

**PERMIT
INFORMATION
PACKET**

Pelican River Watershed District

211 Holmes St W, Suite 201, P.O. Box 1043, Detroit Lakes, MN 56502
(218) 846-0436 phone
(218) 846-0778 fax

IMPERVIOUS SURFACE PERMITS

Use this packet for preparation of an application for a permit for proposed projects which will result in total impervious surface (new and existing) in excess of 25% of lot area, or an acre (43,360 square feet) or 10,000 square feet within the Shoreland Zone. Refer to the back page for definitions.

Complete and sign enclosed applications to the District office for review and approval. Applications must be signed by the property owner or governmental unit (if applicable). Complete applications will include: (1) signed application; (2) necessary maps, diagrams and any necessary product specifications or calculations in duplicate; and (3) permit application/field inspection fees. Additional information may be required by the District after initial review.

Applications are usually reviewed within 14 days, however the District reserves the right to allow 60 days for approval from receipt of completed application. Once all plans and other permit requirements are met, the Board of Managers or their Designee will approve your permit. You can pick up the signed permit at the District office or we can mail it to you by request. PRWD Staff will inform you within ten (10) days written notice of any deficiencies in your application and ask you to make necessary changes.

In reviewing and approving applications, the following will be taken into consideration:

General Conditions:

Impervious surface changes covered by a District permit may not result in increases in stormwater discharge rates to a lake or stream, or to adjoining properties for the 5-year, 25-year, and 100 -year -24-hour rainfall events.

For areas that are changed, projects must incorporate on-site retention for the 5-year-24-hour rainfall event (3.2 inches). An alternative standard would be to show at least 50% phosphorus and 90% suspended solids removal for a 3.2" rainfall event using Walker's Pondnet model. Examples of such measures include swales, infiltration trenches, French drains. A maintenance schedule must be provided (i.e., if sediment builds up, it will need to be removed)

Projects increasing impervious surfaces covered by a District permit must utilize standard procedures for controlling runoff rates, nutrients and sediments (references to such standards are listed on the last page of this packet).

Proposed actions involving additions of impervious surface over 25% of lot coverage, but less than 1 acre, or less than 10,000 square feet in the Shoreland Zone:

Must include a grading and sediment erosion control plan and a PRWD impervious surface site plan with the permit application.

Proposed actions involving additions of impervious surface of 1 acre or 10,000 square feet or more in the Shoreland Zone:

Must include a grading and sediment erosion control plan and a PRWD stormwater management plan (including a site plan) with the permit application.

THE IMPORTANCE OF BEING PERVIOUS!

The poor water quality in our lakes and streams is linked to the growing imperviousness of our watersheds.

The idea is simple, as more and more of a watershed is covered by surfaces which do not permit infiltration into the ground, more runoff is produced, it moves at a greater speed, and it delivers more pollutants to rivers and lakes.

Pollutants negatively impact receiving waters and the health of the organisms which inhabit them. As impervious coverage increases, the problems multiply.

Consider this extreme case: compared to a meadow of the same slope and size, a parking lot (100% impervious) surface produces 15 times as much runoff from a one-inch storm, 5 times the runoff velocity, 7 times as much nitrogen load, and 4 times as much phosphorus. Fortunately, most watersheds are not 100% impervious. On the other hand, large portions of our watersheds are covered with impervious surface, and the percentage is growing. Research has shown that downstream waters (lakes and streams) of watersheds with as little as 10 percent impervious surface are impacted. Shoreland Zone areas around our lakes are generally between 15 and 25 impervious.

District Rules are aimed at minimizing the effects of impervious surfaces, particularly in shoreland areas.

WHAT SHOULD SHORELAND OWNERS DO?

Shoreland property owners can reduce impervious surfaces on their properties through careful design. Avoid long driveways, or large parking areas, as examples. Also garages can be oriented in such a way as to eliminate turning areas. For longer driveways, share with a neighbor, reduce driveway width, or use wheel-track designs.

More and more **pervious** paving materials are available, and are very suitable for sidewalks, patios, driveways, and parking areas. Contractors can provide information on modular paving blocks, concrete and plastic interlocking units which may be filled by grass or gravel. The subsurface areas are comprised of sand and gravel to promote infiltration. They are suitable for most residential applications, and properly installed, can withstand harsh winters and snowplows. Such pervious installations will initially be more expensive than asphalt or concrete, but may reduce stormwater treatment costs (see box).

