

## 7.0 ENVIRONMENTAL PROTECTION

### 7.1 FOREST PROTECTION REGULATIONS

#### A. Findings and Purpose.

1. Chisago City finds that preservation of trees and woodlands within the City is critical to the health, safety and welfare of the citizens; that existing and potential development within the City has the effect of reducing and in some cases eliminating wooded area, which, if preserved and maintained, serve important ecological, recreational and aesthetic benefit to existing and future residents. Therefore, the purposes of these regulations are the following:
  2. To preserve woodlands and trees on individual sites; protect the safety of said residents by preventing wind and water erosion, slope instability and rapid runoff promote the health of said residents by absorption of air pollutants, contaminants and noise; and protect the welfare of residents by increasing rainfall infiltration to the water table, provide a diversified environment for many kinds of animals and plants necessary for wildlife maintenance and important to the aesthetic values and recreational requirements of the area and promote energy conservation by shading buildings in the summer and breaking winds in the winter.
  3. District Boundaries. The Forest Protection regulations apply to all zoning districts within the city.
  4. Restrictions.
    - a. No development permit may be issued for any development unless the development is in compliance with the following standards:
      - (1) Development must be conducted so that the maximum number of trees is preserved by the clustering of structures in existing cleared areas and natural clearings.
      - (2) Grading, contouring and paving may not detrimentally affect the root zone aeration and stability of existing trees and existing trees must be provided with a water area.
      - (3) When trees are lawfully removed, the permittee must restore the density of trees that existed before the development. Comparable nursery stock must be utilized, but not more than ten trees per acre are required.
      - (4) Development may not reduce the existing crown cover greater than 50 percent and may preserve the under-story.
      - (5) Trees used in reforestation or landscaping must be compatible with the local landscape and conditions and not presently under disease epidemic.

- (a) Lawful development is under a continuing obligation to observe these restrictions.
- (b) The removal of trees seriously damaged by storms or other acts of God or diseased trees is not prohibited.

## 7.2 WETLAND PROTECTION REGULATIONS

### A. Definition.

1. Wetland: See Chapter 9 (Definitions).
2. Buffer: an upland area adjacent to a lake, stream or wetland that is natural or restored to primarily native vegetation.
3. Setbacks: The minimum horizontal distance between a structure or sewage treatment system and the edge of a delineated wetland.

### B. General. The following are minimum requirements.

1. All wetland delineations must be completed by a certified wetland delineator.
2. Wetland Delineations for Planned Development Districts (PDD) and Subdivisions must follow the Minnesota Routine Assessment Methodology (MNRAM) and identify the quality of the wetland based on the assessment.
3. Minor subdivisions, Administrative lot splits, building permits, septic system installation and updates, and soil disturbances 100 cubic feet or less would be exempt from this requirement and will utilize the moderate quality buffer and setbacks set forth in this section, unless a MNRAM has been completed and approved or the wetland has already been identified as a high quality wetland by MNRAM standards. An applicant that is exempt from the MNRAM requirements may still complete the MNRAM process and comply with the resulting setbacks.

### C. Wetland Limitations. The following activities are prohibited within a wetland or wetland buffer:

1. Runoff must not be discharged directly into wetlands without presettlement of the runoff.
2. Creating impervious cover, except those that are approved through plan review or by the City.
3. Excavating fill or placing fill or debris, except as approved, in writing, by the City or County Wetland Specialist.
4. Altering vegetation, except for vegetative enhancements, and the removal of invasive exotic species or trees for disease control or revegetation. These exceptions must include a detailed plan submitted and approved by the City.
5. Applying phosphorus-containing fertilizers that is harmful or will injure the waterbody. The exception must be authorized by the City Administrator.

### D. Setbacks and Buffers. Based on the wetland function and value assessment the following will be buffer and setback requirements measured from the delineated wetland edge.

Low Quality	Buffer	15 feet
	Setback	15 feet
Moderate Quality	Buffer	20 feet

	Setback	30 feet
High Quality	Buffer	25 feet
	Setback	50 feet

- E. Protection. Protection of buffer areas described in this rule is to be maintained indefinitely. Buffer strips (natural or created) shall be protected by erosion and sediment control measures during construction. Where buffer strips are not vegetated or have been cultivated or other land disturbance has occurred within 5 years of the application, such areas shall be replanted and maintained. The buffer strip plantings must be identified on the site plan and approved by the city. Buffer strips shall not be mowed without permission from the city.
- F. Sign. A buffer shall be indicated by permanent, free-standing monuments at the buffer's upland edge, with a design and text approved by the City. A marker shall be placed at each lot line, with additional markers at an interval of no more than 150 feet. For subdivisions, it is the City's standard that the monument requirement applies to each lot of record. On public land or right-of-way, the monument requirement may be satisfied by the use of markers flush to the ground, breakaway markers of durable material, or a vegetation maintenance plan approved by City staff.
- G. Mitigation. Wetlands must not be drained or filled, wholly or partially, unless replaced by wetland areas of at least equal public value. Replacement be guided by the following principles in descending order of priority:
- a. Avoiding the direct or indirect impact of the activity that may destroy or diminish the wetland.
  - b. Minimizing the impact by limiting the degree or magnitude of the wetland activity and its implementation.
  - c. Rectifying the impact by repairing, rehabilitating or restoring the affected wetland environment.
  - d. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the activity.
  - e. Compensating for the impact by replacing or providing substitute wetland resources or environments. Compensation including the replacement ratio and quality or replacement must be consistent with the requirements outlined in the rules adopted by the Board of Water and Soil Resources described in the Wetland Conservation Act of 1991.

Any wetland replacement plan must be approved by the city. The amount of replacement wetlands required will be determined by the quality of the wetlands being mitigated.

