developments shall anticipate growth in this market and coordinate with the City of Waukee and DART to verify desired connection points and bus stop locations.
- Developers should consider providing preferred parking stalls for hybrid and low emitting vehicles, and providing charging stations for electric vehicles.

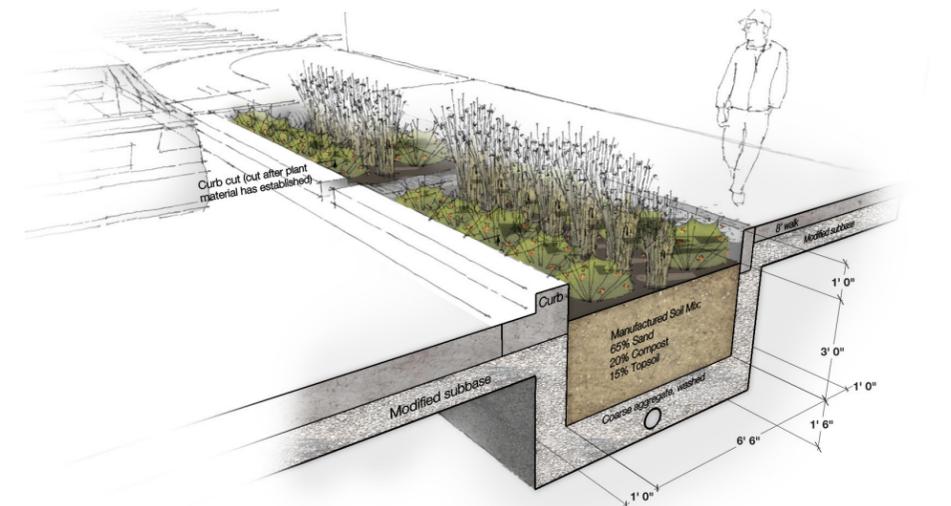
Support Physical Activity and Social Interaction

- Developers are encouraged to activate the 1st floor of their buildings.
- Provide cohesive indoor and outdoor spaces that engage the greenbelt or open space provided.
- Developers and employers should consider providing changing and shower facilities within office buildings for the use of tenants and employees.

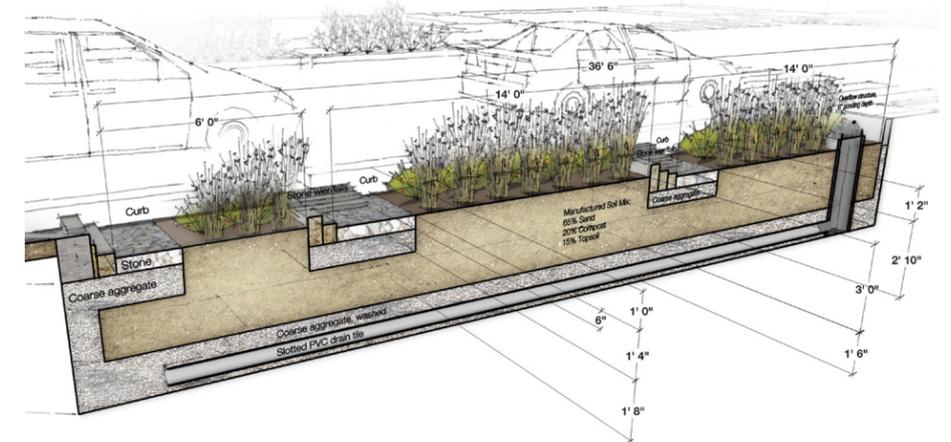
Right: Biocell within private parking lots and on-street



Conceptual Perspective



Cross section



Longitudinal Section

Building Design

Summary

Buildings and campuses within Kettlestone are encouraged to employ sustainable building design and construction practices. Criteria to be considered include site, energy usage, water usage, building materials, indoor environment and operation of the building.

Sustainable Design and Construction Criteria

Energy Use

Optimized energy use and renewable energy sources reduce our dependency on fossil fuel and help establish energy independence. Buildings within Kettlestone are encouraged to help the optimized energy use and renewable energy source effort by three means: 1) reduce building energy load, 2) increase equipment efficiency; and 3) increase utilization of renewable energy sources. Examples of strategy include:

- Insulating the building envelope above the energy code minimum to reduce the heating and cooling load.
- Reducing amount of thermal bridging in building envelope design.
- Enroll in the MidAmerican commercial building energy rebate program which identifies energy saving design strategies and provide utility rebate to building owners (electric only).
- Utilizing high efficiency mechanical and electrical systems and reduce ongoing utility cost.
- Employing renewable energy sources (e.g. solar voltaic panels and geothermal heat pump system).
- The use of wind energy is currently not encouraged; the visual and auditory interruptions that exist with the current technology are not recommended within the Kettlestone area. As efficiencies of smaller scale installations increase, this topic should be re-visited on a case by case basis.
- Creativity and use of future technology is recommended, but district wide character shall be considered over a single parcel.

Water Usage

To reduce potable water usage, new buildings and developments should consider implementing the following strategies:

- Install high efficiency plumbing fixtures
- Utilize high efficiency water consumption appliances (dishwasher, washer, etc.)
- Collect and/or recycle rainwater in cisterns and retention ponds for irrigation purposes.

Sustainable Materials

Building materials impact the environment throughout their entire life cycle. The production and disposal of materials consume energy and natural resources. During their useful life, building materials impact the health and well-being of the building occupants. Properties within Kettlestone are encouraged to select building materials with a reduced environmental impact and promote the health and well-being of the building occupants. When selecting sustainable materials consider the following:

- Materials with a high post-consumer recycled content.
- Materials produced and harvested/mined locally or within a close geographic region.
- Consider reuse of existing materials.

Indoor Environment

Enhance indoor environment with high quality daylight, view, ventilation, acoustics, air quality, and moisture and temperature level. These enhancements increase the productivity, comfort and health of the building occupants. Consider the following strategies to enhance the indoor environment:

- Select interior material that emit no volatile organic compounds (VOCs).
- Provide windows, skylights and or solar monitors to harvest daylight and views.
- Provide operable windows to allow ventilation.
- Balance the windows for daylights and view against energy consumption.
- Consider the acoustical requirements for each space and incorporate acoustical materials into the design of the space.

Operation and Maintenance

As much as 80% of a building's life cycle cost is expended after the initial purchase or construction of the building, 35% of which is associated with the maintenance of the building. Therefore, it is critical the operation of the building is taken into consideration during the early stage of building design. Engage the operators and maintenance personnel to help identify strategies to reduce the cost and environmental impacts during the operation of the building.

The sustainable measures should also be monitored and metered. When appropriate, adjusted to maximize the benefits from the sustainable strategies.

Conclusion

Sustainable buildings employ strategies during its design, construction and operation to reduce the building's environmental impact and life cycle cost; and enhance the occupants' well-being. Within Kettlestone, building projects are encouraged to further the sustainability effort by employing sustainable building strategies.

Construction

Pollutants

Control and retain construction pollutants.

- All construction debris and soil erosion must be controlled as outlined by City of Waukee standards, Iowa Standards and the NPDES Permit requirements.

Waste Diversion

Divert construction debris from disposal

- Developers and contractors are asked to follow the principles of LEED and recycle as many items as possible during construction.
- Site plan submittals should outline what efforts are being made to follow these guidelines.

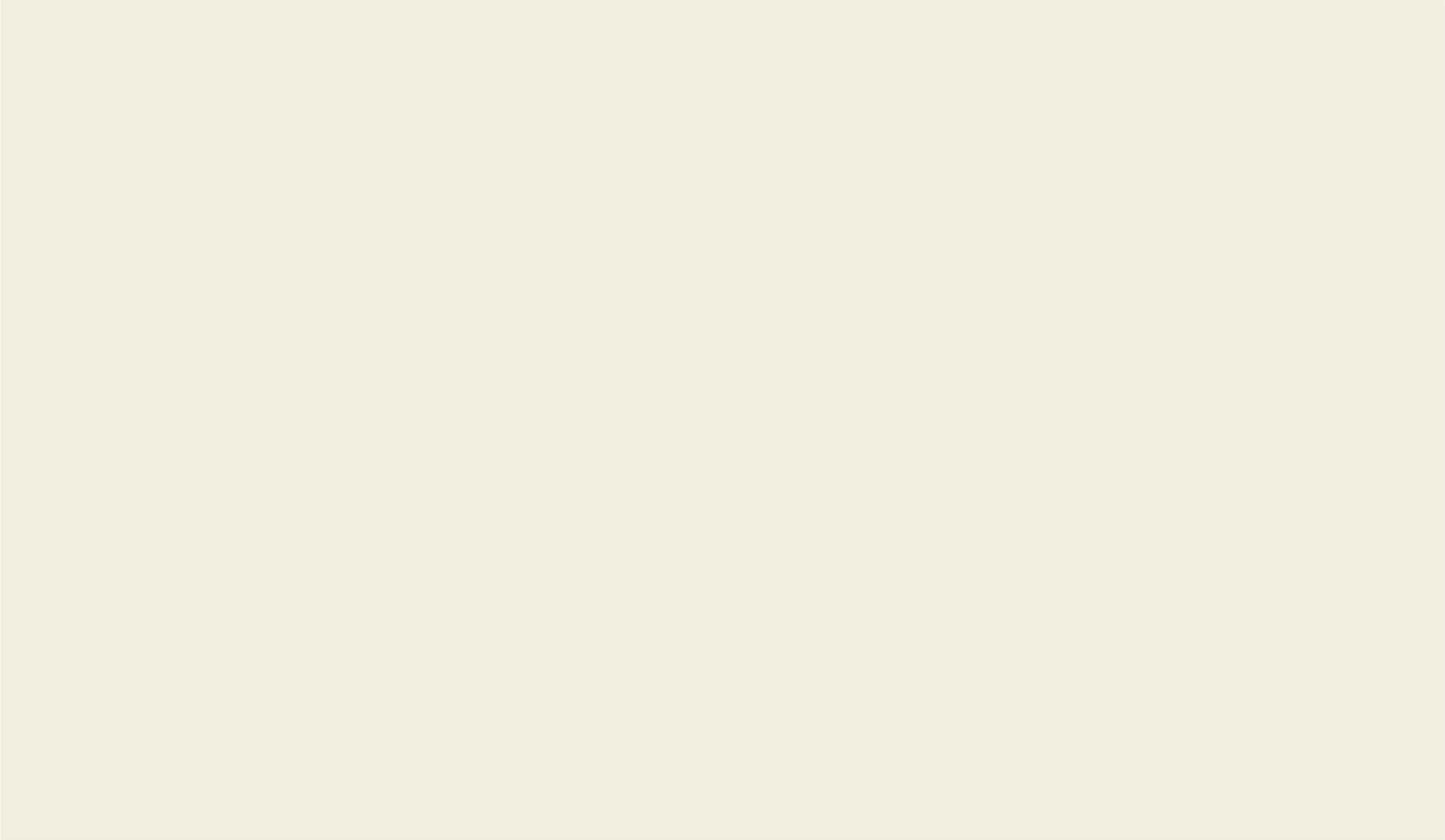
Divert reusable vegetation and boulders from disposal.

- Often during the construction process in this area – boulders (stones that are 1' diameter or larger) are recovered and disposed of. When possible a reasonable number of these shall be stockpiled and re-used in the landscape on that site.

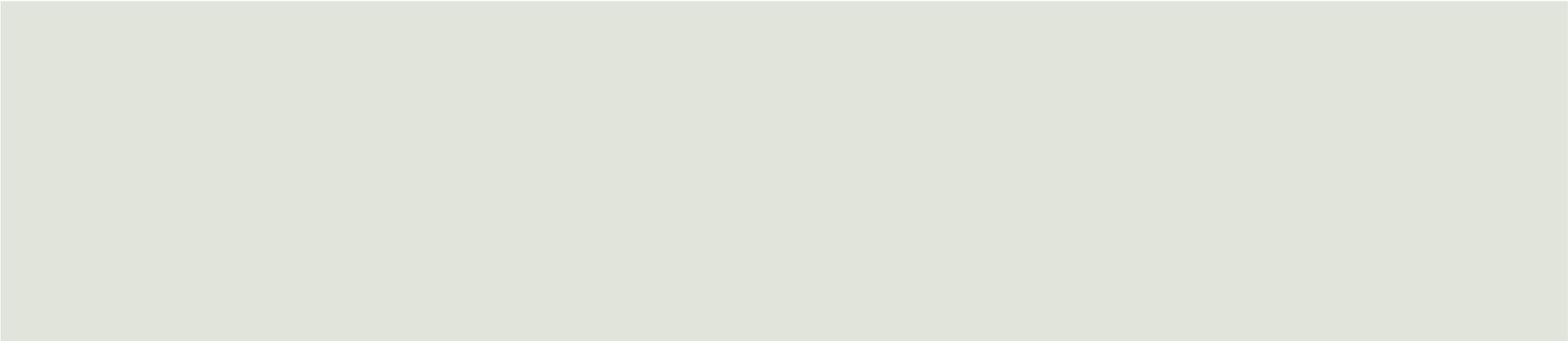
Air Quality

Protect air quality during construction

- All dust must be managed to meet the requirements of the NPDES Permit.



Architectural Guidelines for Residential Uses



Architectural Guidelines

Summary

The primary purpose of the architectural design guidelines is to provide a framework to ensure the high quality of the buildings proposed for the development and their compatibility with the rest of the buildings and the overall development.

