

5.00 MINIMUM DESIGN STANDARDS

5.01 PURPOSE

The purpose of good subdivision and site design is to create a functional and attractive development, to minimize adverse impacts and maintenance costs, and to ensure that a project will be an asset to a community. To promote this purpose, the subdivision or site plan shall conform to the following standards which are designed to result in a well-planned community without adding unnecessarily to development costs. The design standards assure that the layout of the subdivision harmonizes with existing plans affecting the development and its surroundings and are in conformity with the City's development objectives for the entire area. Detailed specifications for both the minimum design standards and the engineering standards may be obtained from the appropriate utility department (engineering, water, or fire departments).

- A. Conformity with the Comprehensive Development Plan, Zoning Ordinance, and Applicable Rules and Regulations:
 - 1. The proposed subdivision must conform to the Comprehensive Plan, Zoning Ordinance, and Standards as adopted by the City Council to regulate development.
- B. Land Requirements:
 - 1. Land must be suited to the purpose for which it is to be subdivided. No plan may be approved if the site is not suitable for having uses of the kind proposed because of potential flooding, topography or adverse rock formation.
 - 2. Land having hazards to life, health or property may not be subdivided for residential purposes until all hazards have been eliminated or unless adequate safeguards against the hazards are provided by the subdivision plan.
 - 3. Erosion and sedimentation control plans must be in accordance with the technical standards and specifications of the Grading Ordinance.
 - 4. Proposed subdivisions must be coordinated with existing nearby local governments and neighborhoods so that the community as a whole may develop harmoniously.
- C. Streets:
 - 1. Proposed streets must conform to the state road and county highway plans.
 - 2. Streets must be logically related to the topography and have reasonable grades.
 - 3. Access must be given to all lots and portions of the tract in the subdivision, and to adjacent unsubdivided parcels unless the topography clearly indicates

that the connection is not feasible. Reserved strips and landlocked areas shall not be created.

4. The arrangement of streets in the new subdivision must plan for the continuation of the existing streets in adjoining areas without promoting cut throughs or short cuts that impact residential neighborhoods.
5. If adjoining areas are not subdivided, but may be subdivided in the foreseeable future, the arrangement of streets in a new subdivision must make provision for the proper projection of streets into adjoining areas by carrying the new streets to the boundaries of the new subdivision at appropriate locations.
6. Partial streets will not be permitted.
7. Dead-end streets are prohibited, except or when designed as temporary or permanent cul-de-sac streets.
8. Private streets and reserve strips are prohibited and no public improvements may be approved for a private street. All streets must be dedicated for public use.
9. If a subdivision abuts or contains an existing or planned arterial, a street approximately parallel to and on each side of the arterial may be required for adequate protection of residential properties and separation of through and local traffic. These service streets must be located at a distance from the major arterial suitable for appropriate use of the intervening land, and for park purposes in appropriate districts. Such distances shall also be considering requirements of approach grades and future grade separations.
10. Streets may not be arranged in a way that will cause undue hardship to owners of adjoining property.
11. Cul-de-sac and hammer handle streets, permanently designed as such, shall not exceed 600 feet in length including a terminal turn around provided at the closed end with a radius of 60 feet minimum. The length shall be measured along the center line from the nearest intersection to the center of the cul-de-sac. Use of permanent cul-de-sacs are discouraged when through streets are practical.
12. Where a temporary cul-de-sac is required, the turnaround right-of-way shall be placed adjacent to a plat boundary line and a right-of-way of the same width as the street carried to said property line in such a way as to permit future extension of the street in the adjoining tract. At such time as such a street is extended, the acreage covered by the turnaround outside the boundaries of the extended street shall revert in ownership to the property owner facing on the temporary turnaround.

