

## ARTICLE 6

### ENVIRONMENTAL PROTECTION AND DESIGN PROVISIONS

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#### **Section 6.1 Purpose.**

Environmental standards are established in order to preserve the short and long-term environmental health, safety, and quality of the City. The standards in this Article are established as minimum requirements to be maintained to ensure no parcel, lot, building or structure in any district is used or occupied in any manner so as to create any dangerous, injurious, noxious or otherwise objectionable element or condition so as to adversely affect the surrounding area or adjoining premises. Any use permitted by this Ordinance may be undertaken and maintained if acceptable measures and safeguards are employed to limit dangerous and objectionable elements to acceptable limits as established by the following performance standards. No use, otherwise allowed, shall be permitted within any district which does not conform to the following standards of use, occupancy, and operation.

#### **Section 6.2 Landscaping, Greenbelts and Buffers, and Screening.**

6.2.1. Intent. The intent of this section is to:

1. Protect and preserve the appearance, character, and value of the community.
2. Minimize noise, air, and visual pollution.
3. Improve the overall aesthetics and appearance, divide the expanse of pavement, and define parking areas and vehicular circulation within off-street parking lots and other vehicular use areas.
4. Require buffering of residential areas from more intense land uses and public road rights of way.
5. Prevent soil erosion and soil depletion and promote sub-surface water retention.
6. Encourage an appropriate mixture of plant material, such as evergreen and deciduous trees and shrubs, to protect against insect and disease infestation and produce a more aesthetic and cohesive design.
7. Encourage the integration of existing woodlands in landscape plans.

6.2.2. Application of Requirements. These requirements shall apply to all uses for which site plan review is required under Section 3.4 of this Ordinance and subdivision plat review as required under the Subdivision Control Ordinance.

### Required Buffers

6.2.3. Landscape Plan Requirements. A separate detailed landscape plan shall be required to be submitted to the City as part of the site plan review or tentative preliminary plat review. The landscape plan shall demonstrate that all requirements of this Section are met and shall include, but not necessarily be limited to, the following items:

1. Location, spacing, size, root type and descriptions for each plant type.
2. Typical straight cross section including slope, height, and width of berms.
3. Typical construction details to resolve specific site conditions, such as landscape walls and tree wells used to preserve existing trees or maintain natural grades.
4. Details in either text or drawing form to ensure proper installation and establishment of proposed plant materials.
5. Identification of existing trees and vegetative cover to be preserved.
6. Identification of grass and other ground cover and method of planting.
7. Identification of landscape maintenance program including statement that all diseased, damaged, or dead materials shall be replaced in accordance with standards of this Ordinance.
8. Planting counts identifying compliance with all required landscaping must be provided.

6.2.4. Buffer Zones.

1. A buffer shall be provided between the subject site and all adjacent properties, developed or undeveloped, in accordance with the Table set forth in Section 6.2.4.
2. The buffers required in the Table set forth in Section 6.2.4 shall adhere to the following minimum requirements. Additional landscaping may be required by the Planning Commission if deemed necessary to provide the desired screening.
  - a. Type A Buffers shall be a minimum thirty (30) feet wide, along the property line with two (2) trees and four (4) shrubs per twenty (20) linear feet, rounded upward, and may also include a wall, berm or combination of these elements as determined by the Planning Commission.
  - b. Type B Buffers shall be a minimum ten (10) feet wide, along the property line with one (1) tree and four (4) shrubs per twenty (20) linear feet, rounded upward.
  - c. Type C Buffers shall adhere to the standards for Type B Buffers, except that a reduced width and/or screening wall or fence may be allowed in lieu of some or all of the planting requirements when site conditions or surrounding zoning and uses so allow, as determined by the Planning Commission.

Zoning or use of Subject Site	Zoning or use of Adjacent Site										
	Single-Family	Multiple-Family	Manufactured Housing	Office	Institutional, Medical or Municipal Use	Central Business District	Commercial	Industrial	Outdoor Storage	Public Utility Buildings & Structures	Parking Lots
Single-Family	none	B	A	B	A	A	A	A	A	A	A
Multiple-Family	B	none	A	B	A	A	A	A	A	A	A
Manufactured Housing	B	B	none	A	A	A	A	A	A	A	A
Office	B	B	B	none	B	B	B	B	B	A	B
Institutional	B	B	B	B	none	B	B	A	B	A	B
Central Business District	B	C	B	C	C	none	C	B	B	C	C
Commercial	A	A	A	B	B	C	none	A	A	A	C
Industrial	A	A	A	B	A	A	A	none	B	B	B
Outdoor Storage	A	A	A	B	B	A	A	B	none	B	B
Public Utility Buildings & Structures	A	A	A	A	A	A	A	B	B	none	B
Parking Lots	A	B	B	C	C	C	C	B	B	C	none

2. Screening Walls and Fences. Where required or allowed, screening walls or fences shall meet the standards of Section 6.3.