Wetland Quality	Replacement rate
Low/Moderate Quality	2:1
High Quality	3:1

### 7.3 STORM WATER MANAGEMENT

- A. Statutory Authorization. This ordinance is adopted pursuant to Minnesota Statutes Section 462.351.
- B. Findings. Chisago City hereby finds that uncontrolled and inadequate planned use of wetlands, woodlands, natural habitat areas, areas subject to soil erosion and areas containing restrictive soils adversely affects the public health, safety and general welfare by impacting water quality and contributing to other environmental problems, creating nuisances, impairing other beneficial uses of environmental resources and hindering the ability of the city to provide adequate water, sewage, flood control and other community services. In addition, extraordinary public expenditures may be required for the protection of persons and property in areas which may be affected by unplanned land use.
- C. Purpose. The purpose of this ordinance is to promote, preserve and enhance the natural resources within Chisago City and protect them from adverse effects caused by poorly sited development or incompatible activities by regulating land disturbing or development activities that would have an adverse and potentially irreversible impact on water quality and unique and fragile environmentally sensitive land; by minimizing conflicts and encouraging compatibility between land disturbing and development activities and water quality and environmentally sensitive lands; and by requiring detailed review standards and procedures for land disturbing or development activities proposed for such areas, thereby achieving a balance between urban growth and development.
- D. Applicability. Every applicant applying for subdivision or a development permit to allow land disturbing activities must submit a storm water management plan to the Public Works Director. No building permit, subdivision approval or development permit to allow land disturbing activities may be issued until approval of the storm water management plan or a waiver of the approval requirement has been obtained in strict conformance with the provisions of this ordinance.
- E. Exemptions. The provision of this ordinance do not apply to:
1. Any part of a subdivision if a plat for the subdivision has been approved by the city on or before the effective date of this ordinance.
  2. A lot for which a building permit has been approved on or before the effective date of this ordinance.
  3. Installation of fence, sign, telephone and electric poles and other kinds of posts or poles.
  4. Emergency work to protect life, limb or property.
- F. Storm Water Management Plan Approval Procedures. At a minimum, the storm water management plan must contain the following information:

1. Existing Site Map. A map of existing site conditions showing the site and immediately adjacent areas including:
  - a. The name and address of the applicant, the section, township and range, north point, date and scale of drawing and number of sheet.
  - b. Location of the tract by an insert map at a scale sufficient to clearly identify the location of the property and giving such information as the streets and number of adjoining roads, railroads, utilities, subdivisions, towns and districts or other landmarks.
  - c. Existing topography with a contour interval appropriate to the topography of the land but in no case having a contour interval greater than 2 feet. (Use urban sea level as a base).
  - d. A delineation of all streams, rivers, public waters and wetlands located on and immediately adjacent to the site, including depth of water, a description of all vegetation which may be found in the water, a statement of general water quality and any classification given to the water body or wetlands by the Minnesota Department of Natural Resources, the Minnesota Pollution Control Agency and/or United States Corp of Engineers.
  - e. Delineation of ordinary high water mark of lakes.
  - f. Location and dimensions of existing storm water drainage systems and natural drainage patterns on and immediately adjacent to the site delineating in which direction and at what rate storm water is conveyed from the site, identifying and receiving stream, river, public water or wetland and setting forth those areas of the unaltered site where storm water collects.
  - g. A description of the soils of the site, including a map indicating soil types of areas to be disturbed as well as a soil report containing information on the suitability of the soils for the type of development proposed and for the type of sewage disposal proposed and describing any remedial steps to be taken by the developer to render the soils suitable.
  - h. Vegetative cover and clearly delineating any vegetation proposed for removal.
  - i. 100-year floodplains, flood fringes and floodways.
2. Site Construction Plan. A site construction plan must contain the following information:
  - a. Location and dimension of all proposed land disturbing activities and any phasing of those activities.
  - b. Locations and dimensions of all temporary soils or dirt stockpiles.

- c. Location and dimension of all construction site erosion control measures necessary to meet the requirements of this ordinance.
  - d. Schedule of the starting and completion date of each land disturbing activity including the installation of construction site erosion control measures for each phase.
  - e. Provisions for maintenance of the construction site erosion control measures during construction.
3. Plan of Final Site Conditions. A plan of final site conditions on the same scale as the existing site map showing the site changes including:
- a. Finished grading shown at contours at the same interval as provided on the existing site map indicating the relationship of proposed changes to existing topography and remaining features.
  - b. A landscape plan, drawn to an appropriate scale, including dimensions and distances and the location, type, size and description of all proposed landscape materials that will be added to the site as part of the development.
  - c. A drainage plan of the developed site delineating the direction and rate of storm water from the site and the areas of where storm water will be allowed to collect.
  - d. The size, alignment and intended use of any structures to be erected on the site.
  - e. A delineation and tabulation of all areas which shall be paved or surfaced, including a description of the surfacing material to be used.
  - f. Any other information necessary for the review of the project plan.
- G. Plan Review Procedure.
- H. Process. Storm water management plans meeting the requirements of Section 6 must be submitted by the Public Works director to the Planning Commission for review in accordance with the standards in this section.
- I. Duration. Plan approval will expire one year after date of approval unless construction has commenced in accordance with the plan. However, if prior to the expiration of the approval, the applicant makes a written request to the Public Works Director for an extension of time to commence construction setting forth the reasons for the requested extension, the planning department may grant one extension of not greater than one year. Receipt of any request for extension shall be acknowledged by the Department of Public Works within 15 days. The Department of Public Works shall make a decision on the extension within 30 days of receipt. Any plan may be revised in the same manner as originally approved.