13. Street Design

- a. Minimum right-of-way widths and pavement widths (face to face of curb) for each type of public street or road are as follows:

Type of Street	Right-of-way Width	Roadway Width
Arterial	120 ft. by traffic needs	As determined
Major Collector	80 feet	44 feet
Minor Collector	60 feet	42 feet
Commercial or Industrial Service	60 to 70 feet	32 to 44 feet
Local	60 feet	26 to 32 feet
Cul-de-sac	60 feet radius	48' turnaround

- b. Where a subdivision abuts or contains an existing street of inadequate width, sufficient additional width must be provided to meet the above standards.
- c. Alternative street standards may be allowed when it can be demonstrated that the safety and function of the street system will not be adversely impacted by the alternative standards and that the development will be attractive and can be accommodated by the street system.
- d. Additional right-of-way and roadway width may be required to promote public safety and convenience when special conditions require it or to provide parking space in areas of intensive use.
- e. Extensions of existing streets with lesser right-of-way than prescribed above, may be permitted by modification.
- f. Restrictions of Access. Access from minor streets onto state and county aid highways, is discouraged at intervals of less than five hundred (500) feet.
- g. Street Jog. Street jogs with centerline offsets of less than one hundred fifty (150) feet are prohibited.
- h. Deflection. When connecting street lines deflect from each other at any one point by more than ten (10) degrees, they must be connected by a curve with a radius of not less than one hundred (100) feet.
- i. Grades. Centerline gradients must be at least 0.5 percent and may not exceed the following:

Classification	Gradient (in percent)
Thoroughfares and Collector Street	5
Minor Streets	7.5

- k. Vertical Curves. Different connecting street gradients must be connected with vertical curves. Minimum length, in feet, of these curves shall be twenty (20) times the algebraic difference in the percent of grade of the two adjacent slopes.

- l. Angle of Intersection. The angle formed by any intersecting streets may not be less than 60 degrees with 90 degree intersections preferred.
- m. Size of Intersection. Intersections of more than four corners are prohibited.
- n. Corner Radii. Roadways of street intersections must be rounded by a radius of not less than fifteen (15) feet. Roadways of alley-street intersections must be rounded by a radius of not less than six (6) feet. Corners at the entrances to the turnaround portions of the cul-de-sac must be rounded by a radius of not less than fifteen (15) feet.
- o. Street Pavement. New developments will require paved streets. The design of street pavement for all streets covered by this regulation must be in accordance with the city engineer recommendation for flexible pavements. The design thickness of the surfacing elements must be in accordance with the flexible pavement design standard for road classifications as follows:

<u>Classification</u>	<u>Pavement Design Axle Load</u>
Thoroughfare, Collector Streets & Commercial or Industrial Service Streets	10 tons
Local	7 ton minimum

- p. Soil Tests. To determine subgrade soil classifications, soil samples must be collected and analyzed by a licensed testing laboratory. Reports of the soil analysis must be submitted to the City Engineer with the pavement plans. Soil samples must be taken along the centerline of the proposed road at intervals not exceeding 300 feet.
 - q. Curb and Gutter. Concrete curb and gutter must be constructed on both sides of streets. The construction must be in accordance with the city engineer recommendation and/or city plates.
 - r. Boulevards. All boulevards must be at least four (4) feet in width and must have four (4) inches of top soil (black dirt) placed on them and then be sodded.
14. Permanent cul-de-sac streets, may not exceed six hundred (600) feet in length.
14. Unless future extension is clearly impractical or undesirable, a turnaround right-of-way must be designed to permit future extension of the street into the adjoining tract. At the time a street is extended, the acreage covered by the turnaround outside the boundaries of the extended street will revert in ownership to the property owner fronting on the temporary turnaround.

16. Alley Design. Alleys may be allowed and are subject to the following standards:

Classification	Right-of-way Width	Pavement
Residential (two-way)	24 feet	16 feet
Residential (one-way)	20 feet	12 feet

17. Grades. All centerline gradients must be at least 0.5 percent and shall not exceed eight (8) percent.

18. Street Names.

- a. Names of new streets must not duplicate existing or platted street names unless a new street is a continuation of or in alignment with the existing or platted street. In that event, it must bear the same name of the existing or platted street so in alignment.

19. Street Signs.

- a. All street signs must be provided at the expense of the subdivider.

20. Street Trees and Landscaping Plan.

- a. On average, three (3) street trees shall be planted per lot. They must be placed inside the property line and not in the boulevard unless approved by the City Administrator.
- b. The type of species of trees planted must be from the list of trees approved by the City Council. Trees shall be root structures that are less likely to interfere with utility lines, break up sidewalks, and cause other nuisance damage are desirable. Trees must have a trunk diameter (measured at breast height) of not less than 2 inches caliper. Approved multiple varieties shall be used.
- c. Alternative street tree and landscape standards may be allowed in planned unit developments with review and approval by the Planning Commission.

