



REPORT TO PLANNING COMMISSION

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Date: November 25th, 2024

Subject: Impervious Surfaces

Report: Per the direction of the Planning Commission at the October 2024 Planning Commission meeting, this report will outline in general the following items; definitions of impervious surfaces, impervious surface maximum percentages by zone, information regarding pervious surfaces & regional information for pervious surface “credits”, and current City of Pequot Lakes impervious surface “relief mechanisms” for increase in impervious surfaces beyond zone maximum percentages.

1) Definitions:

- A. **City of Pequot Lakes:** “Impervious Surface: The horizontal area of buildings, patios, walks, driveways, accessory structures and other surfaces generally impervious to the penetration of stormwater, including gravel drives and parking.”
- B. **MN DNR (from the Shoreland Model Ordinance):** “Impervious surface. A constructed hard surface that prevents or retards entry of water into the soil and causes water to run off the surface in greater quantities and at an increased rate of flow than prior to development, including rooftops; decks; sidewalks; patios; swimming pools; parking lots; concrete; asphalt; gravel driveways, or permeable pavers; and other similar surfaces.”
- C. **Crow Wing County:** “Impervious Surface: A constructed hard surface that prevents or retards entry of water into the soil and causes water to run off the surface in greater quantities and at an increased rate of flow than prior to

development, including rooftops; sidewalks; patios; parking lots; storage areas; concrete, asphalt, or gravel driveways; and other similar surfaces.”

D. **City of Nisswa:** “Impervious surface means a constructed hard surface that prevents or retards entry of water into the soil and causes water to run off the surface in greater quantities and at an increased rate of flow than prior to development, including rooftops; sidewalks; patios; parking lots; storage areas; concrete; asphalt; or gravel driveways; and other similar surfaces.”

E. **City of Breezy Point:** “Impervious surface: The horizontal area of buildings, roof overhangs, decks and patios constructed of any materials, walks, driveways, accessory structures and other surfaces generally impervious to the penetration of stormwater, including drives and parking areas of any material.”

2) Impervious Surface Maximums:

City of Pequot Lakes:

1. Forest Management: 10%
2. Agriculture: 10%
3. Rural Residential: 15%
4. Transition Residential: 25%
5. Shoreline Residential (by lake classification)
 - i. GD Riparian: 20% Non-Riparian: 15%
 - ii. RD: 15%
 - iii. NE: 10%
6. Urban Residential: 40%
7. Commercial: 50%
8. Shoreline Commercial (by lake classification)
 - i. GD: 25%
 - ii. RD: 20%
 - iii. NE: 20%
9. Downtown Mixed Use
 - i. Storm sewer available: 90%
 - ii. No storm sewer available: 50%
10. Light Industrial: 90%
11. Recreation: 15%
12. Public
 - i. Storm sewer available: 90%
 - ii. No storm sewer available: 50%
13. Patriot Development: 75%

Crow Wing County:

Impervious Surface Maximum percentages:

Table 41.1 Shoreland Protection Zone Impervious Surface Limits (see “Shoreland Protection Zone” as defined in Article 46)		
Development or Use	Maximum Impervious Surface	Applicable Area
Residential lots with no stormwater plan required as per Article 41.2 A 1	15%	Total lot area above the OHW
Residential lots with stormwater plan as per Article 41.2 A 2	20%	Total lot area above the OHW
Residential lots with stormwater plan & shoreline buffer as per Article 41.2 A 3	25%	Total lot area above the OHW
New Conservation Developments with stormwater plans as per Article 33*	30%	Entire SPZ
Existing Planned Unit Developments with stormwater plans as per Article 41.3*	60%	Average Dwelling unit lot
Resorts with stormwater plans as per Article 34.8	25%	Total project area and any tier above the OHW
Commercial with stormwater plans as per Article 16.3	30%	Total lot area above the OHW

*Provided that a minimum of 50% of the total project area is common open space.

B. Shoreland District--Shoreland Buffer Zone. Impervious surface coverage shall not exceed the limits in table 41.2.

1. The Department shall consider proper stormwater management for all permits in the shoreland buffer zone and recommend to applicant’s best management practices as set forth in the Minnesota Stormwater Manual.

Table 41.2 Shoreland Buffer Zone Impervious Surface Limits (see “Shoreland Buffer Zone” as defined in Article 46)

Development or Use	Maximum Impervious Surface	Applicable Area
Residential lots with BMP’s per Article 41.2 B	25%	Total lot area
New Conservation Developments with stormwater plans as per Article 41.3*	30%	Average Dwelling unit lot
Existing Planned Unit Developments with stormwater plans as per Article 41.3*	60%	Average Dwelling unit lot
Resort with stormwater plans as per to Article 34.8	30%	Total project area and any tier
Commercial with stormwater plans as per Article 16.3	35%	Total lot area