- J. Conditions. A storm water management plan may be approved subject to compliance with conditions reasonable and necessary to insure that the requirements of this ordinance are met. Conditions may limit the size, kind or character of the proposed development, require the construction of structures, drainage facilities, storage basins and other facilities, require replacement of vegetation, establish required monitoring procedures, stage the work over time, require alteration of the site design to insure buffering and require the conveyance to the city or other public entity of necessary lands or easements.
- K. Performance Bond. A letter of credit or other form of security shall be requested to cover the amount of the established cost of complying with the conditions as calculated by the City Engineer. The bond must guarantee completion and compliance with conditions within a specific time and may be extended in accordance with this section.
- L. Fees. All applications for a storm water management plan approval must be accompanied by a processing and approval fee as determined by resolution of the City Council an escrow account may be required by the Zoning Administration to pay for actual engineering costs incurred by the City Engineer.
- M. Approval Standards.
1. No storm water management plan that fails to meet the standards in this section may be approved.
  2. Site Dewatering. Water pumped from the site including temporary sedimentation basins, grit chambers, sand filters, up-flow chambers, hydrocyclones, swirl concentrators or other appropriate controls as appropriate. Water may not be discharged in a manner that causes erosion or flooding of the site or receiving channels of a wetland.
  3. Waste and Material Disposal. All waste and unused building materials (including garbage, debris, cleaning wastes, wastewater, toxic materials or hazardous materials) shall be properly disposed of, as regulated by city, state and federal regulations, off-site and not allowed to be carried by runoff into a receiving channel or storm sewer system.
  4. Tracking. Graveled roads, access drives and parking areas must be of sufficient width and length to prevent sediment from being traced onto public or private roadways. Any sediment reaching a public or private road shall be removed by Street cleaning (not flushing) before the end of each workday, unless approved by the city. Street cleaning must be completed by the applicant or approved designee.
  5. Drain Inlet Protection. All storm drain inlets must be protected during construction until control measures are in place with a straw bale, silt fence or equivalent barrier meeting accepted design criteria, standards and specifications contained in the MPCA publication "Protecting Water Quality in Urban Areas".
  6. Site Erosion Control. The following criteria ("a" through "d") apply only to



construction activities that result in runoff leaving the site.

- a. Channelized runoff from adjacent areas passing through the site must be diverted around disturbed areas, if practical. Otherwise, the channel must be protected as follows:

Sheetflow runoff from adjacent areas greater than 10,000 square feet in area shall be diverted around disturbed areas, unless shown to have resultant runoff of less than 0.5 ft.<sup>3</sup>/sec. across the disturbed area for a one-year storm event. Diverted runoff must be conveyed in a manner that will not erode the conveyance and receiving channels.

- b. All activities on the site must be conducted in a logical sequence to minimize the area of bare soil at any one time.
- c. Runoff from the entire disturbed area on the site must be controlled by meeting either 1 and 2 or 1 and 3 of this section.
  - (1) All disturbed ground left inactive for fourteen or more days must be stabilized by seeding or sodding or by mulching or covering or other equivalent control measures.
  - (2) For sites with more than ten acres disturbed at one time, or if a channel originates in the disturbed area, one or more temporary or permanent sedimentation basins must be constructed. Each sedimentation basin must have a surface area of at least one percent of the area draining to the basin and at least three feet of depth and constructed in accordance with accepted design specifications. Sediment must be removed to maintain a depth of three feet. The basin discharge rate must also be sufficiently low as to not cause erosion along the discharge channel or the receiving water.
  - (3) For sites with less than ten acres disturbed at one time, silt fences, straw bales or equivalent control measures must be placed along all side-slope and down-slope sides of the site. If a channel or area of concentrated runoff passes through the site, silt fences must be placed along the channel edges to reduce sediment reaching the channel. The use of silt fences, straw bales or equivalent control measures must include a maintenance and inspection schedule.
- d. Any soil or dirt storage piles containing more than ten cubic yards of material should not be located with a down-slope drainage length of less than 25 feet from the toe of the storage pile to a roadway or drainage channel. If remaining for more than seven days, it must be stabilized by mulching, vegetative cover, tarps or other means. Erosion form piles that will be in existence for less than seven days must be controlled by placing straw bales or silt barriers around the storage pile. In-street utility repair or construction soil or dirt storage piles located closer than 25 feet of a roadway or drainage channel must be covered with tarps or suitable alternative control, if exposed for more than seven days

the storm drain inlets must be protected with straw bales or other appropriate filtering barriers.

N. Storm Water Management Criteria for Permanent Facilities.

1. An applicant must install or construct, on or for the proposed land disturbing or development activity, all storm water management facilities necessary to manage increased runoff so that the two-year, ten-year and 100-year storm peak discharge rates existing before the proposed development are not increased and accelerated channel erosion will not occur as a result of the proposed land disturbing or development activity. An applicant may also make an in kind or monetary contribution to the development and maintenance of the community storm water management facilities designed to serve multiple land disturbing and development activities undertaken by one or more persons, including the applicant.
2. The applicant must give consideration to reducing the need for storm water management facilities by incorporating the use of natural topography and land cover such as wetlands, ponds, natural swamps and depressions as they exist before development to the degree that they can accommodate the additional flow of water without compromising the integrity or quality of the wetland or pond.
3. The following storm water management practices must be investigated in developing a storm water management plan in the following descending order of preference:
  - a. Infiltrations of run-off on-site, if suitable soil conditions are available for use.
  - b. Flow attenuation by use of open vegetated swamps and natural depressions.
  - c. Storm water retention facilities.
4. A combination of successive practices may be used to achieve the applicable minimum control requirements specified in Section 7.02.N.1. Justification shall be provided by the applicant for the method selected.

O. Design Standards. Storm water detention facilities constructed in the city must be designed according to the National urban Runoff Program (NURP), wet basin design criteria and the urban best management practices as reflected in the MPC publication, "Protecting Water Quality in Urban Areas", and must contain, at a minimum, the following design factors.

1. A permanent pond surface area equal to two percent of the impervious area draining to the pond or one percent of the entire area draining to the pond, whichever amount is greater.
2. An average permanent pool depth of four to ten feet. (COMMENTARY: An alternative to subsections 1 and 2 that the volume of permanent pool be equal to or greater than the runoff from a 1.0 inch rainfall, per event (first flush) for the fully

developed site.)