6.2.5. Parking Lot Landscaping.

1. *Required Landscaping Within Parking Lots.* Separate landscape areas shall be provided within parking lots in accordance with the following requirements:
  - a. Where landscape islands are required in Section 9.5.3, there shall be a minimum of one (1) tree for every eight (8) parking spaces planted. Islands shall be required for each sixteen (16) continuous spaces. Where landscape islands are not required, the same ratio of trees shall be placed on the site, within ten (10) feet of the parking lot perimeter.
  - b. Landscaped islands shall be curbed and shall not be less than one hundred (100) square feet in area.
  - c. A minimum distance of three (3) feet from the backside of the curb and the proposed landscape plantings shall be provided. Where vehicles overhang a landscape island or strip, a minimum distance of five (5) feet from the backside of the curb and the proposed landscape plantings shall be provided.
  - d. The City, at its discretion, may approve alternative landscape plantings at the perimeter of parking lots where landscaping within parking lots would be impractical due to the size of the parking lot or detrimental to safe and efficient traffic flow, or would create an unreasonable burden for maintenance and snowplowing.

2. *Required Landscaping at the Perimeter of Parking Lots.* Separate landscape areas shall be provided at the perimeter of parking lots in accordance with the following requirements:
  - a. Where required in the Table set forth in Section 6.2.4, parking lots shall meet the buffer requirements set forth in Section 6.2.4.
  - b. Parking lots shall be screened from view with a solid wall at least three (3) feet in height along the perimeter of those sides which are visible from a public road. The City, at its discretion, may approve alternative landscape plantings in lieu of a wall.

6.2.6. **Greenbelts.** A greenbelt shall be provided which is an area equal to the depth of the required front yard setback within that zoning district and landscaped in accordance with the following requirements:

1. The greenbelt shall be landscaped with a minimum of one (1) deciduous tree for every thirty (30) lineal feet, or one (1) ornamental tree for every twenty (20) lineal feet, or fraction thereof, of frontage abutting a public road right-of-way. Such trees shall meet the minimum size and spacing requirements set forth in Section 6.2.11.
2. In addition to the required trees within the greenbelt, the remainder of the greenbelt shall be landscaped in grass, ground cover, shrubs and other natural landscape materials. Ground cover shall not include gravel or stone which, in the opinion of the Planning Commission, can cause safety concerns and vehicle damage if located too close to a public roadway.

6.2.7. **Site Landscaping.** In addition to any landscape greenbelt and/or parking lot landscaping required by this Section, site area landscaping shall be provided to screen potentially objectionable site features such as, but not limited to, retention/detention ponds, transformer pads, air-conditioning units, and loading areas. Such site area landscaping may include a combination of the preservation of existing tree cover, planting of new trees and plant material, landscape plazas and gardens and building foundation planting beds.

6.2.8. **Subdivision and Site Condominium Landscaping.** Landscaping for single-family residential subdivisions and site condominiums shall be provided in accordance with the following requirements:

1. *Street Trees.* The frontage of all internal public or private streets shall be landscaped with a minimum of one (1) tree for every fifty (50) lineal feet, or fraction thereof. Such street trees shall meet the minimum size and spacing requirements set forth in Section 6.2.11.
2. *Buffers Between Land Uses.* Where required in the Table set forth in Section 6.2.4 a subdivision or site condominium buffers shall be required as set forth in Section 6.2.4.
3. *Screening From Public Roads.* Where a subdivision or site condominium abuts a public road right-of-way located outside of the proposed subdivision or site condominium, the screening requirements set forth in Section 6.2.4. shall be met.

4. *Other Site Improvements.* A landscape plan for a subdivision or site condominium development shall also include landscaping details of the entrance to the development, storm water retention and/or detention areas, community buildings and other recreational areas, and any other site improvement which would be enhanced through the addition of landscaping.

6.2.9. Screening of Trash Containers.

1. Outside trash disposal containers two (2) yards or greater in capacity shall be screened on all sides with an opaque fence or wall and gate at least as high as the container, but no less than six (6) feet in height, and shall be constructed of material which is compatible with the architectural materials used in the site development.
2. Containers shall be consolidated to minimize the number of collection sites, and located so as to reasonably equalize the distance from the building they serve.
3. Containers and enclosures shall be located away from public view insofar as possible.
4. Containers and enclosures shall be situated so that they do not cause excessive nuisance or offense to occupants of nearby buildings.
5. Concrete pads of appropriate size and construction shall be provided for containers or groups of containers having a capacity of six (6) 30-gallon cans or more. Aprons shall be provided for loading of bins with a capacity of 1.5 cubic yards or more.
6. The enclosure area and pad size shall be increased to amply accommodate the storage of recyclable materials and their containers.
7. Screening and gates shall be of a durable construction.