These guidelines are to guide the quality of the materials selected, the proportion of the building massing, the definition of architectural elements, and to encourage high design standards.

Accessibility

This document does not specifically address issues of accessibility or universal design as the local building codes and standards will dictate the requirements for any given type of development. However it is important that all projects consider the need for accessibility and universal design beyond that which is required by code. Exemplary projects within any given district will consider the needs of all users and provide design solutions that provide every user with the same experience regardless of physical capability.

District Characteristics

Introduction

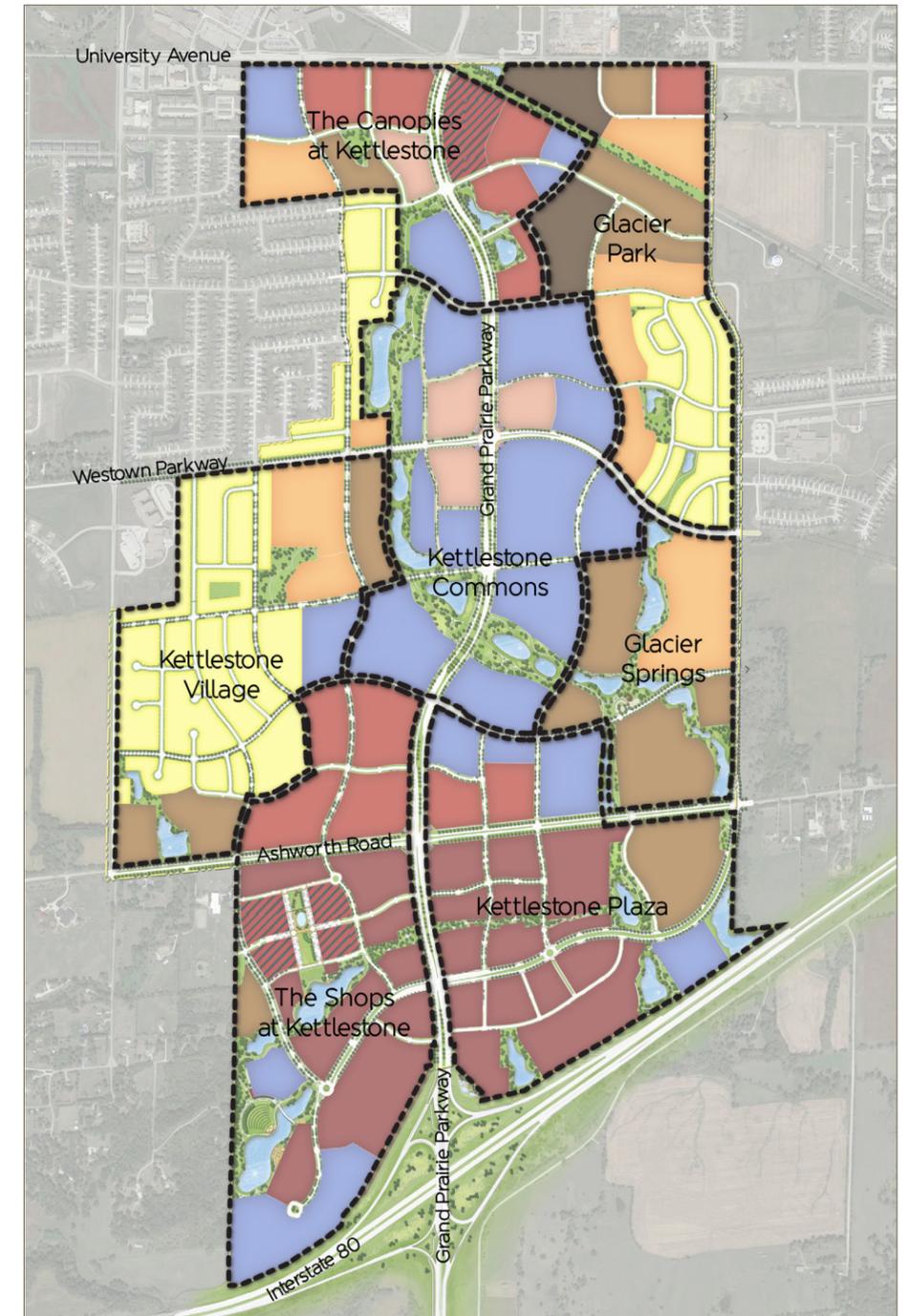
Kettlestone is divided into seven (7) distinct districts. These districts are serviceable from Grand Prairie Parkway and each boasts connectivity to active green belts as well as unique amenities (e.g. amphitheater, market) which are conceived as focal points within each district. Each district is intended to take on a distinct architectural characteristic based on its building type, amenities, and geographic features. The seven (7) districts are identified as follows and shown in context on the map to the right:

- Kettlestone Commons
- The Canopies at Kettlestone
- Glacier Park
- Glacier Springs
- Kettlestone Plaza
- The Shops at Kettlestone
- Kettlestone Village

This section of the architectural guideline will define the overarching characteristics of each district to establish a coherent but distinctive environment within each district. The overarching guidelines should be used in addition to the building type guidelines.

Architectural Note

It is important to note that architectural styles may vary significantly within a given district based on developer preference. This document highlights more traditional archetypes for most building types but designers and developers are permitted, encouraged even, to propose projects that deviate from traditional forms where appropriate. All projects will be reviewed for compliance with the Guidelines and are subject to approval by the City. When deviation from traditional form is proposed, the onus falls on the developer and designer to justify the proposed deviation to the City and support their argument with any additional information requested by the governing body.



The Shops at Kettlestone

Located just north of Interstate 80 and west of Grand Prairie Parkway, the Shops at Kettlestone district offers high visibility and direct, convenient access to both Interstate 80 and the adjacent Ashworth Road. The development is intended to range from big box retail to mixed-use and apartment-style living. This is intended to be the most upscale retail district within Kettlestone. The City of Waukee intends to invest in the green spaces, an amphitheater, and pedestrian underpasses. This is a high quality showcase piece for the City and the architectural character is expected to match.

Buildings within the Shops at Kettlestone should pay close attention to the needs of pedestrians. Storefronts at the ground level shall be designed to display activity within buildings and provide visual connectivity to the development features. Buildings should consider orientation to capitalize on green spaces and adjacent parking - in many cases entries may be needed on several sides. It is intended for this district to contain a variety of coffee shops, retail, bars, restaurants, and other entertainment venues to serve residents and out-of-town visitors alike.

Preferred Architectural Style: Craftsman, Mid-Century

Color: Warm Traditional earth tones to blend with the natural area the City has invested in.

Example Developments: The Meadows at Lake Saint Louis (St. Louis, Missouri), Pearland Town Center (Pearland, Texas)



Kettlestone Plaza

Kettlestone Plaza, located just north of Interstate 80 and east of Grand Prairie Parkway, is intended to be the regional draw of the development. As one exits Interstate 80 a large retail center with convenient access will be visible on the right. A high end outdoors retailer could anchor this prominent corner development. These predominantly large scale retail buildings are encouraged to incorporate an indoor/outdoor component of the building program – to introduce a vibrant activity zone that is highly visible from as many directions as possible. For example: large scale second floor windows or light monitors may showcase the activities inside the building along the façade facing the interstate. Facades facing green belts and/or ponds shall be overtly sensitive to the pedestrian.

Preferred Architectural Style: Pacific Lodge, Mid-Century

Color: Warm Traditional earth tones to blend with the natural area the City has invested in.

Example Developments: DeWaay (Clive, Iowa)



Kettlestone Village

Located on the western edge of the development, this area is proposed to be primarily single family residential. Its close proximity to the trails and park systems make it a prime area to market to families looking to relocate to Waukee.

Preferred Architectural Style: Bay-and-Gable, Federal, Craftsman

Color: Natural Materials, Neutral Tones

Example Developments: West Village (Kansas City, KS); Vinings Jubilee (Atlanta, GA); The Peninsula Neighborhood (Iowa City, IA)



Kettlestone Commons

This area, at the heart of the development, is conceived as an employment center supplemented by civic trails and proximity to commercial amenities. For example this area could be developed into an arts and cultural district or the home of government services. The greenway system passes through the center of Kettlestone Commons. Adjacent office and residential areas feed into this area resulting in one of the most walkable districts of the development. To further this point, an underpass will be constructed under Grand Prairie Parkway to promote fluid pedestrian safe access. Future office uses are proposed on either side of the greenway.

The planned concentration of office and retail typologies within the Commons should consider both a street side presence as well as the green space presence. In most cases building designers will be asked to provide entrances on both sides and to make connections to the adjacent green spaces. The architecture should respond to these active natural spaces by working with nature and not dominating it with bold architectural statements.

Preferred Architectural Style: Sustainable Office, Craftsman

Color: Natural Material, Neutral Tones

Example Developments: Arbor Lakes, The Grove (Maple Grove, MN); Creekside Park (Woodlands, TX)



Glacier Springs

This area is almost all medium and high density residential. It has the potential to be a great location to live as the main greenway system extends through the district. The views to the green spaces from the apartments and townhomes will be very pristine.

The buildings within this district may consider a more traditional residential style, to blend with future development and the adjacent residential developments. Buildings fronting the greenway will be held at a higher standard and all projects are expected to connect to and utilize the greenway system in the layout and the architectural expressions must follow suit.

Preferred Architectural Style: Coastal Style, Federal, Bay-and-Gable

Color: Gray or White Trim - Warm Tones - Bright Accents

Example Developments: East Beach (Norfolk, VA); River Place (Portland, OR)



The Canopies at Kettlestone

The University Avenue corridor has developed through the years and is home to many different uses as it extends west toward Waukee High School. The uses range from single family residential to strip mall developments.

Within Kettlestone, the collection of retail and mixed-use developments along University Avenue should have a cohesive look to differentiate the area from the remainder of the corridor. 'The Canopies' recalls the large Oak Savannah that Iowa is home to. These tree canopies still exist in the nearby woods and here, the loose interpretation of them will give this district a distinct look and feel.

The architecture is encouraged to have canopies, or recesses, wrap around the building to face the primary corridor and present a holistic design. Like other districts the pedestrian is the first consideration in design. The use of pedestrian level glass, and four sided architecture will make the street level experience something desirable.

Preferred Architectural Style: Craftsman, Coastal Style

Color: Gray - Rich Tones - Bright Accents

Example Developments: East Beach (Norfolk, VA), Creekside Park (Woodlands, TX)



Glacier Park

Another element of Kettlestone's northern gateway, this development is predominantly intended for dense residential buildings that are within walking or biking distance of mixed-use opportunities adjacent to it. Buildings shall be indicative of the active lifestyle, and sensitive to pedestrian oriented activity along the greenway. This could be the most diverse collection of architecture within Kettlestone. The possibilities of urban loft meeting suburban architecture are endless and challenges designers to develop a style of living that is unique to Waukee. Potentially a dense version of the brownstones commonly seen in the urban core, but with suburban applications of porches, garages, and materials use.

Preferred Architectural Style: Prairie Style, Craftsman

Color: Natural Material, Earth Tones

Example Developments: The Grove (Maple Grove, MN)



Building Type Standards

Summary

The overall success of the Kettlestone Master Plan is closely linked with the quality of architecture in each of the districts described previously. This section will identify several principal building types, their defining features and the minimum requirements of their design and construction. The standards are intended to complement other standards and requirements outlined in this document.

The principal building types described in this section are identified below. Requirements for each can be found on the corresponding pages, the location in which each type of building is permitted can be found in the matrix below.

Multi-Family Rowhouse	pgs. 63 - 65
Multi-Family Stacked Medium	pgs. 67 - 69
Multi-Family Stacked High	pgs. 71 - 73
Mixed-Use	pgs. 75 - 77
Neighborhood Retail	pgs. 79 - 80
Community Retail	pgs. 81 - 82
Retail Regional	pgs. 83 - 84
Office	pgs. 85 - 86
Hotel	pgs. 87 - 88

Permitted Building Types	Kettlestone Districts						
	Kettlestone Commons	The Canopies	Glacier Park	Glacier Springs	Kettlestone Plaza	The Shops	Kettlestone Village
Rowhouse		●	●	●			●
Multi-Family Medium		●	●	●		●	●
Multi-Family High		●	●				
Mixed-Use		●	●			●	
Neighborhood Retail	●	●				●	
Community Retail	●	●		●		●	
Regional Retail					●		
Office	●	●			●	●	
Hotel					●	●	

Definitions

The following is a list of architectural terms found throughout the remainder of these guidelines and are defined here for the reader's convenience:

Architectural (Precast) Concrete Panels: A precast concrete wall panel that is designed and engineered to transfer shear, support floor and roof loads as well as offer a wide range of architectural exterior finishes. Architectural precast panels have the highest quality concrete finish and very often are integrally colored in the plant to match other building exterior finish materials.

Architectural Metal Panels: A modular exterior cladding system comprised of insulated or uninsulated prefinished metal panels and supporting framework attached to the structural frame of a building.

Bay: 1. Within a structure, a regularly repeated spatial element defined by beams or ribs and their supports. 2. A protruded structure with a bay window.

Bay-and-Gable style: A bay-and-gable is a distinct architectural style of house that is ubiquitous in the older parts of Toronto, Canada. The most prominent feature is the large bay window that usually covers more than half of the front of the house, surmounted by a gable roof. The classic bay and gable is a red brick semi-detached structure that is two and a half stories tall, though many variations also exist. It was one of the most common forms of house built in late nineteenth and early twentieth century Toronto.