3. A permanent pool length-to-width ratio of 3:1 or greater.
  4. A minimum protective shelf extending ten feet into the permanent pool with a slope of 10:1 beyond which slopes should not exceed 3:1.
  5. A protective buffer strip of vegetation surrounding the permanent pool at a minimum width of one rod (16.5 feet).
  6. All storm water detention facilities must have a device to keep oil, grease and other floatable material from moving downstream as a result of normal operations.
  7. Storm water detention facilities for the new development must be sufficient to limit peak flows in each subwatershed to those that existed before the development for the 10-year storm event. Also, calculations and hydrologic models used in determining peak flows must be submitted along with the storm water management plan.
  8. All storm water detention facilities must have a forebay to remove coarse-grained particles prior to discharge into a watercourse or storage basin.
- P. Wetlands. As indicated in section 7.2
- Q. Steep Slopes. No land disturbing or development activities are allowed on slopes of 18 percent or more.
- R. Catch Basins. All newly installed and rehabilitated catch basins must be provided with a sump area for the collection of coarse-grained material. The basins must be cleaned when they are half filled with material.
- S. Drain Leaders. All newly constructed and reconstructed buildings must route drain leaders to storm sewer facilities or pervious areas wherein the runoff can be allowed to infiltrate. The flow ration of water from the leaders must be controlled so no erosion occurs in the pervious areas.
- T. Inspections and Maintenance. All storm water management facilities must be designed to minimize the need of maintenance, to provide access for maintenance purposes and to be structurally sound. All storm water management facilities must have a plan of operation and maintenance that assures continued effective removal of pollutants carried in storm water runoff. The director of public works, or designated representative, must inspect all storm water management facilities during construction, during the first year of operation and at least once every five years thereafter. The inspection records will be kept on file at the public works department for a period of six years. It is the responsibility of the applicant to obtain any easements or property interests to allow needed access to the storm water management facilities for inspection and maintenance purposes.

- U. Models/Methodologies/Computations. Hydrologic models and design methodologies used for the determination of runoff and analysis of storm water management structures must be approved by the director of public works. Plans, specifications and computations for storm water management facilities submitted for review must be sealed and signed by a registered professional engineer. All computations must appear on the plans submitted for review, unless otherwise approved the director of Public Works.
  
- V. Watershed Management Plans/Groundwater Management Plans. Storm water management plans must be consistent with adopted watershed management plans and groundwater management plans prepared in accordance with Minnesota Statutes Section 103B.23 1 and 103B.255 respectively and as approved by the Minnesota Board of Water and Soil Resources.
  
- W. Easements. It is the responsibility of the applicant to obtain from adjacent property owners any necessary easements or other property interests concerning flowage of water.
  
- X. Other Controls. In the event of any conflict between the provisions of this ordinance and other provisions of the Zoning Ordinance, the more restrictive standard prevails.

## 7.4 LAND ALTERATION AND GRADING

- A. Permit Required. No person, firm or corporation may undertake, authorize or permit any of the following actions without first having obtained a grading permit from the city.
1. Any excavating, grading, filling or other change in the earth's topography resulting in the movement of more than 50 cubic yards per acre of material, except in any designated Wetlands, Floodplain or Shoreland District.
  2. Any excavating, grading or filling or change in the earth's topography in any designated Wetlands, Floodplain or Shoreland District.
  3. Any changing of a natural drainage way or drainage pattern that results in any change in the flow of surface water upon adjacent property.
- B. Exception. Notwithstanding the above, no grading permit is required for the following activities, except as required by Minnesota State Building Code.
1. Earthwork undertaken in accordance with grading plans approved in conjunction with a site and building plan review or plat approval, or
  2. Earthwork that will result in moving less than 50 cubic yards of material provided the work does not take place in any designated Wetlands, Floodplain or Shoreland District and does not affect local drainage patterns.
  3. Agriculture Uses as defined in Section 9.1 of this Title, unless the work is to change or heighten the topography of the land being used for agriculture.
- C. Administrative Review of Grading Permits. A permit is required from the City Administrator or City Engineer or designee for any of the following:
1. Placement of or grading of more than ten cubic yards of material on steep slopes adjacent to lakes and wetlands or with the shore or bluff impact zones.
  2. Placement of or grading of more than 50 cubic yards, of material per acre.
  3. Where filling or grading occurs within ten feet of a property line or when such activity alters the drainage patterns of adjacent properties.
- D. City Council Review. All grading permits that would result in changing the use of the property must be reviewed by the Planning Commission and approved by the City Council. If possible, grading permit review will be combined with other planning permit reviews.

E. Application for a Grading Permit.

1. Applications for a grading permit for Administrative review shall include a permit as provided by the city and accompanied with the following:
  - a. Existing land elevations
  - b. Proposed site elevations and drainage patterns.
  - c. Erosion control
  - d. Security bond to insure compliance with the approved permit and adequate site restoration.
  - e. As deemed necessary by the City Administrator or City Engineer

Upon receipt of a completed application, the City Engineer must review the application within ten (10) working days and must notify the applicant of the decision in writing. The City Engineer may impose such modifications and conditions as may be necessary to protect the public interest. Bonding may be required in an amount sufficient to complete site restoration should the applicant default.

2. Applications for a grading permit that requires review by the Planning Commission and approved by the City Council must be made to the City Engineer on forms provided by the city and must be accompanied by the following information:
  - a. Evidence of ownership or written permission by land owner.
  - b. Existing and proposed final grades with two foot contour intervals.
  - c. A survey showing the location and elevation of all roads, utilities and structures that may be impacted by the proposal.
  - d. If trees are impacted, a tree survey showing all significant trees having a caliper of six (6) inches or greater at breast height and a tree preservation plan.
  - e. A landscaping and/or site restoration plan.
  - f. A drainage plan with an engineering design for necessary storm water retention work.
  - g. An erosion control plan indicating the type and location of erosion measures.
  - h. A traffic analysis showing how the materials will be removed from or delivered to the site.
  - i. Two copies of all available soil borings and with boring location maps and any other available soil information.
  - j. Any other information that may be required by the City Administrator or City Engineer or designee.
  - k. A completion schedule of building construction phasing.

F. Grading Permit Standards.

1. No grading permit may be issued for site grading without approved plans for site development and adequate provision for site protection from wind or water erosion.
2. Grading permits may be issued when in compliance with the following standards:
  - a. The plans must maximize the preservation of trees on the property and utilize the trees to the maximum extent possible to screen the grading from adjacent property.
  - b. The plan must utilize landscaping to restore site aesthetics, minimize the visual impact of the work, screen the grading from adjacent property and enhance the property's development potential. All areas altered because of grading activity must at a minimum, be restored with seed and diced mulch or sod within two weeks after the completion of the activity. The city may approve an extension of this deadline of appropriate, but in no case may site restoration be delayed beyond October 1.
  - c. The plan must not result in sites that are unsatisfactory for development of permitted uses. The development potential of a site may be adversely impacted by unsuitable finish grades, poor soil stability, unsatisfactory drainage or exposure to deleterious influences.
  - d. The plan must provide for the removal of any significant amounts of organic material or construction debris.
  - e. In instances where an existing buffer will be impacted by grading or filling operations, site restoration must be completed in a manner that resembles the original vegetative and topography state of the property.
  - f. The plan must protect designated wetlands, floodplains, shoreland, public waters and other natural features:
  - g. The plan must provide for adequate drainage, storm water retention and erosion control measures.
  - h. The plan must provide for traffic movements to and from the site without having significant adverse effects on roads, intersections or development in the area. Streets surrounding the site must be swept to remove any debris that may accumulate due to these activities.
  - i. The plan must include a schedule of activities, which limits the duration of disruptions and impacts.
  - j. The plan must also be approved, where required, by appropriate watershed districts, the United States Army Corps of Engineers, the Minnesota Department

of Natural Resources and any other government agency that has jurisdiction.