6.2.10. Landscape Elements. The following minimum standards shall apply:

1. *Quality.* Plant materials shall be of generally acceptable varieties and species, free from insects and diseases, hardy to Crawford County, conform to the current minimum standard of the American Association of Nurserymen, and shall have proof of any required governmental regulations and/or inspections.
2. *Composition.* A mixture of plant material, such as evergreen deciduous trees and shrubs, is recommended as a protective measure against insect and disease infestation. A limited mixture of hardy species is recommended rather than a large quantity of different species to produce a more aesthetic, cohesive design and avoid a disorderly appearing arrangement.
3. *Berms.* Berms shall be constructed with slopes not to exceed a 1:3 gradient. Berm slopes shall be protected with sod, seed, or other form of natural ground cover.

4. *Existing Trees.* The preservation and incorporation of existing trees is encouraged. Where existing trees are used to satisfy the requirements of this Section, the following requirements shall apply:
  - a. Paving, or other site improvements, shall not encroach upon the drip line of the existing tree(s) to be preserved.
  - b. If existing plant material is labeled “To Remain” on site plans by the applicant or required by the City, protective techniques, such as, but not limited to, fencing or barriers placed at the drip line around the perimeter of the plant material shall be installed during construction. No vehicle or other construction equipment shall be parked or stored within the drip line of any plant material intended to be saved. Other protective techniques may be used provided such techniques are approved by the City.
  - c. In the event that healthy trees which are used to meet the minimum requirements of this Ordinance or those labeled to remain are cut down, destroyed, damaged, or excavated at the drip line, as determined by the City, the Contractor shall replace them with trees which meet Ordinance requirements.
  
5. *Installation, Maintenance, and Completion.*
  - a. All landscaping required by this Ordinance shall be planted before obtaining a Certificate of Occupancy or the appropriate financial guarantee, as set forth in Section 3.7, shall be placed in escrow in the amount of the cost of landscaping to be released only after landscaping is completed.
  - b. All landscaping and landscape elements shall be planted, and earth moving or grading performed, in a sound workmanlike manner, according to accepted planting and grading procedures.
  - c. The owner of property required to be landscaped by this Ordinance shall maintain such landscaping in a strong and healthy condition, free from refuse, debris and insects. All materials used to satisfy the requirements of this Ordinance which become unhealthy or dead shall be replaced within one (1) year of damage or death or the next appropriate planting period, whichever comes first. All landscaped areas shall be provided with a readily available and acceptable water supply.

6.2.11. *Minimum Size and Spacing Requirements.* Where landscaping is required the following schedule sets forth minimum size and spacing requirements; for representative landscape materials:

## SECTION 6.2.11 SIZE AND SPACING REQUIREMENTS

	Minimum Size Allowable				Recommended On-Center Spacing			
	Height/Caliper				(in feet)			
	6'	3'-4'	2"	2.5"	30	25	15	10
<b>TREES</b>								
<b>Evergreen Trees:</b>								
Fir	◆						◆	
Spruce	◆						◆	
Pine	◆						◆	
Hemlock	◆						◆	
Douglas Fir	◆						◆	
<b>Narrow Evergreen Trees:</b>								
Red Cedar		◆						◆
Arborvitae		◆						◆
Juniper (selected varieties)		◆						◆
<b>Large Deciduous Trees:</b>								
Oak				◆	◆			
Maple				◆	◆			
Beech				◆	◆			
Linden				◆		◆		
Ash				◆	◆			
Ginko (male only)				◆	◆			
Honey locust (seedless, thornless)				◆	◆			
Birch				◆		◆		
Sycamore				◆	◆			
<b>Small Deciduous Trees (ornamental)</b>								
Flowering Dogwood (disease resistant)			◆				◆	
Flowering Dogwood (disease resistant)			◆					
Flowering Cherry, Plum, Pear			◆			◆		
Hawthorn			◆				◆	
Redbud			◆			◆		
Magnolia			◆				◆	
Flowering Crabapple			◆				◆	
Mountain Ash			◆				◆	
Hornbeam			◆			◆		