Burnished Block: A concrete masonry unit (CMU) whose display face has been burnished (polished) to expose the natural colors and shapes of the aggregates within the block. Burnishing yields a higher quality finish characterized by increased coloration and subtle variation in hue and tone. Burnished surfaces are coated with a clear sealer to achieve a high-resolution finish.

Coastal style: American Coastal style is a hybrid style of architecture found predominantly along the Atlantic coast of the United States that takes elements of Cottage and other folk styles and renders them in white or light pastel colors or accents giving them a distinctly bright, open and welcoming feel.

Craftsman style: A domestic architectural style in America in the first few decades of the 20th century. Houses in this style are usually characterized by: a non symmetrical facade typically sheathed with stucco, wood clapboard, or wood shingles, and less often with board and batten, brick, concrete block, or stone. Details often included: a gabled porch, recessed or trellised, facing the street; usually a low to moderately pitched front-gabled roof; exposed roof rafters, beams, false beams, or triangular knee braces inserted add decorative elements under the gables; gabled dormers or shed dormers with exposed beams; double-hung windows or heavily framed casement windows.

Dormer: Projecting framed structure set vertically on the rafters of a pitched roof, with its own roof (pitched or flat), sides, and a window set vertically in the front.

Exterior Insulation and Finish System (EIFS): An exterior finish for a building composed of polystyrene foam covered with a synthetic stucco; this type of stucco (in contrast to traditional, porous cement-based stucco) is water proof and sprayed on.

Facade: The exterior face of a building which is the architectural front, sometimes distinguished from the other faces by elaboration of architectural or ornamental details.

Federal style: An architectural style in the post-colonial era in America, from about 1780 to 1820 and beyond; noted for its clarity of form, simplicity, restraint, and subtle use of color, as well as its delicacy and lightness in detailing. Buildings in this style are usually characterized by: a symmetric facade, often with a large entrance portico; commonly, brick construction with a Flemish bond pattern and thin mortar joints.

Fenestration: The design, construction, or presence of openings in a building. Includes windows, doors, louvers, vents, wall panels, skylights, storefront, curtain walls, and slope glazed systems. From the Latin word fenestra (“window”).

Fiber Cement: A composite building material made of sand, cement, and cellulose fibers. Most commonly used in siding applications where quality, longevity and durability are required.

Gable: A vertical surface commonly situated at the end of a building, usually adjoining a pitched roof; its shape depends on the type of roof and parapet, although most often it is triangular; often extends from the level of the cornice up to the ridge of the roof. If the gable is on the facade rather than the back end, the building is said to be *front-gabled*.

Glazing: The glass surface of a glazed opening. The glass in a window.

Light Emitting Diode (LED): A solid-state device that emits light of a single primary color, but in combination with other diodes can produce colors of any hue for use in signage or lighting. LED fixtures are very energy efficient and have a very long operational life.

Mid-Century (Modern): An American architectural style characterized by flat planes, clean lines, open floor plans, expansive glass, changes in level and an obvious connection to the outdoors. Mid-Century most often refers to residential architecture but the characteristics of the style apply equally well to smaller scaled commercial buildings.

Pacific Lodge style: Pacific Lodge or Pacific Northwest style is not a formally recognized architectural style but is instead a trend in the contemporary architecture of the Pacific Northwest characterized by the use of natural, rustic, and industrial-type materials. There is no consistent building form associated with this trend. Common materials include Cor-Ten steel, rough-hewn timbers, corrugated metal panel, clear-finished wood sidings, concrete, and stone (often rubble stone or river rock).

Parapet: In an exterior wall, the part entirely above the roof.

Prairie style: A style of American domestic architecture that originated with the Prairie School, popular primarily in the Midwest from about 1900 to 1920. A house in this style often is characterized by: a two-story height with wings and/or porches of one story, integrated with its site to provide a low, horizontal appearance; the central portion of the house usually higher than the adjacent flanking wings; traditional building materials; exterior walls commonly of light-colored stucco, light colored brick, or concrete block; contrasting wood between stories;

Definitions (continued)

Roof Form, Flat: A horizontal roof either having no slope, or a slope sufficient only to effect drainage, its pitch being usually less than 10 degrees; it may be surrounded by a parapet or it may extend beyond the exterior walls.

Roof Form, Pitched: A steep gable roof having the same pitch on each side of a central ridge.

Roof Form, Gabled: A roof having a single slope on each side of a central ridge; usually with a gable at one or both ends of the roof.

Split-face Block: A solid or hollow concrete masonry unit, split lengthwise after curing; laid with the fractured surface exposed, so as to provide a rough texture.

Sustainable Office (*Architectural Style*): This architectural style is not well-recognized as a distinct style with common characteristics. Buildings of this style will generally adhere to design and construction principles that create highly energy efficient buildings that architecturally are characterized as well-constructed, open plan offices that harvest and utilize abundant daylight and thus have large amounts of exterior glass that is often provided with horizontal shading devices.

Streetscape: The visual elements of a street, including the road, adjoining buildings, street furniture, trees and open spaces, etc. that combine to form the street's character.

Multi-Family Rowhouse

Description

The Rowhouse is a single-family unit that shares common walls with one or two of the adjacent units. Rowhouses are typically part of a multi-unit development. This type of dwelling unit provides a semi-private front yard and a private rear yard. For the purpose of these guidelines, a horizontally attached, back-to-back style residential building shall be considered and shall follow the MF-Stacked Med. standards.

Major Elements

Building Entry

There shall be one primary entryway to each unit. Entry into each unit shall not be solely through the garage or rear entry.

Primary entryway and entry door shall be facing green space or street.

Primary entryway may be elevated from the street elevation; preferably, an elevation of 5'-0" (approx. halfstory) shall be the maximum distance between entry and the street (note: splitlevel entry is not preferred).

Entryway may be covered by a projection from the façade or recessed. Entry steps and landings shall be of a durable material, stone, and/or precast concrete.

Sliding doors shall not be used as the primary entry.

Fenestration

Fenestration shall be provided via windows and doors.

Glass within fenestration shall be clear with no color tint.

Glass shall achieve a high light transmittance (approximately 68% Min.).

Awnings & Canopies

Entryway projection shall not be deeper than the front yard provided and shall not be more than 4'0" deep.

Canopy material shall be durable and UV stable.

Mechanical Equipment

Outdoor mechanical, electrical and communication equipment shall be screened and located such that the equipment or screening is not in direct view of any public way and/or vehicular or pedestrian street.

Equipment attached to the building shall be incorporated into the overall massing of the building design.

Continued next column.

Garage Orientation

Permanent parking shall be provided in a garage.

Garages are typically tuck-under or first floor attached.

Garages are preferably rear loaded.

Facades with frontal garage should also include:

- Main entry with articulation (e.g. recessed, or covered walk-up)
- A large window above garage
- If durable translucent material is not provided, windows within the garage doors are required
- Opaque doors may be allowed beneath projecting porch (4'0" Min.)

Architectural Image & Character

At least one level (entry level) shares one or both long common wall(s).

Traditionally, both walls are shared such that natural light and views are limited to the street facing and rear façades. Usually fenestrations are tall (in proportion to floor to ceiling) and grouped (such as bay windows) to allow light into the building (which has a deep and narrow footprint).

The building design shall reflect current building technology and design.

The building design shall 'honestly' express its material usage, construction methods, and programmatic function.

These characteristics shall be reflected on all sides of the building.

Building Mass & Roof Forms

Massing

Buildings shall be two, two and one-half, or three story in height.

Minimum finish floor to finish floor height shall be 10'-0" on the level of primary entry.

Each rowhouse grouping may consist of three (3) to eight (8) attached units.

There shall be no more than two identical groupings within the same rowhouse development.

Each unit shall be distinguished from the adjacent units by means of facade articulation - see Wall Articulations and Projections.

Roof Form

Buildings may have flat, pitched or gable roofs. Roof form should be consistent with the prevailing architectural style.

On buildings with pitched or gable roofs the dominant ridgeline should run parallel to the street facing facade and the rear façade. Secondary roofs and dormers may have single slope (shed/pitched) or gable roofs.

Building facades shall reflect the roof form. (e.g. gable roof shall not be concealed by a flat parapet wall and appear to be a building with flat roof)



Multi-Family Rowhouse

Example of a multi-family v exhibiting the desired quality and characteristics of Kettlestone.



Details & Ornamentation - Dormer

Functions to provide views and natural light to occupied interior space. Dormer roof sloping in the same direction as building slope

Material & Color

Brick (Preferred: Modular 2 3/8")
Federal Style Brownstone

Wall Articulations & Projections

Grouping windows is one way to suggest bay windows; projecting or recessing materials helps articulate visual interest. (Min. 35% glazing on street facing & rear facade)

Architectural Image & Character

Tall windows to allow light into the building (footprint: deep, narrow).

Streetscape - Frontage

- 1) Entry direct from sidewalk.
- 2) Set Back 15'-0" Maximum.

Streetscape Diversity

Frontage

Each unit shall have an individual entryway.

Each unit typically has public or private street frontage and may be served by an alleyway.

A portion of the building wall shall be setback no farther than 15 ft.

Front yard shall be immediately adjacent to the sidewalk.

Wall Articulations & Projections

Façade

Building facades shall be divided into vertical bays to articulate (identify) unit width.

Bays may be further subdivided into modules to define fenestration vs. solid zones: to promote the appearance of multiple vertical units.

Façade bays may be delineated by the following scaling elements:

- recesses
- reveals
- continuous projections
- diversity in material profiles
- change in module rhythm

Downspouts at semi-detached units shall not be located on the street facing façade.

A minimum of 35% of the street and rear façades shall be fenestration.

At the semi-detached rowhouse, fenestration may only appear on the sides where it does not overlook the neighbor's patio between buildings. If fenestration is provided on the side, the minimum fenestration percentage for the street facing and rear façades may be reduced to 30%.

Window glass shall be recessed from the façade a minimum of 2".

Shadow Trim Elements may be understood as features that produce heavily articulated shadow lines – e.g. recessed windows, projecting window boxes, layered shading or structural devices.

Details & Ornamentation

Building details shall be provided as functioning articulations of the façade and provide shadow line to enrich the façade composition.

Dormers

Dormer, if provided, shall correlate with occupied space.

Dormers may be allowed as vents, or to conceal equipment, provided they are proportional to the main roof.



Building Massing & Roof Forms

Groups may consist of three to eight units. Each unit is distinguished from adjacent units

Wall Articulations & Projections

Bays subdivided into modules to define fenestration vs. solid zones: to promote the appearance of multiple vertical units.

Material & Color

Brick (Preferred: Modular 2 3/8")

Mid-Century Brownstone

Details and Ornamentation

Windows recessed from facade to provide shadow line

Wall Articulations & Projections

Grouping windows is one way to suggest large bay windows; projecting or recessing materials helps articulate visual interest.



Material & Color

Brick (Preferred: Modular 2 3/8")

Contemporary Style, Neutral Beige Color

Wall Articulations & Projections

Grouping windows is one way to suggest bay windows; projecting or recessing materials helps articulate visual interest. (Min. 35% Glazing Front Façade)

Building Massing

Floor to Floor Height 10'-0" Min.

Streetscape • Frontage

- 1) Entry direct from sidewalk.
- 2) Set Back 15'-0" Maximum.

Wall Articulations & Projections

Total fenestration minimum of 30%.

Material & Color

High quality and durable material: stone (natural material, neutral color).

Building Massing & Roof Forms

Pitched roofs must slope from street facing to rear façade. Downspout not allowed on front façade (semidetached). Elevation must reflect roof form.

Material & Color

Wood (painted or stained).

Primary material(s) used on the front façade shall be repeated on the end units' side façade (min. 2'-0" return).



Material & Color

Materials

Materials should be authentic. Avoid materials made to look like something else.

Materials on all facades shall be of equal quality. The front facade material(s) shall be repeated on all facades.

When the building base is differentiated from the rest of the building, the building base material shall have a heavier appearance than the material(s) above, e.g. brick above stone; siding above brick or similar.

Materials shall be of durable and high quality material, including:

- Fired-clay brick (2 3/8" tall brick preferred) with veneer depth of at least 3"
- Stone
- Wood (e.g. IPE)
- Fiber-cement
- Clear glass

Prohibited materials include:

- Vinyl, fiberboard, and metal siding
- EIFS
- Synthetic stucco
- Split faced masonry (only half story at base)
- Burnished block (only half story at base)
- Thin brick veneer and brick panels
- Asphalt shingles (except for premium grade laminate style)

Color

Buildings should reflect the color scheme of the belonging district:

The Canopies | Gray - Rich Tones - Bright Accents

Glacier Park | Natural Materials - Earth Tones

Glacier Springs | Gray or White Trim - Warm Tones - Bright Accents

Kettlestone Village | Natural Materials - Neutral Tones

Lighting

Refer to Lighting Guidelines for additional requirements.

Utilize energy efficient light fixtures (LED preferred)

Exterior Building Lighting

Provide lighting to illuminate the front and back entry, garage entry, driveway and other walking surfaces.

Non-recessed type of light fixtures are to conform to the building design.

Lamps shall be of warm white color temperature (3200K to 3700K).