21. Residential Street Lighting.

- a. A street lighting plan must be submitted to the City Engineer to accommodate safe travel and to preserve the character of the neighborhood. Street lights are required and must comply with city specifications.

22. Sidewalk and Trail Design. Sidewalks are required and must meet the following standards:

- a. Widths. All sidewalk widths must when installed conform to the following minimum standards:

Classification	Width
Single Family Area	6 feet minimum
Multiple Family Area & Public Building Sites	6 feet

Commercial Areas	8 feet
Industrial Areas	6 feet

- b. Grades. Sidewalks shall slope ¼ inch per foot away from the property line and the profile grade may not exceed 7.5 percent.
- c. Sidewalks required. Sidewalks and/or trail easements are required on all local collector or through streets unless an alternative location is approved by the City Council with recommendations from the Planning Commission. Sidewalks must be placed in a public right-of-way or utility easement.
- d. Provision for handicapped. Sidewalks must be brought to a maximum of 1 ½” above the street grade of all intersections to facilitate movement for elderly and the handicapped.
- e. Multi use walking or biking trails must be eight (8) feet in width with adequate right-of-way.
- f. All required walks must be concrete six (6) inches thick and constructed to city specifications.

23. Public Utilities.

- a. Water Supply. Extensions of the public water supply system must be designed to provide public water service to each lot as required by the City Water Department.
- b. Sewage Disposal. Extensions of the public sanitary sewer system must be designed to provide public sewer service to each lot as required by the City Engineer.
- c. In areas where public water and sewer service cannot be provided on-site, sewer systems and private wells may be utilized only until municipal services are available, and only if a modification is granted by the City Council. All on-site systems must meet Minnesota PCA requirements as administered by the Building Official.
- d. All electrical, telephone and other wire or cable transmitted utility lines and services must be installed underground in a common trench unless an alternative is approved by the City Engineer.

24. Drainage.

- a. All surface and underground drainage systems must be installed to adequately remove all natural drainage that accumulates on the developed property. All systems must be in conformance with the community drainage plan and all piping must provide complete removal and a permanent solution for the removal of drainage water. The drainage system may include a storm sewer system or a system of open ditches, culverts, pipes, catch basins, and ponding areas.
- b. The drainage plan must include water quality treatment provisions, at a minimum, meeting “NURP” pond standards (Phosphorous removal efficiency of at least 65 percent, capacity of 2.5”, 24 hour storm) with 25 percent increase for sediment and include sufficient storm water holding capacity to meet the “No Net Increase” design standard for a 100 year storm.

- c. All development areas that drain into School, Martha and Wallmark lakes must show how the proposed drainage system will minimize the impact on those DNR protected wetlands.

25. House Plumbing.

- a. When an individual sewage system is used and the septic tank is placed on a side other than that from which the public sewer line would connect, it must be required that a capped sewage disposal line is extended from the point of ground entrance of basement or house to a point five (5) feet beyond and to the side from which the future sewer connection will most likely be made. Inside the basement, the elbow must be set up to be easily reversed for connection to the capped line.

26. Easements.

- a. Provide for Utilities. Easements of 10 feet on the front lot lines and 5 feet on the rear and side lot lines must normally be provided for public utilities. If underground utilities are being installed, additional easements may be required.
- b. Provided for Drainage. Easements must be provided along each side of the centerline of any water course or drainage channel to a sufficient width to provide proper maintenance and protection and to provide for storm water runoff and installation and maintenance of storm sewers.
- c. Dedication. Utility and drainage easements must be dedicated for the required use.
- d. Open space. Easements for the provision and protection of open space or wetlands may be required.