**SECTION 6.2.11 SIZE AND SPACING REQUIREMENTS (con't.)**

	Minimum Size Allowable				Recommended On-Center Spacing				
	Height/Spread				(in feet)				
	6'	3'-4'	24"-36"	18"-24"	10	6	5	4	3
<b>SHRUBS</b>									
<b>Large Evergreen Shrubs:</b>									
Pyramidal Yew		◆			◆				
Hicks Yew				◆				◆	
Spreading Yew			◆				◆		
Alberta Spruce		◆						◆	
Chinensis Juniper Varieties			◆			◆			
Sabina Juniper				◆			◆		
Mugho Pine				◆		◆			
<b>Small Evergreen Shrubs:</b>									
Brown's Ward's Sebion Yews				◆					◆
Horizontalis Juniper Varieties				◆		◆			
Boxwood				◆				◆	*
Euanymous Spreading varieties				◆			◆		
<b>Large Deciduous Shrubs:</b>									
Honeysuckle			◆		◆				
Lilac			◆		◆				
Privet			◆			◆			*
Sumac			◆			◆			
Buckthorn/Tall hedge		◆					◆		*
Pyracantha				◆			◆		
Weigela		◆						◆	
Flowering Quince			◆			◆			
Cotoneaster (Peking and Spreading)			◆				◆		
Dogwood (Red Osier & Grey)			◆			◆			
Euonymous (Burning Bush)			◆			◆	*		
Viburnum varieties			◆			◆			
<b>Small Deciduous Shrubs:</b>									
Barberry				◆			◆		
Dwarf Winged Euonymus				◆			◆		*
Spirea				◆				◆	
Fragrant Sumac				◆					
Japanese Quince				◆					◆
Cotonester (Rockspray, Cranberry)				◆			◆		◆
Potentially				◆					◆

\* For hedge plantings



### **Section 6.3 Fences, Walls and Screens.**

Any person desiring to build or cause to be built a fence or upon property within the City of Grayling shall first apply to the Zoning Administrator for a permit. Application for such permit shall contain any and all information, including site plan, which are required and necessary for the determination of whether the erection of such fence would be contrary to the provisions of this Ordinance. The fee for such permit shall be set by Council resolution.

Except as otherwise required by this Ordinance, the following regulations shall apply:

6.3.1. In a residential district, fences shall not exceed six (6) feet in height, as measured on the side of the proposed wall having the higher grade. However, fences are not permitted in front yards, and fences in side yards shall not exceed (6) feet in height, not to extend past the edge of the front of the house.

1. On a corner lot, the side yard fences that encompasses the rear of the house and the side furthest from the intersection shall follow the fence regulations for back yards.
2. The exterior or finished side, of a fence must face outward to the street property line.
3. All fences shall be maintained and in good repair. Violations require the removal of fence.

6.3.2. In a commercial or industrial districts, no fence, wall, or other screening structure shall exceed eight (8) feet in height as measured on the side of the proposed wall having the higher grade. No fence is allowed in the front yard area or in the area fronting the primary building along the street.

1. On a corner lot, the side yard fence that encompasses the rear of the building and the side furthest from the intersection shall not enclose the area between the street and any corner the principal building facing the street using the corner of the principal building near the intersection as a parallel guide.
2. The exterior or finished side, of a fence must face outward to the property line.
3. All fences shall be maintained and in good repair. Violations require the removal of the fence.

6.3.3. The use of barbed wire, spikes, nails, or any other sharp point or instrument of any kind on top or on the sides of any fence is prohibited. Barbed wire cradles may be placed on top of fences enclosing public utility buildings or wherever deemed necessary in the interests of public safety.

6.3.4. No fence shall be constructed or maintained which is charged or connected with an electrical current.

6.3.5. Retaining walls shall be designed and constructed in accordance with applicable building code requirements.

6.3.6. Temporary construction fences and fences required for protection around excavations shall comply with the Basic Building Code. Such fences shall not remain in place for a period greater than a year or after an occupancy permit is granted.

6.3.7 REPEALED 01-09-12

6.3.8. Clear Vision Requirements.

1. No fence, wall, screen, hedge, sign, or other structure or planting shall obstruct visibility between the heights of thirty (30) inches and ten (10) feet above the sidewalk grade within the triangular area formed by the intersection of the street right-of-way lines and a line connecting two (2) points which are located on those intersecting right-of-way lines thirty (30) feet from the point of intersection. If the road is an access drive, these dimensions shall be measured from the pavement edge.
2. On any interior lot in a block, no fence, wall, screen, hedge, sign, or other structure or planting shall obstruct the visibility of a driveway, either on a parcel or on an adjacent parcel, between the height of thirty (30) inches and ten (10) feet measured a distance of twenty (20) feet back from the point where the driveway intersects the street's edge.

6.3.9 Walls or fences shall be located on the lot line except where underground utilities interfere and except in instances where this Zoning Ordinance requires conformity with front yard setback requirements. Alternative locations may be approved by the Planning Commission if deemed necessary due to existing conditions or other site constraints. The City Zoning Administrator shall approve the construction materials of the wall or fence which may include face brick, poured-in-place simulated face brick, pre-cast brick face panels having simulated face brick, stone, wood, or decorative vinyl fencing.

**Section 6.4 Airborne Emissions.**

6.4.1. Smoke and Air Contaminants. It shall be unlawful for any person, firm, or corporation to permit the emission of any smoke or air contaminant in violation of air quality standards adopted by Federal and/or state regulatory authorities.