Material & Color

High quality and durable material brick (shown in earth tones, neutral trim).

Window Orientation

Bay window above frontal garage

Door Orientation

Facades with frontal garage must also include main entry (shown recessed).

Garage Orientation

Frontal garages of a durable translucent material (preferred).



Material & Color

High quality and durable material: example of earth tone color.

Material & Color

Unique design, excellent use of material and color.



Streetscape Diversity

Each unit has individual entryway

Streetscape Diversity

Provide front yard



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Multi-Family Stacked Medium

Description

The Medium Stacked Multi-Family building is a back to back or vertical residential structure.

Major Elements

Building Entry

There typically should be one primary entryway to each unit. Entry into each unit shall not be solely through the garage or rear entry.

Primary entryway and entry door shall be facing the greenway or the street.

Units typically have individual entry, e.g. outdoor steps (if needed). However common or shared entries should not be visually intrusive and must be incorporated into the building architecture and otherwise be tucked to the side of building, recessed, and/or screened.

Entryway may be covered by projection from the façade or recess.

Sliding doors shall not be used as the primary entry.

Fenestration

Fenestration shall be provided via windows, and doors.

Glass within fenestration shall be clear with no color tint.

Glass shall achieve a high light transmittance (approximately 68 % minimum).

Balcony / Patio

Outdoor space should be provided on each level of the building - i.e. patios and/or balconies (shared or private) when facing green belt trails, or kettles (ponds).

Balcony shall be occupiable with a minimum of 3'-0" dimension in each direction.

Awnings & Canopies

Entryway projection shall not be deeper than the front yard provided and shall not be more than 4'-0" deep.

Canopy material shall be durable and UV stable.

Mechanical Equipment

Outdoor mechanical, electrical and communication equipment shall be screened and located such that the equipment or screening is not in direct view of any public way and/or vehicular or pedestrian street.

Equipment attached to the building shall be incorporated into the overall massing of the building design.

Garage Orientation

Permanent parking shall be provided in a garage or surface parking lot in the rear of the building.

Garages are preferred to be rear loaded tuck-under or first floor attached and shall be incorporated into the overall massing of the building

Detached garages, if provided, shall be located at the rear of the principal building. The detached garages shall have the same high quality and durable material as the principal building. The walkway between the detached garage and the principal building shall be distinguished from the driving surface

Architectural Image & Character

Medium density dwelling units are defined as attached horizontally and vertically with three (3) or more units per building.

If only attached horizontally, units may be located on individual lots or on a common association lot under a condominium regime.

If vertically attached, units are typically located on an association lot under a condominium regime.

Building units may or may not have public street frontage and may be served by an alleyway.

Building unit typically has individual entryway.

The building design shall reflect current building technology and design.

The building design shall 'honestly' express its material usage, construction methods, and programmatic function.

These characteristics shall be reflected on all sides of the building.

Building Mass & Roof Forms

Massing

Buildings shall be no more than three stories in height.

Minimum finish floor to finish floor height shall be 10'0" on the first level.

The ground floor should have prominent proportion and features (base).

Units should include facade articulations - such as patios or balconies.

Roof Form

Buildings may have flat, pitched or gable roofs.

Building facades shall reflect the roof form. (e.g. gable roof shall not be concealed by a flat parapet wall and appear to be a building with flat roof)

Street-Scape Diversity

Frontage

Front yard, if provided, shall be immediately adjacent to the sidewalk.



Medium Stacked Multi-Family Building (Appropriate)

Example of a Medium Stacked Multi-Family Building exhibiting the desired quality and characteristics Kettlestone



Medium Stacked Multi-Family Building (Non-appropriate)

Wall Articulations & Projections

Façade

Building facades shall be divided into vertical bays and the bays shall be articulated.

Bays may be further subdivided into modules to define fenestration vs. solid zones.

Façades may be delineated by the following scaling elements:

- Recesses
- Reveals
- Continuous projections
- Diversity in material profiles
- Change in module rhythm

A minimum of 30% of each street or greenway facing façade shall be fenestration.

Fenestration should be most prominent at the street facing view – e.g. a higher percentage than the minimum used on other faces of the building.

A combination of durable and high quality materials shall be used on the building exterior. No one exterior building material shall exceed 50% of the building facade.

Window glass shall be recessed from the facade for a minimum of 2”.

Shadow Trim Elements may be understood as features that produce heavily articulated shadow lines – e.g. recessed windows, projecting window boxes, brackets, etc.

Details & Ornamentation

Building details shall be provided as functioning articulations of the façade and provide shadow line to enrich the façade composition. Details and ornamentation shall be consistent with the prevailing architectural style.

Dormers

Dormer, if provided, shall correlate with occupied space.

Dormers may be allowed as vents or to conceal equipment, provided they are proportional to the main roof.

Shutters

Shutters, if provided, shall have the appearance of being operable and functioning as shading device to the associated opening(s)



Details & Ornamentation

Bracket details support deep overhang providing both a strong shadow line and an appropriate architectural detail.

Material & Color

Brick (Preferred: Modular 2 3/8”)
Fiber Cement Siding

Building Massing

Floor to Floor Height 10'-0" Min. Articulate base of the building.

Building Entry

Units typically have individual entry, e.g. outdoor steps (if needed) should not be visually intrusive either tucked to the side of building, recessed, and/or screened. [not shown, but implied]

Material & Color

Durable and high quality materials with gray, rich tones and bright accents

Major Elements - Balcony / Patio

Balcony is provided at each unit and all balcony are sized to be occupiable

Major Elements - Building Entry

Recessed entryway facing a public way

Streetscape Diversity

Landscaped front yard



Material & Color

Materials

Materials should be authentic. Avoid materials made to look like something else.

Materials on all facades shall be of equal quality. The front facade material(s) shall be repeated on all facades.

Materials shall be of durable and high quality material, including:

- Fired-clay brick (2 3/8" tall brick preferred) with a veneer depth of at least 3"
- Stone
- Wood (e.g. IPE, clear cedar)
- Fiber-cement
- Clear glass panels
- Clear glass

Prohibited materials include:

- Vinyl, fiberboard, and metal siding
- EIFS
- Synthetic stucco
- Split faced masonry (only half story at base)
- Burnished block (only half story at base)
- Thin brick veneer and brick panels
- Asphalt shingles (except for premium grade laminate style)

Color

Buildings should reflect the color scheme of the corresponding district:

The Canopies | Gray - Rich Tones - Bright Accents

Glacier Park | Natural Materials - Earth Tones

Glacier Springs | Gray or White Trim - Warm Tones - Bright Accents

Kettlestone Village | Natural Materials - Neutral Tones

Lighting

Refer to Lighting Guidelines for additional requirements.

Utilize energy efficient light fixtures (LED preferred)

Exterior Building Lighting

Provide lighting to illuminate the front and back entry, outdoor spaces (balcony, patio), garage entry, drive way and other walking surfaces.

Non-recessed type of light fixtures are to conform to the building design.

Lamps shall be of warm white color temperature (3200K to 3700K).

Details & Ornaments

Building details shall be provided as functioning articulations of the façade and provide shadow line to enrich the façade composition. Respond to solar orientation.

Material & Color

Durable high quality materials:

- Fiber Cement Panel, Wood
- (Shown: Arts and Crafts style)
- (Colors: natural tones, gray trim, accent)

Major Elements

Outdoor space should be provided i.e. patios and/or balconies (shared or private) when facing green belt trails, or springs.



Details & Ornamentation

Appropriately scaled and positioned dormers correlate with interior space.

Material & Color

- Brick (Preferred: Modular 2 3/8")
- Stone

Building Entry

Primary building entrance is clearly identified and relates to the public street.

Building Massing

Building mass is appropriately scaled and does not exceed three stories in height. Units include facade articulations.

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Multi-family Stacked High

Description

The High Stacked Multi-Family building is a multi-family residential building of the highest density permitted within Kettlestone.

Major Elements

Building Entry

There shall be one primary entryway to each building. Entry into each building shall not be solely through the garage or rear entry.

Entryway shall be connected to a vestibule and an interior lobby.

Primary entryway and entry door shall be facing the green space or the street.

Primary entryway may be elevated from the street elevation. When elevated, the maximum distance between the street elevation and the entry elevation shall be 3'0".

Entryway may be covered by projection from the façade or recessed.

Sliding doors shall not be used in the primary entry.

Fenestration

Fenestration shall be provided via windows and doors.

Glass within fenestration shall be clear with no color tint.

Glass shall achieve a high light transmittance (approximately 68 % minimum).

Balcony / Patio

Outdoor space should be provided on each level of the building - i.e. patios and/or balconies (shared or private) when facing green belt trails, or kettles.

Balcony shall be occupiable with a minimum of 3'-0" dimension in each direction.

Awnings & Canopies

Entryway projection shall not be deeper than the front yard provided and shall not be more than 4'0" deep.

Canopy material shall be durable and UV stable.

Mechanical Equipment

Outdoor mechanical, electrical and communication equipment shall be screened and located such that the equipment or screening is not in direct view of any public way and/or vehicular or pedestrian street.

Equipment attached to the building shall be incorporated into the overall massing of the building design.

Garage Orientation

Permanent parking shall be provided in a garage or surface parking lot in the rear of the building.

Garages are preferred to be rear loaded tuck-under or first floor attached and shall be incorporated into the overall massing of the building

Detached garages, if provided, shall be located at the rear of the principal building. The detached garages shall have the same high quality and durable material as the principal building. The walkway between the detached garage and the principal building shall be distinguished from the driving surface

Architectural Image & Character

High density dwelling units are defined as multiple dwelling units attached horizontally and vertically with 8 or more units per building.

Building units may be located on an association lot under a condominium regime or may be under a single ownership.

Building units typically have a shared entryway into the building and a common interior corridor to access individual units.

The building design shall 'honestly' express its material usage, construction methods, and programmatic function.

These characteristics shall be reflected on all sides of the building design.

Building Mass & Roof Forms

Massing

Buildings shall be three (3) to five (5) stories in height.

Minimum finish floor to finish floor height shall be 10'0" on the first level.

The ground floor should have prominent portion and features (base).

Units should include facade articulations such as patios or balconies.

Roof Form

Building may have flat, pitched or gable roofs.

Building facades shall reflect the roof form. (e.g. gable roof shall not be concealed by a flat parapet wall and appear to be a building with flat roof)

Streetscape Diversity

Frontage

Each building shall have an individual entryway.

Main entryway to each building shall be directly from a vehicular or pedestrian street.

Each building shall have a public or private street frontage and may be served by an alleyway.



High Stacked Multi-Family Building

Examples of a High Stacked Multi-Family Building exhibiting the desired quality and characteristics of Kettlestone.



High Stacked Multi-Family Building

Wall Articulations & Projections

Façade

Due to the repetitive nature of the high density multi-family stacked housing, the façade of the building shall establish a rhythm of windows, storefront or curtainwall and/or shadow casting articulations, to create rhythms of solid and void.

Facades may provide articulation for each unit, or appear as one cohesive building with regularized rhythm.

Façade bays may be divided into modules to define fenestration and solid zones.

Facade bays may be delineated by the following scaling elements:

- recesses
- reveals
- continuous projections
- diversity in material
- change in module rhythm
- shadow trim

A minimum of 30% of each street or greenway facing façade shall be fenestration.

Fenestration should be most prominent at the street facing view – e.g. a high percentage than the minimum used on other faces of the building.

A combination of durable and high quality materials shall be used on the building exterior. No one exterior building material shall exceed 50% of the building facade.

Windows shall be recessed from the facade for a minimum of 2”.

Shadow Trim Elements may be understood as features that produce heavily articulated shadow lines – e.g. recessed windows, projecting window boxes, layered shading or structural devices.

Details & Ornamentation

Building details shall be provided as functioning articulations of the façade and provide shadow line to enrich the façade composition. Details and ornamentation shall be consistent with the prevailing architectural style.

Balconies can also help break down the scale of the building by articulating the frequency of units within - see Major Elements on previous page.

Dormers

Dormer, if provided, shall correlate with occupied space.

Dormers may be allowed as vents or to conceal equipment, provided they are proportional to the main roof.

Shutters

Shutters, if provided, shall be operable and functioning as shading device to the associated opening(s).

Material & Color

Durable high quality materials with gray, rich tones and bright accent

Major Elements - Balcony / Patio

Occupiable balcony is provided at each unit

Balconies can also help break down the scale of the building by articulating the frequency of units within.

Major Elements - Fenestration

Races windows units 2” from facade



Alternate Balcony Configuration

A non-occupiable balcony may be acceptable, subject to approval by jurisdiction having authority, where appropriately coupled with French-opening doors and when consistent with the architectural style of the development.

Wall Articulations & Projections

Wall articulations and projects break down mass of building and establish a rhythm along the facade that helps to identify individual units within the building.



Material & Color

Materials

Materials shall be authentic. Avoid materials made to look like something else.

Materials on all facades shall be of equal quality. The front facade material(s) shall be repeated on all facades.

Materials shall be of durable and high quality material, including:

- Fire-clay brick (2 3/8" tall brick preferred) with a veneer depth of at least 3"
- Stone
- Wood (e.g. IPE, clear cedar)
- Fiber-cement
- Clear glass panels
- Clear glass

Prohibited materials include:

- Vinyl, fiberboard, and metal siding
- EIFS
- Synthetic stucco
- Split faced masonry (only half story at base)
- Burnished block (only half story at base)
- Thin Brick veneer and brick panels
- Asphalt shingles (except for premium grade laminate style)

Color

Buildings should reflect the color scheme of the belonging district:

Glacier Park | Natural Materials - Earth Tones

Lighting

Refer to Lighting Guidelines for additional requirements.