27. Block Design.

- a. Block length and width or acreage within bounding streets must accommodate the size of residential lots in the area and provide for convenient access, circulation control, and safety of street traffic.
- b. In residential areas, without water frontage, blocks shall not be less than four hundred (400) feet nor more than fifteen hundred (1,500) feet in length measured along the greatest dimension of the enclosed block area, unless modifications are necessitated because of topography or conformance with an adjoining plat.
- c. In blocks over nine hundred (900) feet long, ten (10) foot wide pedestrian crosswalks may be required through the blocks in locations deemed necessary to public health, convenience and enjoyment. Suitable setbacks, paving, landscaping, or fencing may be required.
- d. Blocks for commercial and industrial areas may vary from the element of design contained in this section if the nature of the use requires other treatment. In such cases, off-street parking for employees and customers must be provided, along with safe and convenient limited access to the street system. Space for off-street loading must be provided with similar access. Extension of roads, railroad access right-of-way and utilities must be provided.

- e. Blocks must be wide enough to allow two (2) tiers of lots with minimum depth as required by the zoning ordinance except when adjoining a lake, stream, railroad or thoroughfare of where one tier of lots is necessary because of topographic conditions.

28. Lot Requirements.

- a. Side lot lines must be substantially at right angles to straight street lines or radial to curved street lines or radial to lake or stream shores unless topographic conditions necessitate a different arrangement.
- b. Each lot must front upon a public street.
- c. For areas with urban sewer service available, no lot may have less area or width than is required by the zoning regulations applying to the district in which it is located. For unsewered areas in all zoning districts, the minimum lot size shall be 2.0 acres of lot area, except where more square footage is required by zoning regulations. Exceptions to lot size standards may be allowed through the planned development review process.
- d. Lots designed for commercial or industrial purposes must provide adequate off-street service, loading and parking facilities.
- e. Building Sites. Each lot must have a total width at the front or rear lot line of not less than thirty (30) feet.
- f. Corner lots must be platted at least twenty (20) feet wider than interior lots.
- g. Butt lots in any subdivision are to be discouraged. Where butt lots must be used to fit a particular type of design, they must be platted at least ten (10) feet wider than the average width of interior lots in the block.
- h. Through or Double Frontage Lots shall not be permitted except where the lots abut a thoroughfare or major highway. These must have an additional depth of twenty (20) feet for screen planting along the rear lot line.
- i. Water Courses. Lots abutting upon a water course, drainageway, channel or stream must have an additional depth or width as required to assure wetland setbacks are met.
- j. Lots with lakeshore frontage must be designed so that the lot lines extended maintain the closest approximation to riparian rights for each lot.
- k. Natural Features must be shown for all natural features, such as tree growth, water courses, historic or cultural sites or other unique site conditions.
- l. Lot Remnants. All remnants of lots below minimum size left over after subdividing of larger tract must be added to adjacent lots.
- m. Access to Thoroughfares. In the case where a proposed plat is adjacent to a limited access highway, other major highway, or thoroughfare, there must be no direct vehicular access from individual lots. In the platting of small tracts of land fronting on limited access highways or thoroughfares where there is no other alternative, a temporary entrance may be granted, but when neighboring land becomes subdivided and more preferable access arrangements become possible, temporary access permits will be eliminated.

- n. Political Subdivision Lines. No lot may extend over a political subdivision boundary.
- o. Large Lot Planning. In any area where lots are platted in excess of 32,000 square feet or 180 feet in width at the building setback line, a preliminary resubdivision plan may be required showing potential and feasible ways in which the lot or lots may be resubdivided in future years for more intensive use of the land. The placement of buildings or structures upon these lots must allow for potential resubdivision.

29. Protected Areas.

- a. Where land proposed for subdivision is deemed environmentally sensitive by the City due to the existence of wetlands, drainage ways, water courses, floodable areas, steep slopes or other environmental features, the design of said subdivision must clearly reflect all necessary measures of protection to insure against adverse environmental impact.
- b. All submittals required by the above ordinances must be submitted in conjunction with the Preliminary Plat.

30. Monuments.

- a. All lot corner pipes or iron rods must be a minimum of one half (1/2) inch in diameter, 18 inches in length, and shall be inscribed with the registration number of the land surveyor performing the survey as prescribed in Minnesota Statutes Chapter 505.

31. Inspection.

- a. All required improvements must be inspected by the City Engineer during construction at the expense of the subdivider.

(Adopted: June 1997. Amended: July 2008. Amended: February 2023.)