6.4.2. Odors. Any condition or operation which results in the creation of odors of such intensity and character as to be detrimental to the health and welfare of the public or which interferes unreasonably with the comfort of the public shall be removed, stopped, or so modified as to remove the odor. The provisions of this Section are not intended to apply to farming activities.

6.4.3. Gases. The escape or emission of any gas which is injurious or destructive, harmful to person or property, or explosive shall be unlawful and shall be abated.

**Section 6.5 Noise and Vibration.**

6.5.1. Noise which is objectionable as determined by the City due to volume, frequency, or beat shall be muffled, attenuated, or otherwise controlled, subject to the noise control provisions in Chapter 14 Environment of the City Code of Ordinances.

6.5.2. In addition, objectionable sounds of an intermittent nature, or sounds characterized by high frequencies, even if falling below the decibel readings in Chapter 14, shall be so controlled so as not to become a nuisance to adjacent uses. Sirens and related apparatus used solely for public purposes are exempt from this requirement. Noise resulting from temporary construction activity shall also be exempt from this requirement.

6.5.3. No use shall generate any ground transmitted vibration in excess of the limits set forth below. Vibration shall be measured at the nearest adjacent lot line. The vibration maximums set forth below are stated in terms of particle velocity, which may be measured directly with suitable instrumentation or computed on the basis of displacement and frequency. When computed, the following standards shall apply:

**Particle Velocity, Inches-Per Second**

<b><u>Frequency in Cycles per Second</u></b>	<b><u>Displacement in Inches</u></b>
0 to 10	0.0010
10 to 20	0.0008
20 to 30	0.0005
30 to 40	0.0004
40 and over	0.0003

6.5.4. Vibrations resulting from temporary construction activity shall be exempt from the requirements of this section.

**Section 6.6 Use, Storage and Handling of Hazardous Substance; Storage and Disposal of Solid, Liquid, and Sanitary Wastes.**

6.6.1. It shall be unlawful for any person, firm, corporation or other legal entity to pollute, impair or destroy the air, water, soils or other natural resources within the City through the use, storage and handling of hazardous substances and/or wastes or the storage and disposal of solid, liquid, gaseous and/or sanitary wastes.

6.6.2. Any person, firm, corporation or other legal entity operating a business or conducting an activity which uses, stores or generates hazardous substances shall obtain the necessary permits or approval from the appropriate Federal, State or local authority having jurisdiction.

6.6.3. Any person, firm, corporation or other legal entity operating a business or conducting an activity which uses, stores or generates hazardous substances shall complete and file a Hazardous Chemicals Survey on a form supplied by the City in conjunction with the following:

1. Upon submission of a site plan.

2. Upon any change of use or occupancy of a structure or premise.
3. Upon any change of the manner in which such substances are handled, and/or in the event of a change in the type of substances to be handled.

6.6.4. All business and facilities which use, store, or generate hazardous substances in quantities greater than 100 kilograms per month (equal to or greater than 25 gallons or 220 pounds) shall comply with the following standards:

1. Above-Ground Storage and Use Areas for Hazardous Substances.
  - a. Secondary containment of hazardous substances and polluting materials shall be provided. Secondary containment shall be sufficiently impervious to contain the substance for the maximum anticipated period of time necessary for the recovery of any released substance.
  - b. Outdoor storage of hazardous substances and polluting materials shall be prohibited except in product-tight containers which are protected from weather, leakage, accidental damage and vandalism.
  - c. Secondary containment structures such as out buildings, storage rooms, sheds and pole barns shall not have floor drains.
  - d. Areas and facilities for loading/unloading of hazardous substances and polluting materials, as well as areas where such materials are handled and used shall be designed and constructed to prevent discharge or runoff.
2. Underground Storage Tanks - Existing and new underground storage tanks shall be registered, installed, operated, maintained, and removed in accordance with requirements of the appropriate Federal, State or local authority having jurisdiction.
3. Loading and Unloading Areas.

Areas used for the loading and unloading of hazardous substances shall be designed and constructed to prevent the harmful release to the environment of hazardous materials which may be spilled or leaked.

6.6.5. All site plans for business or facilities which use, store or generate hazardous substances shall be reviewed by the Fire Department, City Engineer and any other appropriate experts determined necessary by the Planning Commission prior to approval by the Planning Commission.

## **Section 6.7 Electrical Disturbance, Electromagnetic, or Radio Frequency Interference.**

No use shall create any electrical disturbance that adversely affects any operations or equipment other than those of the creator of such disturbance, or cause, create, or contribute to the interference with electronic signals (including television and radio broadcasting transmission) to the

extent that the operation of any equipment not owned by the creator of such disturbance is adversely affected.