- k. The plan shall be accompanied by a letter of credit or other satisfactory security to insure compliance with the approved permit and adequate site restoration. The amount of the bond will be based upon the size of the site, sensitivity of its surroundings, extent of grading, amount of material moved, necessary site restoration and potential impacts upon public facilities, including damage to public roadways and property.
- l. The plan must comply with the Minnesota State Building Code and all other applicable statutes or ordinances.

(Adopted: January 2000. Amended: March 2001, April 2008, January 2012)



## 7.5 MINERAL EXTRACTION AND MANUFACTURING

- A. **Purpose.** The purpose of this Ordinance is to protect the public health, safety and welfare through the following:
1. Existing Activities. Identify areas in the community where existing mineral extraction has been conducted.
  2. Appropriateness. Identify areas in the community where mineral extraction is most appropriate and minimizes conflicts with other land uses.
  3. Standards. Establish standards for existing and new mineral extraction which prevent or minimize environmental and aesthetic impacts on extracted properties, adjacent properties and the community as a whole.
  4. Restoration. Establish standards and financial guarantees that restore land used for existing and new mineral extraction to a condition compatible with adjacent properties and suitable for future uses which are compatible with the Chisago City Comprehensive Plan.
- B. **Definitions.** For the purposes of this section, the following terms shall have the meaning associated with them:
1. Asphalt Plant: Machinery used for blending and making aggregate materials with oil based materials to create hot or cold asphalt products.
  2. Berm: A mound of earth designed to provide screening of areas and to reduce noise.
  3. Bond: Any form of security including a cash deposit, surety bond, collateral, or instrument of credit in an amount and form satisfactory to the City of Chisago City. All bonds shall be approved by the City of Chisago City wherever a bond is required by these regulations.
  4. Concrete Ready-Mix Plant: Machinery used to mix materials (usually cement, sand, or aggregate) and water to create concrete for resale.
  5. Conditional use Permit: See Section 3.1.
  6. Dust: Airborne mineral particulate matter.
  7. Engine Retard Breaking: Dynamic Brake, Jake Brake, Jacobs Brake, C Brake, Paccar Brake, transmission brake or other similar engine retarding brake system which alters the normal compression of the engine and subsequently releases that compression.
  8. Excavation: The movement or removal of soil and minerals.

9. Holiday: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.
10. Interim Use Permit: A permit for temporary use of a property until a particular date, until the occurrence of a particular event, or until zoning regulations no longer permit it.
11. Manufacturing: Any activity that includes Portable or Permanent or Temporary Asphalt Plants, Concrete Ready Mix Plants, Processing and Recycling Plants.
12. Mineral: Sand, gravel, rock, clay and similar higher density non-metallic natural minerals.
13. Mineral Extraction: The removal of sand, gravel, rock clay and other minerals from the ground.
14. Mineral Extraction Facility: Any area that is being used for removal, stockpiling and storage, of sand, gravel, topsoil, clay, and other minerals.
15. Operator: Any person or persons, partnership, corporations or other entities or combination or assignees thereof, including public or governmental agencies, engaging in mineral extraction and any processing, recycling, and manufacturing activities derivatives.
16. Owner: Any person or persons, partnership, corporation or other entities owning fee title to the Subject Property.
17. Permanent Asphalt Plant or Permanent Ready Mix Concrete Plant: Permanent Plants that are constructed on footings or concrete foundations and are not portable from one site to another.
18. Plant Operating Days: Days in which a Portable Asphalt Plant or Concrete Ready Mix Plant is on and operating.
19. Portable Asphalt Plant or Portable Concrete Ready Mix Plant: Portable Plants which can be assembled and disassembled on-site which are not constructed on footings or concrete foundations.
20. Processing Plant: , Machinery used to crush, wash, compounding, mixing, or treat dirt, sand, gravel, rocks, or similar mineral products into consumable products such as construction grade sand, gravel, and other similar products. This does not include Asphalt Plants and Concrete Ready Mix Plants.
21. Recycling Plant: Machinery used to crush, wash compounding, mixing, or treat used aggregate, concrete, asphalt and other similar products into other consumable products. This does not include Asphalt Plants or Concrete Ready Mix Plants.

22. Rehabilitation: To renew land to self-sustaining long-term use which is compatible with contiguous land uses, present and future, in accordance with the standards set forth in this Ordinance.
23. Soil: A natural three dimensional body of the earth's surface.
24. Stockpiling: Move or handle a reserve supply of goods or raw material accumulated for future use.
25. Subject Property: The real property on which Mineral Extraction Facilities, Processing Plant, Asphalt Plant and/or Ready Mix Plant is sought to be permitted.
26. Topsoil: the upper portion of the Soils present that is the most favorable material for plant growth.