Impervious surface can be expensive!

Regulations may require on-site retention of runoff from impervious surfaces. These regulations apply to shoreland lots where total imperviousness exceeds 25% or 10,000 square feet. On a 25,000 square foot lot, a 1% increase in impervious surface (e.g. 250 square feet), requires about 60 cubic feet of storage of runoff. That is equivalent to an area 10 feet wide, six feet long, and 1 foot deep. Providing such storage may be expensive and inconvenient.

FOR MORE INFORMATION ON SPECIFIC PERVIOUS PAVING PRODUCTS CONTACT THE WATERSHED DISTRICT OFFICE AT (218) 846-0436.

Do not use this form for projects which have impervious surfaces of one acre or more OR greater than 10,000 square feet in the shoreland district,

IMPERVIOUS SURFACE SITE PLAN

For office use only
Permit Application No. _____

Lot Area: _____ Sq. Ft;

Impervious area allowable (lot area x 25%): _____ Sq. Ft;

Current Impervious surface area: _____ Sq. Ft;

Proposed Impervious surface area: _____ Sq. Ft;

Total Impervious surface area _____ Sq. Ft.
(See reverse for impervious surface worksheet)

Area in excess of allowable lot coverage _____ Sq. Ft;

Estimated retention volume required: _____ Cu. Ft..
(District staff will calculate this for the applicant).

Site plan should include:

- Property boundaries and adjacent land usage (road right-of-way, buildings, waterways, drainage systems, streams, lakes, wetlands), shore impact zone (if applicable), lot dimensions, north point, date, scale of drawing.
- Existing topography (elevations, contours, drainage directions)
- Locations and dimensions of existing buildings, paved or surfaced areas (driveways, sidewalks, decks, patios), vegetated areas, and septic system.
- Items to be removed (buildings, paved or surfaced areas, vegetated areas, etc.)
- Proposed additions of buildings, paved or surfaced areas, vegetated areas, septic systems, etc.
- Anticipated grading/finished elevations
- Anticipated construction dates
- Stormwater on-site retention areas

DEFINITIONS

Impervious— a constructed hard surface that either prevents or retards the 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.

Pervious surface—a constructed surface that provides a large measure of infiltration into the ground.

Shoreland Zone (or Shoreland District)—means land located within 1000 feet of the Ordinary High Water Level (OHW) of a lake, or 300 feet from a river or stream).

Ordinary High Water (OHW). The boundary of public waters and wetlands which is an elevation delineating the highest water level which has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly the point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial. For watercourses, the ordinary high water is the elevation of the top of the bank of the channel. For many lakes in the District, the DNR has set a defined the OHW as a specific elevation.

Examples of impervious surfaces: rooftops, sidewalks, patios, roads, decks, driveways and parking lots constructed of concrete, asphalt, paving stones and bricks, or compacted soils (including “class 5”).

IMPERVIOUS COVERAGE WORKSHEET			
Type of Impervious Surface	Existing (sq. ft.)	New (proposed) (sq. ft.)	Comments (pervious brands, etc.)
House			
Garage(s)			
Driveway, parking			
Sidewalk			
Patio, Deck			
Guest House, Boathouse, etc.			
Other (specify)			
Totals			

Sources of Standard measures for use in controlling runoff and nutrient discharges.

- *“Protecting Water Quality in Urban Areas” manual (MPCA , 2000) as revised.*
- *“BWSR Minnesota Construction Site Erosion and Sediment Control Planning Handbook” as revised,*
- *NRCS “Slope Protection for Dams and Lakeshores, Minnesota Technical Release 2” (October 1997) as revised,*
- *“Minnesota Urban Small Sites BMP Manual, Met Council, 2001”*
- *“Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices, U.S. Environmental Protection Agency, 1992”, as revised.*



**To protect and enhance the quality of water in the lakes within its jurisdiction and to ensure that wise decisions are made concerning the management of streams, wetlands, lakes, groundwater and related land resources which impact these lakes—
PRWD Mission Statement**

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GRADING & EROSION CONTROL PLAN

EROSION & SEDIMENT CONTROL PLAN

The goal of this plan is to prevent erosion from occurring and keep sediment on the site during active construction.