## **Section 6.8                    Glare and Exterior Lighting.**

### 6.8.1.        Light and Glare from Indirect Sources.

1.        Glare from any process (such as or similar to arc welding or acetylene torch cutting) which emits harmful ultraviolet rays shall be performed in such a manner as not to be seen from any point beyond the property line, and as not to create a public nuisance or hazard along lot lines.
2.        The design and/or screening of the development shall insure that glare from automobile and commercial or industrial vehicle headlights shall not be directed into any adjacent property, particularly residential property.
3.        Exterior doors shall be located, operated, and maintained so as to prevent any glare and light from creating a nuisance or safety hazard to operators of motor vehicles, pedestrians, and neighboring land uses.

### 6.8.2.        Exterior Lighting from Direct Sources.

1.        Subject to the provisions set forth herein, all parking areas, walkways, driveways, building entryways, off-street parking and loading areas, and building complexes with common areas shall be sufficiently illuminated to ensure the security of property and the safety of persons using such public or common areas.
2.        Exterior lighting shall be located and maintained to prevent the reflection and glare of light in a manner which created a nuisance or safety hazard to operators of motor vehicles, pedestrians and neighboring land uses. This provision is not intended to apply to public street lighting.
3.        The following additional standards shall apply:
  - a.        Only white, non-glare lighting such as metal halide, color-corrected high pressure sodium, or other types of lighting which achieve the same effect shall be permitted. Lighting shall be placed and shielded so as to direct the light onto the site and away from adjoining properties. Lighting shall be shielded so that it does not cause glare for motorists.
  - b.        The light intensity provided at ground level shall be a minimum of 0.3 foot of candle power anywhere in the area to be illuminated. Light intensity shall average a minimum of 0.5 foot of candle over the entire area, measured five (5) feet above the surface.
  - c.        Except as noted below, lighting fixtures shall not exceed a total height of twenty-five (25) feet. In portions of a site located within one hundred (100)

feet of a residential area, lighting fixtures shall not exceed a total height of twenty (20) feet.

- d. All lighting, including ornamental lighting, shall be shown on site plans in sufficient detail to allow determination of the effects of such lighting upon adjacent properties, and traffic safety. Building or roof mounted lighting intended to attract attention to the building and/or use and not strictly designed for security purpose is not permitted. Temporary holiday lighting and decoration are exempt from the aforementioned provision.

#### **Section 6.9 Fire Hazard.**

Any activity involving the use or storage of flammable or explosive materials shall be protected by adequate fire-fighting and fire suppression equipment and such safety devices as are normally used in the handling of any such material. Such hazards shall be kept removed from adjacent activities to a distance which is compatible with the potential danger involved.

#### **Section 6.10 Safety.**

Existing hazards or potential hazards and nuisances, such as construction sites, junk yards, land fills, sanitary land fills, demolition sites, unused basements, abandoned wells or cisterns and sand, gravel, and stone pits or piles are to be enclosed by suitable fencing or barriers so as not to endanger public health, safety and welfare.

#### **Section 6.11 Storm Water Management.**

6.11.1. Storm Water Management. All developments and earth changes subject to review under the requirements of this Ordinance shall be designed, constructed, and maintained to prevent flooding and protect water quality. The particular facilities and measures required on-site shall reflect the natural features, wetlands, and watercourses on the site; the potential for on-site and off-site flooding, water pollution, and erosion; and the size of the site.

Storm water Management shall comply with the following standards:

1. The design of storm sewers, detention facilities, and other storm water management facilities shall comply with the standards for green site technology.
2. Storm water management conveyance, storage and infiltration measures and facilities shall be designed to prevent flood hazards and water pollution related to storm water runoff and soil erosion from the proposed development.
3. The use of swales and vegetated buffer strips is encouraged in cases where the Planning Commission deems to be safe and otherwise appropriate as a method of storm water conveyance so as to decrease runoff velocity, allow for natural infiltration, allow suspended sediment particles to settle, and to remove pollutants.

4. Alterations to natural drainage patterns shall not create flooding or water pollution for adjacent or downstream property owners.
5. Discharge of runoff from any site which may contain oil, grease, toxic chemicals, or other polluting materials is prohibited. If a property owner desires to propose measures to reduce and trap pollutants, the owner must meet the requirements of the Michigan Department of Environmental Quality. Based upon professionally accepted principles, such a proposal shall be submitted and reviewed by the City Engineer, with consultation of appropriate experts.
6. Drainage systems shall be designed to protect public health and safety and to be visually attractive, taking into consideration viable alternatives.

6.11.2. On-Site Storm Water Detention. For the purpose of controlling drainage to off-site properties and drainage ways, all properties which are developed under this zoning ordinance, whether new or improved shall provide for on-site detention storage of storm water in accordance with the current Michigan Department of Environmental Quality standards.