Utilize energy efficient light fixtures (LED preferred)

Exterior Building Lighting

Provide lighting to illuminate the front and back entry, outdoor spaces (balcony, patio), garage entry, drive way and other walking surfaces.

Non-recessed type of light fixtures are to conform to the building design.

Lamps shall be of warm white color temperature (3200K to 3700K).



Details & Ornamentation

Bracket details support deep overhang providing both a strong shadow line and an appropriately detail architectural response

Material & Color

Brick (Preferred: Modular 2 3/8")
Fiber Cement Siding

Building Entry

Units typically have individual entry, e.g. outdoor steps (if needed) should not be visually intrusive either tucked to the side of building, recessed, and/or screened. [not shown, but implied]

Building Massing

Floor to Floor Height 10'-0" Min. Articulate base of the building.

Material & Color

Durable high quality materials including brick and fiber-cement siding in warm-neutral and earth tones

Major Elements - Balcony / Patio

Recessed occupiable balcony is provided at each unit

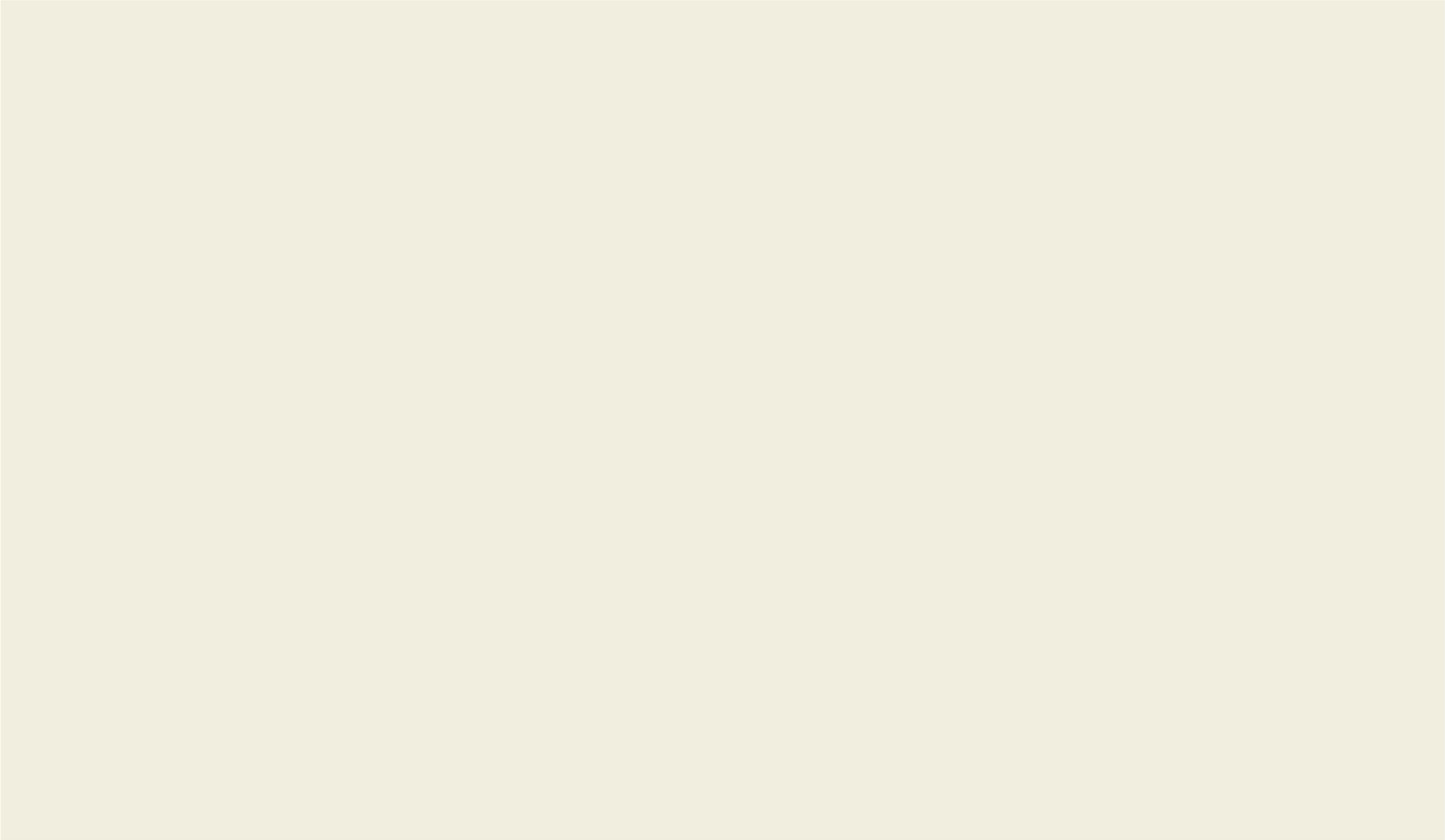
Balconies help break down the scale of the building by articulating the frequency of units within.

Major Elements - Building Entry

Primary building entry is clearly articulated. Attractive and functional outdoor spaces increase the sense of place and strengthen the community.



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Lighting Guidelines



Lighting

Lighting Standards

- I. Definitions. Unless the context clearly indicates otherwise, the words and phrases used in this Ordinance shall have the following meaning:
 - Exterior lighting:** Temporary or permanent lighting that is installed, located or used in such a manner to cause light rays to shine outdoors.
 - Exterior lighting fixture:** The complete exterior lighting unit, including: the artificial source of light, the parts required to distribute the light, elements for light output control such as the reflector (mirror), or refractor (lens), the housing that protects and holds the lamp in place, the connection to the power supply, and the component that anchors the lighting unit to the ground or onto a structure.
 - Floodlight:** A lamp that incorporates a reflector or a refractor to concentrate the light output into a directed beam in a particular direction.
 - Foot-candle:** The illuminance measured one (1) foot from a one (1) candle source.
 - Full cut-off:** A shielded light fixture that emits no light above a horizontal plane touching the lowest point of the fixture.
 - Glare:** The light in a direction near one's line of sight that either causes discomfort to the eye or impairs visibility.
 - Horizontal and vertical foot-candles:** The illuminance, measured by a light meter, striking a vertical or horizontal plane.
 - Illuminance:** The intensity of light in a specified direction measured at a specified point.
 - Light trespass:** Unwanted light falling on public or private property from an external location.
 - Recreational Facility:** Football fields, soccer fields, baseball fields, tennis courts, swimming pools, or any other special event or show area.

- II. Design Guidelines.
 - A. Required Lamps - Generally, all lamps shall be LED, or others with similar qualities to conserve energy, reduce glare and provide for improved color correct vision. Lamps for roadway and parking fixtures shall maintain a color temperature range between 4,000 and 5,000 Kelvin. Lamps for pedestrian scale fixtures, including bollards and wall lighting, shall maintain a color temperature range between 3,500 and 4,000 Kelvin
 - B. Required Exterior Lighting Fixtures - Generally, all exterior lighting fixtures shall be full cut-offs. No portion of the lamp, lens, or diffuser shall be visible from the side or top of any shield, or otherwise protrude from the bottom of the shield. No exterior lighting fixture shall emit light at or above a horizontal plane that runs through the lowest point of the shield.
 - C. Commercial and Industrial
 1. Architectural and Decorative Lighting
 - a. Limited building-mounted lighting may be used to highlight specific architectural features or primary customer or building entrances. Floodlights are only permitted provided all light emitted is contained by the building or by an eave or protruding structure.
 - b. Lighting fixtures shall be located, aimed, and shielded to minimize the glare that is emitted on objects other than a building's façade or landscape walls.
 - c. Building-mounted neon lighting may only be used when the lighting is recessed, or contained inside a cap or architectural reveal.
 - d. An exterior lighting fixture that emits less than 1800 lumens shall not be required to be a full cut-off fixture, provided

2. Street Lighting
 - a. Private Street Lights: All private street light fixtures shall measure no more than thirty feet (30') from grade to the top of the lighting fixture, and shall be a contemporary architectural style similar to and consistent with the fixtures as listed in the Fixture Schedule for the Kettlestone Overlay District (see Figure 91-1). All private street lights must be reviewed and approved by the city council prior to installation. The use of lighting fixtures that direct light upward into the air is strictly prohibited. All lighting on public streets shall conform to the current City of Waukee Standard Specifications.
 - b. Public Street Lights: In order to provide a certain degree of uniformity within the Kettlestone district, public street lights located along all arterial and major collector roadways -as indicated on Map 91-2, shall utilize the same lights as specified and installed along Grand Prairie Parkway (Kim 'Altitude', 30'-0" Round - Tapered Pole, Color RAL 7043). If not previously installed by the City as part of a street improvement project, these lights shall be paid for and installed by the owner of the adjoining properties at the time of development with the city reimbursing the owner/ developer for a portion of the increased cost of these fixtures versus standard streetlights. It is intended that these lights shall be owned and subsequently maintained by the City. All other street lights shall conform to the standard as set forth by City Code and City's Standard Specifications.



Roadway and Parking Fixture: Kim 'Altitude'



Pedestrian Fixture: Architectural Area Lighting 'Largent'



Pedestrian Fixture: Lumec 'City Spirit'



3. Site and Parking Lot Lighting

- a. The mounting height for lighting fixtures shall not exceed twenty-five feet (25') from grade to the top of the lighting fixture.
- b. The maximum average maintained foot-candles for a parking lot lighting fixture shall be three (3) foot-candles. The maximum lighting level for a parking lot lighting fixture shall be ten (10) foot-candles.
- c. The maximum horizontal foot-candle measurement at any property line shall be two (2) foot-candles. The maximum maintained vertical foot-candle at an adjoining property line shall be two (2) foot-candles, as measured at five feet (5') above grade.

4. Canopy Lighting

- a. The average maintained foot-candles under a canopy shall be thirty-five (35) foot-candles. Areas outside the canopy shall be regulated by the guidelines and standards outlined above. Permissible fixtures for canopy lighting include:
 - i. Recessed fixtures that incorporate a lens cover that is either recessed or flush with the bottom surface of the canopy.
 - ii. Indirect lighting where light is emitted upward and then reflected down from the underside of the canopy. Such fixtures shall be shielded to ensure that no light is emitted at or above a horizontal plane that runs through the lowest point of the canopy.

5. Pedestrian Walkway Lighting

- a. Pedestrian walkways shall be lit by pedestrian-level, bollard-type lighting (4 ft. height max.), pole lighting (14 ft. height max.), or other low, glare-controlled fixtures that are mounted on building or landscape walls.
- b. Pedestrian walkways may be located such that their proximity to street lighting fixtures provides illumination in lieu of walkway fixtures. An average illuminance of one (1) foot-candle shall be maintained with the minimum allowable illuminance being half (1/2) a foot-candle.

6. Landscape Accent Lighting

- a. Low level, ground mounted landscape lighting fixtures should be placed a minimum of twelve (12) feet from the back of curb line of a travel way.
- b. Lighting fixtures shall be located, aimed, and shielded to minimize the glare that is emitted on objects other than landscape walls, features or trees.

7. Recreational Facilities

- a. The lighting fixtures at all public or private outdoor recreational facilities shall be designed to minimize the amount of light that is directed upward into the air, glare, and light trespass. The illumination of any public or private outdoor recreational facility after 11:00 p.m. is prohibited, except in order to conclude a specific activity, previously scheduled, which is in progress under such illumination prior to 11:00 p.m.

8. Exemptions

- a. This Ordinance shall not apply to the following exterior lighting sources:
 - i. Airport lighting required by law.
 - ii. Temporary emergency lighting.
 - iii. Temporary lighting, other than security lighting, at construction projects.
 - iv. Governmental facilities where a compelling need for safety and security has been demonstrated.

- v. Lighting for flag poles, church steeples or other similar non-commercial items provided they do not cause distraction within public rights-of-way.