**C. Permit Required.**

1. Mineral Extraction.
  - a. Permit Required. Irrespective of the zoning classification of a Subject property a permit, as provided in this Subsection C is required for Mineral Extraction and/or Manufacturing, unless specifically accepted from such permit.
  - b. An Interim Use Permit (I.U.P.) is required for any new Mineral Extraction Facility, starting after the date of the adoption of this Ordinance, on forty (40) continuous acres or more and shall follow the procedure set forth in Chapter 3.2. and, to the extent more restrictive, this Section 7.5.
  - c. Permanent Mineral Extraction Facilities are not allowed on less than forty (40) contiguous acres.
  - d. Any existing Mineral Extraction Facility that has been in operation before the adoption of this Ordinance and has not been abandoned is required to obtain a Conditional Use Permit (C.U.P) as regulated in Chapter 3.1. and, to the extent more restrictive, this Section 7.5.
2. Manufacturing.
  - a. An Interim Use Permit is required for any Processing Plant, Recycling Plant, or Temporary Processing Plant, Recycling Plant, Asphalt Plant or Concrete Plant, unless specified in this section.
  - b. A Conditional Use Permit may be granted for any existing Processing or Recycling Plant as described in section 7.5. that is part of an existing Mineral Extraction Facility.
3. Processing or Recycling Plant. Processing and Recycling Plant shall only be allowed within and as part of a Mineral Extraction Facility.
  - a. A separate Interim Use Permit shall be required for any new Mineral Extraction Facility that wishes to have a Processing or Recycling Plant.

- b. A Conditional Use Permit (C.U.P) may be considered for any existing Processing or Recycling Plant that is part of an existing Mineral Extraction Facility.
  - c. Without limiting Subsection 7.5(E) below, any Processing or Recycling Plant must meet the following performance standards:
    - (1) The application must include the nature of the processing and equipment, location of the plant, source of water, disposal of water, and reuse of water.
    - (2) Crushing equipment must be placed in the bottom of the pit area if practical or in such a manner as to have the least environmental and aesthetic impact.
    - (3) If products are being recycled the stockpiles of unprocessed recycled materials shall be screened from public view from the nearest public right of way.
4. Portable Asphalt Plants and Ready Mix Plants. Portable Asphalt and Concrete Ready Mix Plants shall only be allowed within a Mineral Extraction Facility pursuant to the permit requirements set forth in Section C above. Permanent Asphalt and Concrete Ready Mix Plants are prohibited.
- a. Without limiting Subsection 7.5(E) below, an Interim Use Permit for Portable Asphalt Plants and Concrete Ready Mix Plants may be allowed if the following conditions are met:
    - (1) Portable Asphalt Plants and Concrete Ready Mix Plants must not operate on the property for more than one-hundred and fifty (150) plant operating days per calendar year. The operator must provide written documentation generated from the equipment, as requested by the City.
    - (2) Portable Asphalt Plants and Concrete Ready Mix Plants must not be on the property for more than 24 consecutive months unless allowed by permit.
    - (3) An Interim Use Permit may be applied to extend an existing Portable Asphalt Plant or Concrete Read Mix Plant, up to an additional 24 months, and must be completed prior to the expiration of the previous permit.
    - (4) Operations will be limited to between 7:00 a.m. and 7:00 p.m. Monday through Friday. Operations are prohibited entirely on legal holidays, including weekday holidays, on weekends and during the period from 7:01 p.m. to 6:59 a.m. on weekdays.
    - (5) All setbacks as set forth in 7.5(E.2) of the Chapter must be met.
    - (6) All Federal, State and City air, water, noise and odor quality standards must be met. An air quality permit must be obtained from the Minnesota Pollution Control Agency.
    - (7) Equipment must be screened and located in such a manner as to have the least environmental and aesthetic impact.
    - (8) If the Portable Asphalt Plant was established on the site on the effective date of this ordinance, it may not expand except through a new Interim Use Permit.
    - (9) Any emission stack shall be at least thirty (30) feet higher than the highest land elevation within one-thousand (1,000) feet of facility.

- D. **Exceptions.** An Interim Use Permit shall not be required for any of the following:
1. Private Excavation for Building. Excavation for a foundation, cellar or basement of a building if a building permit has been issued.
  2. Public Road Excavation. Excavation by state, county, city, or township authorities in connection with construction or maintenance of roads, highways, or utilities, conducted solely within permanent easement areas or rights-of-way.
  3. Hook-Ups. Curb cuts, utility hook-ups or street openings for which another permit has been issued by the City.
  4. De Minimas Excavation. Excavation less than five hundred (500) cubic yards in area or one foot in depth.
  5. Agricultural. Excavation or grading for agricultural purposes.
  6. Other. Other activities in which a permit has been issued, site grading is allowed and mineral extraction is clearly an incidental activity.

- E. **Performance Standards.** The following performance standards apply to all Mineral Extraction and Manufacturing Facilities in the City:

1. Zoning District. Mineral Extraction Facilities are permitted only in the Agricultural (AG), Planned Industrial (PI), Light Industrial (LI) and Office Park Industrial (OPI) Districts as identified on the official Chisago City Zoning Map.  
  
Portable Asphalt Plants and Ready Mix Plants are permitted only in the Planned Industrial (PI), Light Industrial (LI) and Office Park Industrial (OPI) Districts.
2. Minimum Lot Size. Any new Mineral Extraction or Manufacturing Facility must be conducted on Subject Property of forty (40) continuous acres or more owned by the same Owner.
3. Setbacks. No mining, stockpiling or land disturbance with the exception of screening (e.g. berms, planting of trees and other vegetation) and access roads, shall take place within:
  - a. Fifty (50) feet of any property lines road right-of-way or easement which prohibit activity.
  - b. Two-hundred (200) feet of any occupied structures existing at the time of original permitting not owned by the Operator or Owner.
  - c. One hundred (100) feet of any property subdivided into residential lots of five (5) acres or less whether or not owned by the Owner or Operator.
  - d. Screeners, crushers, other processing equipment and manufacturing equipment may not be located closer than seven hundred fifty (750) feet without berming or five hundred (500) feet with berming from any residential dwelling. Grading

plans affecting pipelines or power line corridors will be evaluated on a case by case basis.