## **Section 6.12 Regulation of Floodplain Areas.**

### 6.12.1. Purpose.

1. The floodplains of the City are subject to periodic inundation of floodwaters which result in loss of property, health, and safety hazards, disruption of commerce and governmental service, and impairment of tax base.
2. It is the purpose of this section to comply with the provisions and requirements of the National Flood Insurance Program, as constituted in accordance with the National Flood Insurance Act of 1968, and subsequent enactments and rules and regulations promulgated in furtherance of this program by the Federal Emergency Management Agency (FEMA), as published in the Federal Register, Vol. 41, No. 207, October 26, 1976, and re-designated at 44FR 31177, May 31, 1979.
3. The provisions of this section are intended to:
  - a. help protect human life, prevent or minimize material losses, and reduce the cost to the public for rescue and relief efforts;
  - b. restrict or prohibit uses which are dangerous to health, safety, or property in times of flooding or cause excessive increases in flood heights or velocities;
  - c. require that uses vulnerable to floods, including public facilities which serve such uses, shall be protected against flood damage at the time of initial construction;
  - d. protect individuals from buying lands which are designated to be unsuited for intended purposes because of flooding;
  - e. permit reasonable economic use of property located within a designated floodplain area.

6.12.2. Delineation of Floodplain Areas.

1. Designated floodplain areas shall overlay existing zoning districts delineated on the Zoning District Map of the City. The boundaries of the floodplain areas are identified in the report entitled, the Flood Insurance Study, City of Grayling, prepared by FEMA with an effective date of June 15, 1982, as may be revised from time to time. The study and accompanying maps are adopted by reference, appended, and declared to be part of this Ordinance.
2. The standard applied to establishing the floodplain area is the base floodplain delineated by the base flood. In areas associated with ravine flooding, a floodway is designated within the floodplain area.
3. Where there are disputes as to the location of a floodplain area boundary, the Zoning Board of Appeals shall resolve the dispute in accordance with Article 12.0.

6.12.3. Application of Regulations.

1. In addition to other requirements of this Ordinance applicable to development in the underlying zoning district, compliance with the requirements of this section shall be necessary for all development occurring within designated floodplain areas. Conflicts between the requirements of this section and other requirements of this Ordinance or any other Ordinance shall be resolved in favor of this section, except where the conflicting requirement is more stringent and would further the objectives of this section. In such cases, the more stringent requirement shall be applied.
2. Upon application for land use permits, the Zoning Administrator shall determine whether said use is located within a designated floodplain area utilizing the documents cited in Section 6.12.2. The issuance of a land use permit within the floodplain area shall comply with the following standards:
  - a. The requirements of this section shall be met;
  - b. The requirement of the underlying districts and all other applicable provisions of this Ordinance shall be met; and
  - c. All necessary development permits shall have been issued by appropriate Local, State, and Federal authorities, including a floodplain permit, approval, or letter of authority from the Michigan Department of Natural Resources under authority of Act 245, Public Acts of 1929, as amended by Act 167, Public Acts of 1968. Where a development permit cannot be issued prior to the issuance of a zoning compliance permit, a letter from the issuing agency indicating intent to issue contingent only upon proof of zoning compliance shall be acceptable.
3. Floodplain Management Administrative Duties.



- a. With regard to the National Flood Insurance Program, and the regulation of development within the flood hazard area zone as prescribed in Section 6.12.4, the duties of the Zoning Administrator shall include, but are not limited to;
  - 1) Notification to adjacent communities and the Department of Natural Resources of the proposed alteration or relocation of any watercourse, and the submission of such notifications to the Federal Insurance Administration;
  - 2) Verification and recording of the actual elevation in relation to mean sea level of the lowest floor, including basement, of all new or substantially improved structures constructed within the flood hazard area, and in the case of flood proofed structures, the elevation to which the structure was flood proofed; and
  - 3) Recording of all certificates of flood proofing, and written notification to all applicants to whom variances are granted in flood hazard area zone indicating the terms of the variance. A record of all variance notifications and variance actions shall be maintained together with the justification for each variance.
- b. All records and maps pertaining to the National Flood Insurance Program shall be maintained in the office of the Zoning Administrator and shall be open for public inspection.
- c. It shall be the responsibility of the Zoning Administrator to obtain and utilize the best available flood hazard data for purposes of administering the Ordinance in the absence of data from FEMA.

6.12.4. Floodplain Standard and Requirements.

- 1. The following general standards and requirements shall be applied to all uses proposed to be located within the floodplain area:
  - a. All new construction and substantial improvements within a floodplain, including the placement of prefabricated buildings and mobile homes, shall;
    - 1) Be designed and anchored to prevent flotation, collapse, or lateral movement of the structure;
    - 2) Be constructed with materials and utility equipment resistant to flood damage;
    - 3) Be constructed by methods and practices that minimize flood damage.
  - b. All new and replacement water supply systems shall minimize or eliminate infiltration of flood waters into the systems.