Map 91-2

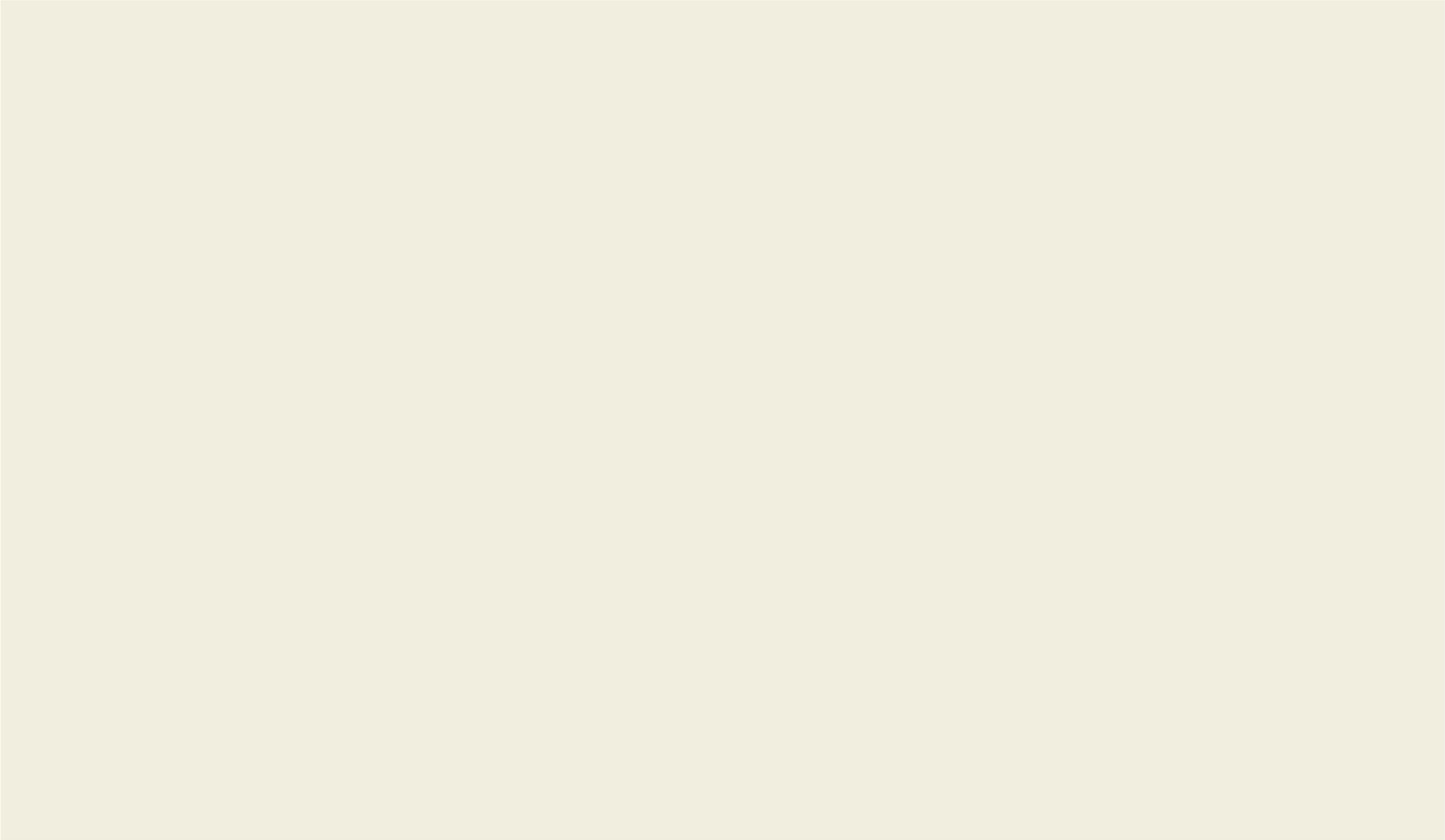


Pedestrian Bollard: Lumec 'SoleCity'

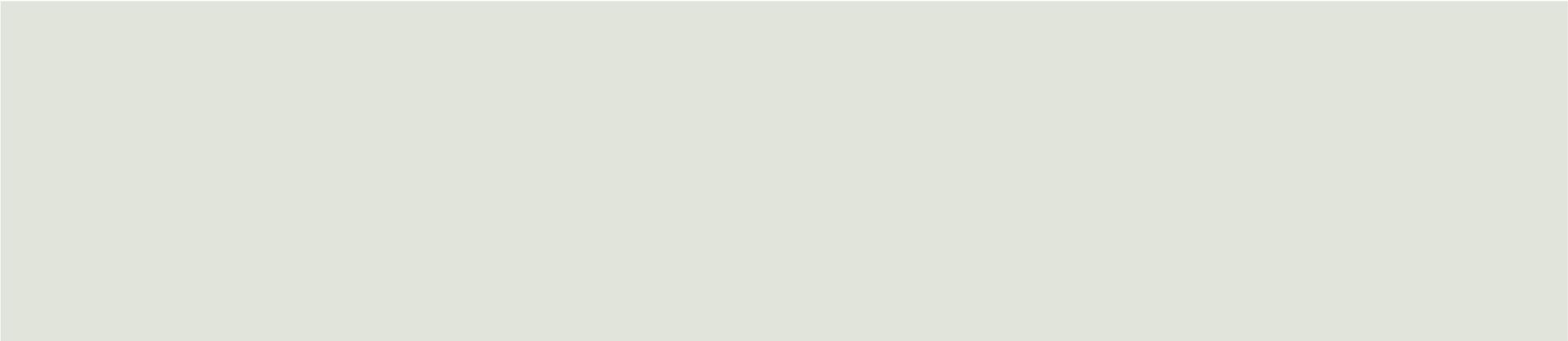
Application	Fixture	Mounting Height	Pole	Color	Color Temperature Range
Roadway	Kim 'Altitude'	Private: 30' Max	Round, Tapered	RAL 7043	4,000 - 5,000 Kelvin
		Public: As determined by photometric plan			
Parking	Kim 'Altitude'	25' Max	Round, Tapered	RAL 7043	4,000 - 5,000 Kelvin
Pedestrian	Architectural Area Lighting 'Largent'	14' Max	Round, Tapered	RAL 7043	3,500 - 4,000 Kelvin
	Lumec 'City Spirit'				
Pedestrian Bollard	Lumec 'SoleCity'	4' Max.	N/A	RAL 7043	3,500 - 4,000 Kelvin

Figure 91-1: Kettlestone Overlay District Lighting Fixture Schedule

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Landscape Guidelines



Open Space, Landscape, and Buffer Regulations

I. Purpose and Scope

- A. The purpose of this chapter is to establish a minimum standard for the preservation, installation, and maintenance of landscape plantings and landscape open space in all residential, office, and commercial properties, to utilize landscaping and landscaping open space as: an effective means of energy conservation, to preserve open space, to improve property values, to maintain the aesthetic quality of the City. Thereby promoting the health and general welfare of the City.

II. Landscaping Regulations

- A. The following standards shall apply to all districts and required landscape plantings. (individual districts may have additional standards).
 1. All landscape installations shall expand upon the character established within the Kettlestone Greenway system. When possible open spaces shall be placed adjacent to larger green spaces.
 2. Interference with site drainage: Landscape elements / plantings shall not be placed where they interfere with site drainage patterns.
 3. Plantings shown on approved site plan: Landscape plantings shall not be placed in any public utility easement unless specifically permitted on the approved site plan.

4. Interference with Public Utilities: Plantings shall not be placed where they may interfere with maintenance of sanitary and storm structures, fire hydrants, water valves, or any other public utility.
5. Approved Plantings: Landscape plantings shall not be placed in the public R.O.W. unless previously approved by the city council and shall not be counted toward fulfillment of the minimum site requirements outlined below.
6. Vision Clearance Triangle: vision clearance triangle shall be maintained at all times.
7. Existing Landscaping Identified and Protected: All existing landscaping which is not to be removed pursuant to the grading, landscape, or site plan; shall be clearly identified and prior to the issuance of a grading permit, shall be protected by fencing located around the drip line of the tree.
8. Preservation of Existing Landscaping: A successful planting area takes time to mature and provide the benefits that it was designed for. With this in mind, whenever practical; existing landscapes / trees shall be preserved and incorporated into the overall design and layout of the site.

9. Quantity of Trees Required: In sites where landscaping existed and was retained during development, the minimum quantity of trees required may be reduced. This will be reviewed on a case by case basis and a survey of any trees larger than six (6) inch caliper is required. The tree survey (inventory) shall include species, size, and a location map.
10. Prohibited Plantings: Plant species to be used for landscaping shall be acceptable to the City and are not considered a nuisance or an undesirable species, such as:
 - a. Cotton bearing poplar
 - b. All Ash tree varieties
 - c. Disease susceptible Elms – Siberian Elm in particular
 - d. Tree of Heaven
 - e. Mulberry
 - f. Female Ginkgo
 - g. All Silver Maple varieties
 - h. Non-seedless or non-thornless Honey Locust

III. Minimum Open Space Required

- A. Within the Kettlestone corridor, the City has made a major commitment to greenways, plantings, community lakes/retention ponds, and open space. Therefore, the open space requirements within the district will be less than the remaining areas within Waukee. They will be less, but not eliminated. Site designers are encouraged to design outdoor areas on individual sites that complement the city investment and capitalize on the views of the greenway system. The percent of the total site area that is required to be established as Open space shall be provided as listed in Table 94-1 by general use category within the Districts. No open space percentages are required for single family detached residential uses. (Designers are encouraged to submit designs that consolidate green spaces between parcels or adjoin public spaces.)
- B. Open Space Reduction: All properties that are within and otherwise participate in an established storm water fee district shall have their open space requirement reduced by five percentage (5%) points. Properties that have previously dedicated to the City for no fee land to be utilized as public green space, public open space, and/or area for regional storm water detention shall have their open space requirement reduced by five percentage (5%) points proportional to the acreage of land donated. Map 95-1 outlines the properties that shall receive this open space requirement reduction based on their previous donation of greenspace to the city. These reductions in open space may be cumulative.

Disclaimers:

- All Mixed Use, General Commercial, and Big Box retail will be required to meet the parking island regulations regardless of the open space percentage indicated.
- Pedestrian areas will be required to have a high level of finish including, benches, concrete pavers, decorative light fixtures, plantings, artwork, etc.
- Required outdoor spaces must be connected to the greenway system via walkway and/or integral to the design of the development.
- Pedestrian plazas and outdoor spaces may be included in the calculations as open space.

	Medium Density Residential	High Density Residential	Mixed Use	Office / Civic	General Commercial / Retail / Service	Big Box Retail
The Shops at Kettlestone	20%	n/a	15% + One integrated pedestrian plaza per 75,000 SF of commercial or office use (size proportional to level of finish) Parking Lot Islands Still Required	25% + One Outdoor Public Space 3,000 SF Min, Aesthetically pleasing, Pedestrian Friendly	20% + One integrated pedestrian plaza per 75,000SF of commercial or office use (size proportionate to level of finish)	20% + Must address the pedestrian experience along the front façade. Integrate the storefront with the pedestrian walkway.
Kettlestone Plaza	20%	n/a	15% + One integrated pedestrian plaza per 50,000 SF of commercial or office use (size proportional to level of finish)	25% + One Outdoor Public Space 2,000 SF Min, Aesthetically pleasing, Pedestrian Friendly	20% + One integrated pedestrian plaza per 50,000SF of commercial or office use (size proportionate to level of finish)	20% + Must address the pedestrian experience along the front façade. Integrate the storefront with the pedestrian walkway.
Kettlestone Commons	n/a	n/a	15% - Immediate pedestrian connection to Greenway (or) One integrated pedestrian plaza per 30,000SF of commercial or office use (size proportionate to level of finish)	25% + One Outdoor Public Space 3,000 SF Min, Aesthetically pleasing, Pedestrian Friendly	20% - Immediate pedestrian connection to Greenway (or) One integrated pedestrian plaza per 30,000SF of commercial or office use (size proportionate to level of finish)	20% + Must address the pedestrian experience along the front façade. Integrate the storefront with the pedestrian walkway.
Kettlestone Village	20%	20%	15% + One integrated pedestrian plaza per 25,000SF of commercial or office use (size proportionate to level of finish)	25%	n/a	n/a
Glacier Park	20%	20%	15% + One integrated pedestrian plaza per 25,000SF of commercial or office use (size proportionate to level of finish)	25%	20% + One integrated pedestrian plaza per 25,000SF of commercial or office use (size proportionate to level of finish)	n/a
Glacier Springs	20%	20%	n/a	25%	n/a	n/a
The Canopies at Kettlestone	20%	20%	15%+ One integrated pedestrian plaza per 30,000SF of commercial or office use (size proportionate to level of finish)	25%	20% + One integrated pedestrian plaza per 25,000SF of commercial or office use (size proportionate to level of finish)	n/a

Table 94-1: Open Space Regulations (see disclaimers)

C. Definitions:

Open Space: Any area within a single site or lot that is not covered by building, structure, parking lot, or driveway. Sidewalks, patios, or other paved or hard surfaced area (included within any outdoor public or private space may be counted as open space).

Big Box Retail: Any single tenant retail building or space that is 50,000 sq. ft. in gross floor area or larger.

IV. Minimum Planting Requirements

A. The provisions below represent the minimum standards required for compliance of this chapter. These regulations are not intended to suppress creative design concepts or the use of variety in a landscape plan.

1. Minimum Size: The minimum size for all required plantings, shall be as follows:
 - a. Deciduous overstory trees shall be a minimum of 8'-0" tall.
 - b. Evergreen overstory trees shall be a minimum of 6'-0" tall.
 - c. Deciduous understory trees shall be a minimum of 6'-0" tall.
 - d. Deciduous and evergreen shrubs shall be a minimum of 2'-0" tall.

2. Planting Standards:

- a. All non-hard surfaced areas shall be planted with turf grass or ornamental grasses or other ornamental ground cover that are appropriate for the climate and location.
- b. A minimum depth of 3 inches of mulch shall be placed around all plants. All trees shall have a ring of mulch no less than 24 inches beyond base of the tree.
- c. Large mulched areas without plants are not permitted.
- d. All plant beds and mulched areas shall be maintained and kept free of weeds.
- e. Areas near and around waterways, drainage channels, ponds, and water retention areas shall be well maintained and not allowed to overgrow with voluntary vegetation. The maintenance standard for any existing natural wooded or wetland area shall be determined by the City Council at the time of site plan approval.