4. Setback Exception. An exception of the property line setback requirement may be granted on a case-by-case basis where the Subject Properties containing two Mineral Extraction Facilities share a common lot line or when there is adequate screening. The setbacks for all other equipment and activities shall be based upon performance standards for noise, dust control, visual screening and the like.
5. Hours of Operation.
  - a. Those portions of the Mineral Extraction Facility and Manufacturing consisting of excavating shall be conducted only between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday, unless specifically authorized by the City. All Mineral Extraction and Manufacturing shall not take place on holidays. In cases of public emergencies, hours of operation may be extended by the City Administrator or designee.
  - b. In cases of time constraints on completion of road construction before the end of the construction season caused by adverse weather conditions and in cases of major road or highway construction projects which cause substantial inconvenience to the traveling public, hours of operation can be extended by the City Council. Authorization will be limited to those functions or government contracts that cannot occur during normal hours of operation. Supporting documentation will be required. Notification and review for extended hours shall be made at a regular City Council meeting prior to the day(s) on which extended hours are requested.
  - c. Hour of operation for manufacturing facilities are set forth in subsection 7.5(C)(4)(a)(4).
6. Fencing. Where deemed necessary by the City, a fence may be required prior to the commencement or as a condition to the continuous operation of any Mineral Extraction, Manufacturing, operation enclosing the area authorized by the applicable Interim Use Permit or Conditional Use Permit. . If required, fencing must have a minimum of two (2) single strand wires with posts a maximum of twelve (12) feet apart and at least four (4) feet in height.
7. Screening. Where deemed necessary by the City, Mineral Extraction Facilities and Manufacturing operations shall be screened or located in such a manner as to minimize noise, dust, odors, erosion and visual impacts on surrounding properties. If required, the screening shall be a minimum of six (6) feet in height and shall provide a contiguous screening of the area within which such operations are conducted. If required, screening shall be installed prior to commencement of operations or pursuant to other deadlines established by the City.
8. Access. All access roads will be of a sufficient length from a public road so that any turns onto the public road can be completed with a margin of safety. All access

roads shall be maintained so as to minimize noise and dust from vehicles using such access road.

9. Trucking Operations. All trucks traveling to or from the Mineral Extraction Facility or Manufacturing operation shall utilize a 9-ton or greater blacktop, concrete, or gravel road. Operators may be granted a special permit to utilize roadways temporarily posted under 9-tons, provided adequate surety is guaranteed to cover the costs of repairing any damage to roadways. All truck loads leaving any pit regulated by this Chapter are loaded so as to comply with state law and shall be clean of any loose material from the truck including the tires before leaving the operation. It shall be unlawful for the operator of any truck to intentionally use an engine retard braking on any highway, street, parking lot or alley within the City.
  
10. Dust Control. The Subject Property Owner or Operator must construct, maintain and operate all equipment in such a manner as to minimize on-site and off-site dust conditions. All operations shall meet the standards of the Federal and State regulations.
  
11. Lighting. Lights used for safety and security purposes maybe installed where necessary provided the light source is directed down away from abutting property and public right-of-way.
  
12. Noise. No person may operate or cause or permit to be operated any source of noise in such a manner as to create a noise level exceeding the limit set in Table I for the receiving land use category specified when measured at or within the property line of receiving land use

Table I. Sound Levels by Receiving Land Use Districts.

Land Use Districts	Day (8:00 a.m.--10:00 p.m.)		Night (10:00 p.m.--8:00 a.m.)	
	L10 Standard	L50 Standard	L10 Standard	L50 Standard
Residential	65 dBA	60 dBA	55 dBA	50 dBA
Commercial	70 dBA	65 dBA	70 dBA	65 dBA
Industrial	80 dBA	75 dBA	80 dBA	75 dBA

For noise relative to period less than L-10 Standard, the following conditions apply: No indoor sound level shall be raised more than six dbc over existing background, and no outdoor sound level shall be raised more than ten dbc over existing background noise level. The limits of the most restrictive district shall apply at the boundaries between the different land use categories. The determination of land use shall be by its zoned designation.

13. Vibration. Operators shall use all practical means to eliminate adverse impacts on adjacent properties from vibration of equipment.
14. Air Quality. All activities on the Subject Property will be conducted in a manner consistent with the Minnesota Pollution Control Agency's operating permits.
15. Water Quality Monitoring. Water quality monitoring will be required when Mineral Extraction or Manufacturing Operations disturbs or utilizes the water table or operates a wash plant. Water levels shall be recorded and samples collected from monitoring wells or water collected or discharged from the Mineral Extraction or Manufacturing area. Water samples shall be analyzed until one year after reclamation is completed. Samples shall be taken and testing results submitted prior to commencement of operation. More frequent monitoring and sampling may be required by the City and done by an independent testing laboratory or an agency chosen by the City. Wells shall be sealed one year after reclamation efforts are complete if the Subject Property is determined to be uncontaminated. Water samples shall be analyzed for diesel range organics, the level of petroleum products and hydrocarbons or as requested by the City. All required monitoring shall be completed at the cost of the applicant for the required permit.
16. Storage. No vehicles and equipment of materials not associated with the Mineral Extraction Facility or Manufacturing Operation not in operable condition may be kept or stored in public view on the Subject Property.
17. Explosives. The use of explosives is strictly prohibited.
18. General Compliance. Without limiting the requirements of this Section 7.5, all the Mineral Extraction and Manufacturing Operations shall conform to all federal, state and local laws.
19. Bond. Prior to the commencement of a new Mineral Extraction or Manufacturing Operations, and as a condition to any Interim Use Permit or Conditional Use Permit required hereunder, a Bond or other financial guarantee, in an amount determined by the City, must be posted by the Operator or the Owner (or both) to assure compliance with this Section 7.5 and the restoration of the site Subject Property.
20. Rehabilitation Plan. A Rehabilitation Plan for the Subject Property as outlined in Section 7.5(J) of this chapter shall be required as a condition to the issuance of any Conditional Use Permit or Interim Use Permit.
21. Additional Regulations and Provisions. The City may review Interim Use Permits annually. When deemed necessary, the City Council may impose additional regulations and requirements to the Interim Use Permit to protect the public health and safety. The city may revoke any Conditional Section 3.6 of the City's zoning ordinance.