- c. All new and replacement sanitary sewage systems shall minimize or eliminate infiltration of flood waters into the systems and discharges from systems into flood waters.
  - d. All public utilities and facilities shall be designed, constructed, and located to minimize or eliminate flood damage.
  - e. Adequate drainage shall be provided to reduce exposure to flood hazards.
  - f. The City Engineer or his representative shall review development proposals to determine compliance with the standards in this section, and shall transmit his determination to the Zoning Administrator.
  - g. Land shall not be divided in a manner creating parcels or lots which cannot be used in conformance with the requirements of this Article.
  - h. The flood carrying capacity of any altered or relocated watercourse not subject to state and Federal regulations designed to insure flood carrying capacity shall be maintained.
  - i. Available flood hazard data from Federal, state, or other sources, shall be reasonably utilized in meeting the standards of this section. Data furnished by FEMA shall take precedence over data from other sources.
2. The following specific standards shall be applied to all uses proposed to be located within the floodplain area but not within the floodway portion of the floodplain area.
- a. All new construction and substantial improvements of non-residential structures shall have either;
    - 1) The lowest floor, including basement, elevated at least one-tenth (0.1) foot above the base flood level;
    - 2) Be constructed such that below base flood level, together with attendant utility and sanitary facilities, the structure is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. A registered professional engineer or architect shall certify that the standards of this subparagraph are satisfied, and that the flood proofing methods employed are adequate to withstand the flood depths, pressures, velocities, impact and uplift forces and other factors associated with base flood in the location of the structure.
3. Mobile Home Standards: The following general standards and requirements shall be applied to mobile homes located within flood plain areas:
- a. Anchoring must meet HUD specifications, per rule 605.

- b. An evacuation plan indicating alternate vehicular access and escape routes shall be filed with the City and Crawford County Sheriff Department for mobile home parks and mobile home subdivisions.
  - c. Mobile homes within zones A1-30 on the Flood Insurance Rate Map shall be located in accord with the following standards:
    - 1) All mobile homes shall be placed on stands or lots which are elevated on compacted fill or on pilings so that the lowest floor of the mobile home will be at or above the base flood level.
    - 2) Adequate surface drainage away from all structures and access for a mobile home hauler shall be provided.
    - 3) In the instance of elevation on pilings, lots shall be large enough to permit steps, piling foundations shall be placed in stable soil no more than ten (10) feet apart; and reinforcement shall be provided for piers more than six (6) feet above ground level.
    - 4) In mobile home parks and mobile home subdivisions which exist at the time this subsection is adopted, where repair, reconstruction or improvement of streets, utilities, and pads equals or exceeds fifty (50%) percent of the value of the streets, utilities, and pads before the repair, the standards in the subparagraphs above shall be complied with.
4. The following standards shall be applied to all uses proposed to be located within the floodway portion of the floodplain area.
- a. Encroachments, including fill, new construction, substantial improvements, and other development shall be prohibited. Exception to this prohibition shall only be made upon certification by a registered professional engineer or the Department of Natural Resources that the development proposed will not result in any increases in flood levels during a base flood discharge, and compliance with Act 245, Public Acts of 1929, as amended by Act 167, Public Acts of 1968.
  - b. The placement of mobile homes shall be prohibited.
  - c. The uses of land permitted in an underlying zoning district shall not be construed as being permitted within the regulatory floodway, except upon compliance with the provisions of this section.

6.12.5. Warning and Disclaimer of Liability.

- 1. The degree of flood protection required by provisions of this section is considered reasonable for regulatory purposes and is based on engineering and scientific methods of study. Larger floods may occur on rare occasions.

2. These provisions do not imply that areas outside the floodplain or land uses permitted within such districts will be free from flooding or flood damages nor shall the City or any officer or employee thereof be liable for any flood damages that result from reliance on the provisions of this section or any administrative decision lawfully made there under.

### **Section 6.13                    Building Grades.**

6.13.1. Any building requiring yard space shall be located at such an elevation that a finished grade shall be maintained to cause the flow of surface water to run away from the walls of the building. All grades shall be established and maintained so that surface water run-off damage does not occur to adjoining properties prior to, during, and after construction.

6.13.2. When a new building is constructed on a vacant lot between two (2) existing buildings or adjacent to an existing building, the Building Official shall use the existing established finished grade or the minimum established grade, in determining the proper grade around the new building. The yard around the new building shall be graded in such a manner as to meet existing codes and to preclude normal run-off of surface water to flow onto the adjacent property.

6.13.3. Final grades shall be approved by the Building Official who may require a grading plan which has been duly completed and certified by a registered engineer or land surveyor.

### **6.14                                    Riverfront Lands**

6.14.1 A fifty (50) foot greenway shall exist along all rivers and waterways.

6.14.2 No commercial or industrial buildings or uses shall occur within one-hundred (100) feet of all rivers and waterways without a conditional use permit.

6.14.3 No fences shall be placed in the fifty (50) feet green way area.

6.14.4 Any building or use within the area between the rivers or waterways and the normal high water mark must adhere to Section 6.12.