3. Plant Locations:

- a. Trees shall be located no closer than four foot six inches (4'-6") to the back-of-curb of any parking lot or driveway.
- b. Minimum clearance shall be maintained from all fire hydrants and building fire sprinkler connections as specified by fire department regulations.
- c. Trees and shrubs that overhang or encroach into a pedestrian walkway shall be maintained to provide a minimum of eight feet (8') of vertical clearance. Trees and shrubs that hang

over parking lots, driveways, or streets shall be maintained to provide a minimum of fourteen feet (14') of vertical clearance.

d. No landscaping shall be planted within or otherwise allowed to grow into a vision clearance zone as specified herein these regulations, or otherwise cause a visibility safety hazard for pedestrian or vehicular traffic as may be determined by the City.

4. Minimum Quantity: The minimum number of plantings per site shall be as follows:

- a. A minimum of fifty percent (50%) of all required trees shall be overstory shade trees.
- b. For all uses except single family attached and detached residential dwellings a minimum of twenty-five percent (25%) of all required trees shall be evergreen.
- c. Buffer and Screening landscape requirements are separate from, and shall be in addition to, the plantings required below:
 - i. All residential developments, including single family detached residential, shall have two (2) overstory trees and one understory tree per residential unit.
 - ii. All non-residential uses shall install 1.5 overstory trees, 0.5 understory trees, and two (2) shrubs for every 1,000 sq. ft. of required open space.
 - iii. Foundation plantings are required at the base of all buildings. Foundation plantings may include shrubs, ornamental grasses, perennials, and ground covers. All foundation plantings are in addition to the required open space plantings.

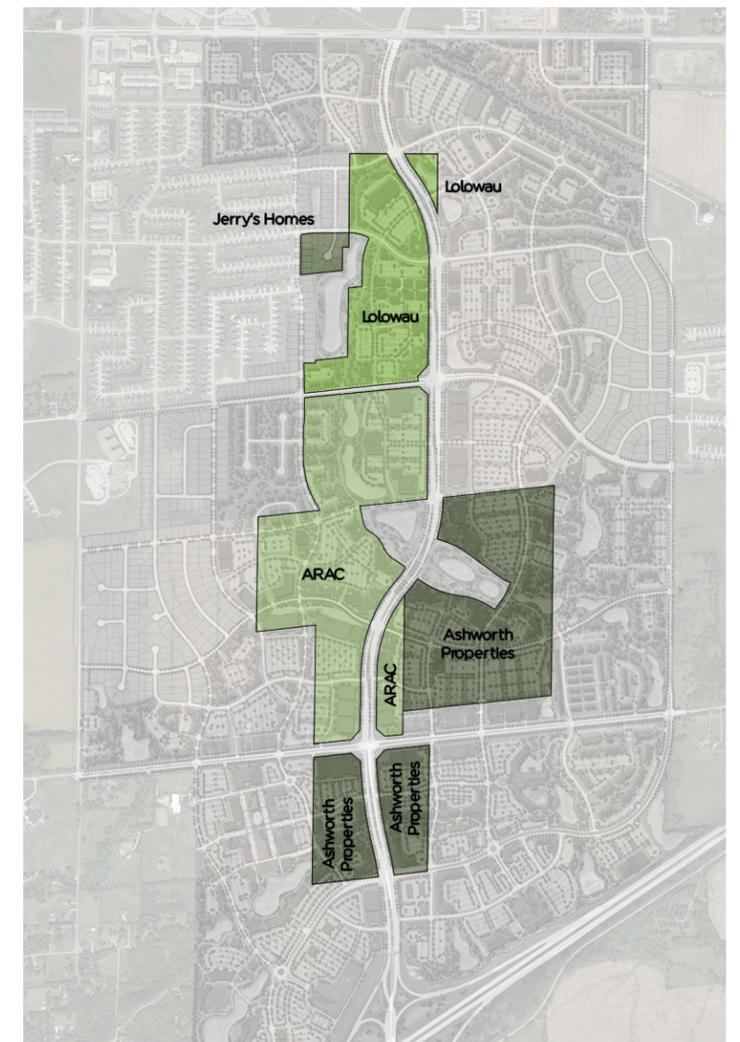
V. Off-Street Parking Areas

A. All of the following requirements shall apply to off street parking areas except for single family attached and detached parking in driveways as follows:

1. All parking lot islands shall have a minimum of 1 overstory tree within them. The entire landscaped island area shall be covered with plant materials, lawn, or mulches.
2. Parking lots that propose green infrastructure, which requires an adjusted plant palette, must be coordinated with the City. These are encouraged, but not at the expense of eliminating all shade.
3. All rows of parking shall be terminated with a landscaped island. Said island shall be no less than ten (10') feet in width and seventeen (17') for a single row of parking or thirty-four (34') in length for a double row of parking.
4. There shall be provided within each row of parking spaces, landscaped islands with a minimum width of nine (9') feet width and seventeen (17') or thirty-four (34') in length (measured

from back-of-curb to back-of-curb), depending upon single or double rows of parking, located so as to prevent more than fifteen (15) vehicles from being parked side by side in an abutting configuration.

5. The setback between the parking area and the public R.O.W. shall be landscaped with a minimum of two (2) overstory deciduous trees and eight (8) shrubs per fifty (50') linear feet of frontage. The frontage calculation shall be exclusive of the driveways. The plantings should be planted in clusters to create a natural feel to the plantings. In certain instances individual, more 'typical' street tree configurations will be considered. This requirement shall not be included in the minimum number of trees required for the site and is in addition to the required minimum.



Map 95-1: Properties Receiving Open Space Reduction Credit of five percentage (5%) points for Green Space Dedication

VI. Buffer and Screening Requirements

- A. It is recognized that the transition from one district to another district of contrasting and conflicting uses crosses a line; that in theory, does not exist. Therefore, it is the intent of this chapter to require the actual provision of a physical barrier so as to reduce possible harmful and detrimental influence that one zoning districts' use may have on an abutting contrasting use. The following are conditions for requiring a buffer.
 - 1. Any single family detached lot, having both its front and rear lot lines abutting a public thoroughfare (double frontage lot) shall require a twenty-five (25') foot wide buffer easement adjoining the thoroughfare from which no access is planned or permitted.
 - 2. Medium and High density residential shall have a twenty-five (25') foot wide buffer between it and Single Family residential.
 - 3. Commercial uses shall have a twenty-five (25') wide buffer between all residential and mixed-use districts.
 - 4. Commercial loading docks shall not face residential districts. All Commercial loading docks shall have a fifty (50') foot buffer between themselves and adjacent use or public roadway.
 - 5. The more intense use shall provide the buffer required. In an instance where adjacent property is down zoned, thereby requiring an additional buffer, the newly zoned property shall provide the additional buffer required.
 - 6. Buffer Planting Requirements: The following shall be the minimum requirement. All buffers shall provide the plantings as prescribed below:
 - a. Buffer Material Requirements: Required for every fifty (50') linear feet of buffer
 - i. 25' depth = 1.5 Overstory trees, 2.5 Evergreen trees, 2.5 Ornamental trees, and 15 Shrubs. Where possible, due to grade, a minimum 4' berm shall be placed within this zone.
 - 7. Whenever practical, existing trees and shrubs should be preserved and incorporated into the overall design of the buffer and can be included to meet the total number of required trees. As an incentive to do this: The buffer depth can be reduced by up to ten (10') feet, if it is determined by City staff that the buffer is already fulfilling its desired function. In rare cases and circumstances the buffer requirement can be eliminated, but that would require City Council action.
 - 8. In addition to the required permanent landscape buffer, the City Council may require a fence to provide additional screening. Such fence shall be constructed of substantial support elements, including but not limited to, brick, poured concrete, and stone. Steel posts shall not be considered appropriate.
 - 9. Buffers may be included within the building setback areas as required by this title. However, in the case of a buffer required for

a single family residential double frontage lot, all building setback lines shall be measured from the buffer or buffer easement line.

- 10. No building, parking, fences, or structures shall be permitted within any buffer, unless specifically authorized by City Council. Fences may be allowed within a buffer provided said buffer is not adjacent to a public or private street or driveway or is otherwise a buffer required for a single family residential double frontage lot, in which case no fences are permitted within the buffer or buffer easement area.
- 11. Easements shall generally be required for buffers for detached single family double frontage lots. Buffer easements shall be recorded with the county at the time of establishment, prior to, or concurrent with the recording of the final plat.
- 12. For single family residential subdivisions, the landscape buffer shall be submitted for review and approval as a public improvement, at the same time as the preliminary plat. For any type of development that requires a site plan review, the buffer plans shall be submitted as a part of the site plan submittal.
- 13. The developer of a single family residential subdivision shall be required to install the buffer improvements required by this section as part of the plat improvements. The owner of the adjacent property or the established homeowners' association shall maintain the property in perpetuity. If the association is not active, the home owner is still responsible for maintaining this space.
- 14. In a situation that has landscape requirements other than those stated in the buffering requirements, the buffering requirements shall be in addition to any other required landscaping.
- 15. The need to establish the buffer as an easement shall be reviewed and identified during the development review process.

VII. Reduction in Required Buffer

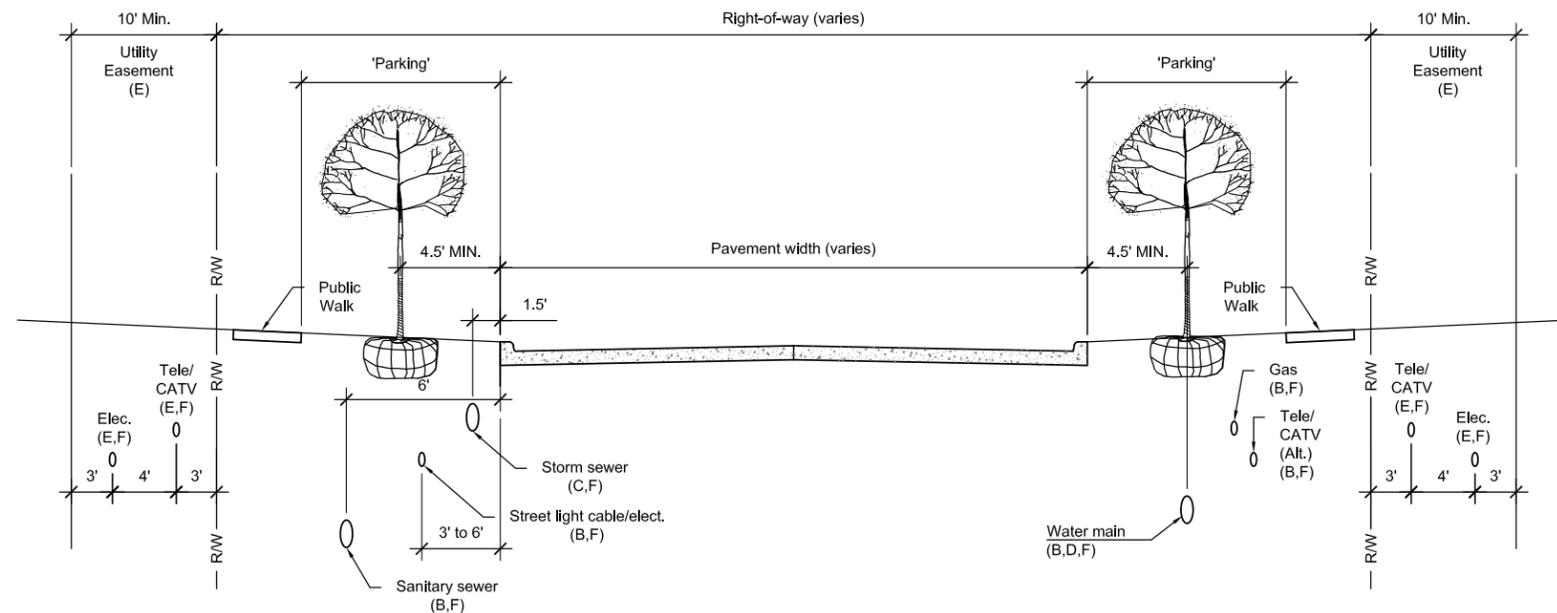
- A. The City Council may, at its discretion, reduce the required buffer under the following conditions:
 - 1. In those areas where the boundary line abuts permanent natural features which function as a buffer, including, but not limited to, ponds, severe grades, or mature woodlands, requirements for a buffer area for that portion of the boundary may be reduced by the city council in the proportions that the permanent natural feature fulfills the buffer requirements.
 - 2. In those areas where the property abuts an undeveloped property that is shown on the adopted land use plan as the same or more intensive use.
 - 3. The abutting property has provided a portion or all of the required screening.
 - 4. In those areas that abut a public park, the buffer area for that portion of the boundary may be reduced by fifty (50%) percent of the requirement.

- 5. On lots that can present evidence that the buffer provisions would render the property unbuildable, the City Council may grant a waiver of the buffer requirements and permit a fence of not less than six (6') feet in height. Provisions for landscaping to soften the visual appearance of the fence and provide additional screening may be required on a case by case basis.