- F. **Temporary Processing or Recycling Plant in Conjunction with a Specific Project.** A Temporary Processing Plant located within the Property, right-of-way or adjacent to the specific project, will be allowed without an Interim Use Permit subject to the following conditions:
1. Compliance With Regulations. All Federal, State, and City air, water and noise quality standards must be met.
  2. City Authorization. The City Council shall review and authorize a Temporary Processing or Recycling Plant in Conjunction with a Specific Project.
  3. Minimal Effect. The processing equipment must be located so as to minimize its effect on surrounding property owners.
  4. Limited Duration. The Processing Plant may only be on the property for the duration of the project.
  5. Entrance. If an entrance is not available from the Processing Plant to a road, a rock entrance must be constructed and maintained with appropriate dust control as required in this chapter.
  6. Removal of Material. No materials, outside of the designated right-of-way, may be excavated or removed from the site without an Interim Use Permit.
  7. Restoration. The site shall be restored one (1) year after the road project has been complete.
  8. Performance Standard. The performance standards of 7.5(E) above are met to the satisfaction of the City Administrator or designee.
- G. **A Portable Asphalt Plant in Conjunction with a Specific Road Project.** Portable Asphalt Plants located within the project boundary of a specific road project will be allowed without an Interim Use Permit subject to the following conditions:
1. Compliance with Regulations. All applicable Federal, State and City regulations regarding air, water and noise quality standards must be met. An air quality permit must be obtained from the Minnesota Pollution Control Agency.
  2. City Authorization. The City Council shall review and authorize a Temporary Processing or Recycling Plant in Conjunction with a Specific Project.
  3. Minimal Impact. The Portable Asphalt Plant must be located in such a manner so as to have the least environmental and aesthetic impact.
  4. Minimal Effect. Site selection shall be made as to minimize the effect on the public health, safety, and welfare.

5. Limited Duration. The Portable Asphalt Plant shall be on the property for no longer than the duration of the project.
6. Performance Standards. A bond or other financial guarantee, in an amount determined by the City, must be posted to assure restoration of the site.

H. **Application**. Any application for an Interim Use Permit to operate a Mineral Extraction Facility and Manufacturing shall be submitted to the City on a form supplied by the City. Information may include the following or as required by the City:

1. Narrative. A narrative outlining the type of material to be excavated, mode of operation, estimated quantity of materials to be extracted, and other pertinent information to explain the request in detail.
2. Supporting Documentation. Every application shall include submission of supporting documentation which shall include, but not limited to the following:
  - a. A description of the soil, vegetation, mineral content and topography of the subject property. A minimum of three (3) soil boring logs representative of the site and a description of the subsurface materials on the subject property must be submitted.
  - b. A general description of surface waters, existing drainage patterns and groundwater conditions within one-quarter (1/4) mile of the subject property.
  - c. A general description of the depth, quantity, quality and intended uses of the mineral deposits on the subject property.
  - d. An EAW and/or EIS if required by the Environmental Quality Board (EQB).
  - e. Copies of county, state and federal application documents and operating permits.
  - f. A description of the site hydrology and drainage characteristics during extraction. Identify any locations where drainage of any disturbed areas will not be controlled on the subject property and plans to control erosion, sedimentation and water quality of the runoff.
  - g. A description of the plan to mitigate potential impacts resulting from mineral extraction.
  - h. A description of site screening, landscaping and security fencing.
  - i. If applicable, a plan for groundwater quality protection. A minimum of three (3) cross-sections showing the extent of overburden, extent of sand and gravel deposits, the water table, and any evidence of the water table in the past. The Planning Commission reserves the right to require additional borings if necessary.
3. Rehabilitation Plan. A Subject Property Rehabilitation Plan for permits on Mineral Extraction Facilities and Manufacturing operations which shall include the grading plans, topsoil replacement, seeding, mulching, erosion control and sedimentation control specifications for each phase and the final site restoration. The following minimum standards and conditions apply:
  - a. Final grades may not exceed their original grade.

- b. A minimum of four (4) inches of topsoil shall be placed.
  - c. Seeding and mulching shall be consistent with Minnesota Department of Transportation specifications for rights-of-way. Exceptions include areas returned to agricultural production.
  - d. Soil erosion and sedimentation control measures shall be consistent with MPCA's "Protecting Water Quality in Urban Areas."
  - e. Rehabilitation of the Subject Property shall be done within twelve (12) months after expiration or termination of the permit or such other period time agreed to by the City.
4. Maps. The following maps which shall include the entire Subject Property and all property within five hundred (500) feet of the Subject Property. Maps shall include title, name, phone and address of operator and land owner. All maps shall be drawn at a scale of one (1) inch to one-hundred (100) feet unless otherwise stated below or as accepted by the City:
- a. Map A: Aerial Photo. Map A and B maybe combined if contents are legible.
  - b. Map B: Existing Conditions to include:
    - (1) Survey indicating property boundaries.
    - (2) Legal description of the property.
    - (3) Names and current land use of the adjacent landowners including all those within a one-quarter (1/4) mile radius of the boundary line of the subject property.
    - (4) Contour lines at ten (10) foot intervals.
    - (5) Existing vegetation.
    - (6) Existing drainage and permanent water areas.
    - (7) Existing structures.
    - (8) Existing wells and private sewer systems of record.
    - (9) Existing pipelines, power lines and other utilities.
    - (10) Easements and Right-of-ways.
  - c. Map C: Proposed operations to include:
    - (1) Property boundaries.
    - (2) Structures to be erected.
    - (3) Location of sites to be mined showing depth of excavation.
    - (4) Location of tailings deposits showing maximum height deposits.
    - (5) Topographic data at contours at two (2) foot intervals.
    - (6) Location of processing areas and machinery to be used in the mining operation.
    - (7) Location of storage of mined materials, showing height of storage deposits.
    - (8) Location of vehicle parking.
    - (9) Erosion and sediment control structures.
    - (10) Haul routes.
    - (11) Water courses, wetlands, wooded areas, and rock outcrops.
    - (12) Power transmission poles and lines

(13) Other significant features as deemed necessary by the City.

d. Map D: Rehabilitation Plan to include:

- (1) Property boundaries.
- (2) Final grade of proposed site showing elevations and contour lines at two (2) foot intervals.
- (3) Location and species of vegetation to be replanted.
- (4) Location and nature of any structure to be erected in relation to the end use plan.
- (5) Turf Rehabilitation Plan.

I. **Existing Uses.** All existing Mineral Extraction Facilities and Manufacturing Operations for which permits must be obtained under Section 7.5 in order for them to be in compliance with Section 7.5 may continue to operate as long as the operator thereof has filed any application as needed with the City by August 31, 2010.

J. **Effective Date.** This Section 7.5 shall be effective on and after its publication as required by law.