Table 41.3 Non-Shoreland Impervious Surface Limits

Development or Use	Maximum Impervious Surface	Applicable Area
Residential lots	25%	Total lot area
New Conservation Developments with stormwater plans as per Article 41.3*	40%	Average dwelling unit lot
Existing Planned Unit Developments with stormwater plans as per Article 41.3*	75%	Average dwelling unit lot
Resort with stormwater plans as per Article 34.8	40%	Total project area and any tier
Commercial with stormwater plans as per Article 16.3	60%	Total lot area

City of Breezy Point: Impervious Surface maximum percentages

1. Low Density Residential:
 - a. GD Lake: 20%
 - b. NE Lake: 15%
2. Medium Density Residential:
 - a. Sewered: 25%
 - b. Unsewered: 25%
 - c. RD Lake: 20%
 - d. NE Lake: 15%
3. Original Neighborhoods (R-3):
 - a. Sewered: 30%
 - b. Unsewered: 25%
4. Multi-family Residential: 30%
5. Estate Lots Residential: 15%
6. Wooded Residential: 10%
7. Urban Reserve: 10%
8. Public: 50%
9. Resort Commercial: 25%
10. Commercial
 - a. Sewered: 50%
 - b. Unsewered: 25%

City of Nisswa: Impervious Surface maximum percentages

1. Open Space Residential: 15%
2. Shoreland Residential/Linden Lakeshore Residential:
 - a. GD/RD Lake: 25%
 - b. NE Lake: 20%
3. Urban Residential: 25%
4. Commercial Waterfront:
 - a. GD/RD Lake: 25%
 - b. NE Lake: 20%
5. Central Business: 90%
6. Highway Business: 50%
7. Public & Recreation: 15%

3) **“Pervious” pavers, credits, etc:**

1. **The City of Pequot Lakes** does not currently have provisions or a definition within code to allow for “pervious” paver “credit”.

2. **The City of Nisswa**

- a. Section 20-131, subpart 7 of City Code states; “The department may give credit for up to 100 percent of the area covered by a permeable surface system as a pervious surface if it is designed and inspected by a Minnesota-licensed professional engineer and is certified annually to the department that it is functioning as a pervious surface. Best management practices shall be followed in design, installation, and maintenance as found in the latest Minnesota Stormwater Manual, subject to the following standards;
- No credit may be given for a permeable pavement system in the shore impact zone 1, 2 or a bluff impact zone, except otherwise allowed for watercraft access ramps;
 - The base of the installed permeable surface system must have a minimum of three feet separation for the seasonally saturated soils or from the bedrock; and
 - The design of a permeable pavement system must allow the infiltration of one inch of stormwater on the permeable surface.
 - Permeable surface systems for projects 400 square feet in size or smaller shall not require an engineered design provided that the manufacturer’s specification, industry standards, the Minnesota stormwater manual and all other aspects of this chapter are followed.”

3. **Crow Wing County**

- a. Section 41.3, subpart G of the Land Use Ordinance states verbatim the language listed in Section 20-131 subpart 7 of the City of Nisswa Code (above).

4. **The DNR Shoreland Model Ordinance** does not have provisions for pervious paver “credits” within its latest draft.

5. **The City of Breezy Point** defines Pervious Hard Surfaces as:
- a. “Permeable hard surfaces (concrete, concrete pavers, asphalt) installed over an engineered sub-surface. These surfaces shall be professionally designed, installed, and periodically maintained to capture rain water in a network of voids that allow it to percolate into the underlying soil. These surfaces may be utilized for roadways, parking areas, sidewalks, and patios.”

4) **City of Pequot Lakes “Impervious relief mechanisms”**

a. Shoreline Residential

- a. 17-5.8 subpart 4 (b) states:
 - i. Impervious coverage may be increased by 5% through a conditional use permit if the following is provided:
 1. A storm water retention plan showing containment of the 5-year, 24-hour storm event on the parcel.
 2. Direct runoff of stormwater to adjacent water bodies, including wetland and adjacent parcels, shall be eliminated through the use of berms or other permanent means.

b. Urban Residential

- a. 17-5.9 subpart 4 (d) states:
 - i. Impervious coverage may be increased by 20% through a conditional use permit if the following is provided:
 1. A storm water retention plan showing containment of the 5-year, 24-hour storm event on the parcel.
 2. Direct runoff of stormwater to adjacent water bodies, including wetland and adjacent parcels, shall be eliminated through the use of berms or other permanent means.

c. Commercial

- a. 17-5.10 subpart 4 (a) states:
 - i. Impervious coverage may be increased by up to 10%, not to exceed 60% of the property if the following is provided and approved by the City:

1. A storm water retention plan showing containment of the 10-year, 24-hour storm event on the parcel.
2. Direct runoff of stormwater to adjacent properties and wetlands shall be eliminated through the use of berms, infiltration ponds, swales, filtration strips or other permanent means.

d. Shoreline Commercial

- a. 17-5.11 subpart 4 (f) states:
 - i. Impervious Surface Replacement. Parcels that exceed the maximum allowed impervious surface may construct additional impervious surfaces if the overall impervious coverage is reduced on a 2:1 removal/construction ratio.

This report is for referential purposes only, no proposed changes or amendments have been formally introduced to City Council.