VIII. Street Tree Requirements

- A. In that the City of Waukee desires to create a uniform feel and substantial tree canopy in the Kettlestone district, this street tree requirement applies to all zoning districts and is in addition to all other planting requirements. Properties that have frontage along public street rights-of-way that are classified as arterial, major collector, and minor collector roadways shall comply with the following:
 - 1. Minimum size: The minimum sizes for street tree plantings shall be deciduous overstory trees at a minimum of twelve (12) ft. tall.
 - 2. Planting Standards:
 - a. For the purpose of these regulations, "parking" shall mean that portion of the public right-of-way between the existing or proposed street curb line or paving edge and the street side of a public sidewalk or sidewalk line.
 - b. No tree shall be planted in any parking island less than eight (8) feet in width.
 - c. No tree shall be planted closer than four feet six inches (4'-6") to the back-of-curb, measured from the center of such tree.
 - d. No tree shall be planted closer than four feet six inches (4'-6") to the edge of a fire hydrant or closer than ten (10) feet to the edge of any driveway, measured from the center of such tree.
 - e. No tree shall be planted closer than the width of its average mature spread to a light standard or transmission pole, measured from the center of such light standard or transmission pole and the center of such tree.
 - 3. Minimum quantity: The minimum number of street tree plantings shall be as follows:
 - a. All non-residential districts: One (1) tree for every 40 lineal feet of frontage along a public street as defined in paragraph VIII. A, exclusive of access drives.
 - b. All residential districts, including single family detached residential shall provide one (1) tree for every 40 lineal feet of parking area along a public street, exclusive of access drives, or one (1) tree minimum.
 - c. Street trees may be counted towards the satisfaction of the tree planting requirement for any adjoining off-street parking area.

4. Spacing: It is not required that street trees be evenly spaced at 40 foot centers. That is merely used to calculate necessary quantities. If the area allows, trees may be planted in more informal groupings which can result in more effective screening and visibility of business fronts.
5. Street Tree Species: As shown in Table 97-2 Acceptable Street Trees. No conifers are allowed within the city right-of-way, or “parking” areas, unless specifically authorized by the City Council as part of the Development Review Process.
6. Street and driveway intersection vision clear zones:
 - a. All street tree plantings shall comply with the traffic and pedestrian intersection vision clear zones as provided for on page 48, herein these guidelines.



UTILITY NOTES

- A. ROW width varies.
- B. When utilities are in the ROW, the following should be adhered to utilities otherwise provided/approved:
 1. All utilities should be buried. When overhead utilities are allowed to cross the roadway, then minimum vertical clearances are 20 feet for the main cable, and 18 feet for services.
 2. Telephone, cable TV, and water: install on the east and south side of the road.
 3. Gas and electric: install on the west and north side of the road.
 4. Sanitary sewer: install on the west and north side of the road.
- C. Storm Sewers: The normal location for a storm sewer is 1.5 feet from back of curb. When combination manholes and intakes are used, the location increases to 5 feet.
- D. Water mains, Valves, and Hydrants:
 1. The normal water main location is 4 feet behind the back of curb. In areas of combination manholes and intakes, this distance is increased to a minimum of 6 feet.
 2. For local streets and minor collectors with limited ROW, use a 90° anchoring elbow between the hydrant tee and the valve. For maintenance purpose, the minimum distance between the centerline of the valve box and the face of the hydrant is 18 inches.
- E. Utility Easement: Telephone, fiber optic, cable TV, electric, and gas lines should be located in front or rear yard easements. Normally telephone and cable TV lines are placed in rear yard easements and fiber optic, electric, and gas lines in front yard easements. Upon approval of the jurisdiction, these utilities may be placed in the right of way at the alternative location when easements do not exist.
- F. Depth of bury:
 - Cable TV (CATV): 3 feet minimum.
 - Electric (Elec.): The recommended depth of bury for electric cable is 4 feet. The minimum depth of bury for electric lines as per the National Electric Safety Code is:
 - 8kV to 5kV cable - 30 inches minimum.
 - Up to 600-volt cable - 24 inches minimum.
 - Street light cable - 18 inches minimum.
 - Gas: 3 feet minimum.
 - Water: varies
 - Sanitary Sewer: Varies
 - Storm sewer: Varies. Approximately 4 feet.
 - Telephone (Tele.)/Fiber optic (F.O.): 3 feet minimum.

Street tree planting in public right-of-way. If parking area is less than 8 feet in width, no trees are to be planted. No tree shall be planted closer than 5 feet to the edge of a fire hydrant, or closer than 10 feet to the edge of any access drive.

Figure 97-1: Typical Street Tree Planting

BOTANICAL NAME

BOTANICAL NAME	COMMON NAME
Acer ginnala (single stem)	Amur Maple
Acer platanoides columnar	Columnar Norway Maple
Acer plantanoides	Norway Maple
Acer saccharum 'Legacy'	Legacy Sugar Maple
Carpinus caroliniana	American Hornbeam
Ginkgo biloba (male only)	Ginkgo
Gleditsia triacanthos var. inermis 'Skyline'	Skyline Honeylocust
Gleditsia triacanthos var. inermis 'Sunburst'	Sunburst Honeylocust
Gymnocladus dioicus (male only)	Kentucky Coffeetree
Malus 'Adams'	Adams Crab Apple
Malus 'Pink Spires'	Pink Spires Crab Apple
Malus 'Snow Drift'	Snowdrift Crab Apple
Malus 'Spring Snow'	Spring Snow Crab Apple
Malus 'White Candle'	White Candle Crab Apple
Ostrya virginiana	American Hophornbeam (Ironwood)
Platanus occidentalis	American Planetree
Quercus borealis (rubra)	Northern Red Oak
Quercus coccinea	Scarlet Oak
Quercus macrocarpa	Bur Oak
Quercus robur	English Oak
Tilia cordata	Littleleaf Linden
Tilia americana 'Redmond'	Redmond American Linden
Tilia americana 'Fastigiata'	Fastigiata (Pyramidal) American Linden
Ulmus 'New Horizon'	New Horizon Elm
Ulmus 'Patriot'	Patriot Elm
Ulmus 'Frontier'	Frontier Elm
Ulmus 'Morton'	Accolade Elm

Table 97-2: Acceptable Street Trees

Fences and Walls

I. Regulations regarding fences and walls shall be as follows:

- A. Purpose. The regulation of fences is intended to protect the public safety and welfare while maintaining the integrity of the community; providing privacy; buffering noise; and allowing adequate air, light and vision.
- B. Permit required. Fence permits shall be required to construct fences and walls.
- C. Allowed Materials:
 1. Fences are to be constructed of customarily used materials such as chainlink, welded wire mesh, wrought iron, aluminum, wood, polyvinyl chloride (PVC), ornamental woven wire and other similar materials, unless specified otherwise herein. Any fence, as determined by the City, not be a standard or customarily styled or constructed fence is prohibited.

The use of materials such as sheet metal, chicken wire, temporary construction fencing, snow fencing, woven wire commonly used for the penning of livestock or other animals or similar materials shall not be permitted for permanent fencing. A fence shall not be constructed or covered with: paper sheets or strips; cloth or fabric tarps, sheets, or strips; plastic or vinyl tarps, sheets, mesh, or strips; bamboo; reed; or plywood sheeting. Chainlink or woven wire type fences shall not include plastic or wood slats or strips, bamboo, or reed. Wood fences shall be constructed of treated lumber, cedar, redwood, or similar types of wood that are resistant to decay. All fences must be of an earth tone, neutral, or natural color such as white, black, gray (silver), tan, brown, green. Bright or fluorescent colors are not permitted. Pictures, images, lettering, logos, graphics, or artwork are not permitted on fences.

An exception may be approved by the City Council for sun and/or wind screen material applied to fences directly associated with a sports or recreation facility such as tennis court fences, baseball field fences, or basketball courts, subject to the provisions of this section herein below. An exception also may be approved by the City Council for mesh screen material associated with a commercial or industrial site.

- 2. Walls are to be constructed of brick, stone, textured concrete, precast concrete, tile block, etc. Walls constructed of weather resistant wood or manufactured substitutes may be used if brick or stone columns are incorporated and spaced no more than twenty feet (20') on center.
- D. Prohibited Materials: A fence or wall may not be designed to cause pain or injury to humans or animals. Therefore, the use of spikes, broken glass, barbed wire, razor wire, nails, electrical charge or other similar materials shall be prohibited, unless specified otherwise herein.
- E. Construction and Maintenance: All fences shall be constructed in a sound and sturdy manner and shall be maintained in a good state of repair, including the replacement of defective parts, painting, and other acts required for maintenance.
- F. Measuring Fence Or Wall Height:
 1. The height of a fence shall be determined by a measurement from the ground beneath the fence as follows:
 - a. In a yard abutting a street, the total effective fence height above the finished grade shall be measured on the side nearest the street. Notwithstanding, if a property or

premises is lower than an adjacent street, then the height of the fence shall be determined by a measurement from the street grade at a ninety degree (90°) angle from the fence; provided the total vertical measurement from the ground beneath the fence to the top of the fence shall not exceed eight feet (8') (See Figure 98-1).

- b. In any other required yard the total effective fence height above the finished grade shall be measured on the side nearest the adjacent property.
- c. On a property line, the fence height shall be measured from the finished grade of the side of the adjacent property.
- 2. Swales and other earth depressions up to six feet (6') wide shall not be used when measuring the fence's height. Manmade earth berms, terraces, and retaining walls that elevate the fence shall be considered a part of the fence.
- G. Fence Location and Height Restrictions: Fences and walls not exceeding six feet (6') in height are allowed within the limits of side and rear yard building setbacks. A fence or wall, not exceeding four feet (4') in height is allowed up to the property line within the front yard provided the visual clearance zones are maintained. No fences are permitted within a buffer easement area.
 1. Corner Lots and Double Frontage Lots: On corner lots and double frontage lots, fences not more than six feet (6') in height may be placed in a required front yard abutting a street where all the following are met:
 - a. The required front yard abutting the street is used as a side yard and not as a front yard.



Unacceptable example of a fence used for screening.



Approved Fence Materials: Chain link (Left), Ornamental Metal Fence (Right)

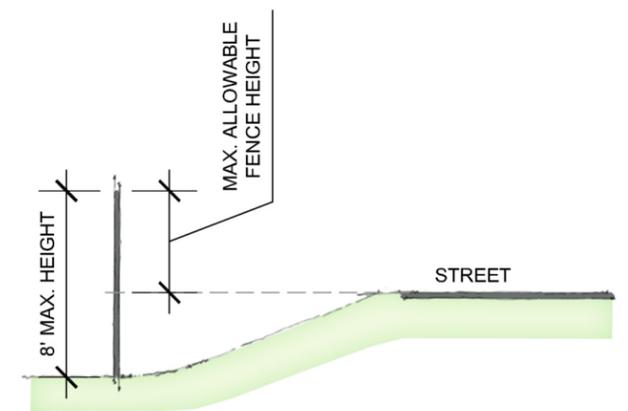


Figure 98-1: Below Street-Grade Fence

- b. The fence maintains a minimum setback from the right of way of fifteen feet (15’).
- c. The vision clearance area is maintained.
- d. No fences are permitted within a buffer easement area.
- e. Any six-foot fence in the front yard adjacent to the arterial or collector street shall meet one of the following conditions:
 - i. Columned: Masonry columns with a minimum cross section of 16 inches by 16 inches placed at a maximum interval of 24 feet on-center along the length of the fence. Additional columns shall also be required at all fence corners and turning points and at all fence termination points.
 - ii. Capped and Trimmed: Upgraded wood fences, including exposed wood posts, top caps, and trim boards.
 - iii. Decorative metal: Wrought iron style fencing.

H. Overland Flowage Easements:

1. Subject to City Council approval, fences may encroach into an overland flowage easement provided measures are taken to make certain that the fence does not restrict the water flow, cause siltation buildup, etc.
2. Permitted fence material includes chainlink, wrought iron fencing, picket style fencing that is at least thirty percent (30%) open, or other fencing styles that are at least thirty percent (30%) open.
3. Solid fencing shall be elevated a minimum of six inches (6”) through the swale part of the easement to allow water flowage.



Above: Columned Fences



Above: Capped and Trimmed Wood Fences



Above: Ornamental Fence Gates

I. Retaining Walls

1. Retaining walls shall be set back from the property line one foot (1') for every one foot (1') of height, unless a mutual written agreement on the height and location of the retaining wall has been made with the adjoining property owner.
2. Retaining walls which are more than four feet (4') in height shall be structurally engineered. The design specifications, elevations and site plan showing the exact location of the wall shall be provided along with the required building permit.
3. No single retaining wall face shall be greater than six feet (6') in height without terraces to break up the wall expanse. A minimum one foot (1') of terrace shall be used for each two feet (2') of wall height. Each terrace shall contain vegetation.
4. All retaining walls shall be constructed to accommodate drainage and shall include drain tile.

J. Exceptions

1. Fences associated with the uses of a sports or recreational facility or other similar area, shall not be subject to the height restrictions specified elsewhere in this section, provided that such fence is constructed to maintain a consistency of at least seventy five percent (75%) open space for the full length of the fence and does not impede the required vision clearance. Any such fence is subject to design review and approval of the City Council.

K. Decorative Features

1. In all districts, decorative features such as individual posts, brick or stone columns, and similar features constructed as part of a fence or wall shall be allowed to exceed the maximum fence height by no more than six inches. Decorative features shall not be counted towards the open space percentage of the fence. Pedestrian entry features which only include arbors, arched entries, trellises, architectural green screens, arcades, or finials may exceed the maximum allowable fence height in any yard subject to design review and approval of the Development Services Director.



Above: Boulder Retaining Walls