This is accomplished by minimizing: (1) the area and duration of exposed soil and unstable soil conditions; (2) off-site sediment transport on trucks and equipment; (3) work in and adjacent to water bodies and wetlands; (4) soil compaction. In addition, maintain stable slopes, and avoid steep slopes and the need for high cuts and fills.

Natural site topography and soil conditions must be considered to reduce erosion and sedimentation during construction and after project completion. Erosion and sediment control measures must be installed prior to land altering activities and routinely inspected and maintained during the project until final turf and ground cover has been established. The project site must be inspected after every rainfall event exceeding 0.5 inches and implement erosion and sediment control measures as addressed as needed. The project must be phased as best as possible to minimize disturbed areas and removal of existing vegetation until necessary for project progress. In order to ensure that sediment is retained on-site, the District may require the permit applicant to provide additional erosion control measures where site conditions warrant. Temporary erosion and sediment control measures (i.e., silt of land alteration. For areas altered with a slope of 3:1 or greater, restoration with sod or woofence, rock access drives) must be removed after all disturbed areas have been stabilized.

All disturbed areas must be restored at a minimum with seed and disced mulch, sod, wood-fiber blanket, or be hard surfaced within 2 weeks from the completion of fiber blanket is required. Typically, restoration with seed and disced mulch must be completed not later than September 15. Areas to be restored with sod must be completed by October 15. Both of these restoration dates are in accordance with Natural Resource Conservation Service requirements.

EROSION AND SEDIMENT CONTROL PLAN MUST INCLUDE:

1. Existing and proposed topographic map which clearly indicates all hydrologic features (i.e., ditches, grass channels, swales, perennial/intermittent streams, wetlands, lakes, ponds, floodplains, culverts, and storm sewers) and areas where grading will expose soils to erosive conditions. The plan must also indicate the direction of all site runoff.
2. Identification of all temporary erosion control measures which will remain in place until permanent vegetation is established for the construction site, including entryways onto sites and for work areas within open water. Examples include, but are not limited to: seeding, mulching, sodding, silt fence, erosion control matting, access drives (rocked filter dike at construction site entrance). Work proposed within open water areas (e.g., installation of a storm sewer outfall) floatation silt curtain must be used.
3. Location and dimensions of all temporary soil or dirt stockpiles.
4. A detailed schedule indicating dates and sequence of land alteration activities; implementation, maintenance and removal of sediment and erosion control measures; and permanent site stabilization measures.
5. Name, address, and phone number of party responsible for maintenance of all erosion control measures.
6. A detailed description of how erosion control, sediment control and soil stabilization measures implemented pursuant to the plan will be monitored, maintained, and removed.
7. Identification of all permanent erosion control measures such as vegetation, outfall spillways, and rip-rap shoreline protection, and their locations.
8. Copy of MPCA Notification of application for an NPDES general permit for projects one acre or more of graded area.
9. Tabulation of all earthwork cut-and-fill volumes and computation of any floodplain volume and/or wetland area changes.

All actions and plans must utilize standards and procedures for controlling runoff rates, nutrients, and sediments as described in the "Protecting Water Quality in Urban Areas" manual (MPCA, 2000) as revised.

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STORMWATER MANAGEMENT PLAN

The goal of the stormwater management plan is to minimize long-term erosion and manage storm water runoff discharging from the project's impervious surface after construction is complete.

The following items are to be included in the stormwater management plan.

1. description of the proposed land use and a description of all adjacent lands;
2. location/dimensions of property lines, existing roads, buildings, other structures, paved or surfaced areas; utilities (e.g., water, sewer, gas, electric) and easements;
3. detailed site topographic plan showing: existing grades (minimum of 2-foot contours recommended) and all hydrological features such as ditches, grass channels, swales, perennial/intermittent streams, wetlands, lakes, ponds, floodplains, culverts, and stormsewers;
4. tributary subwatersheds and on-site drainage paths;
5. mapping/description of predominant soils from most current version of USDA , "Soil Survey for Becker County, MN";
6. boundaries of existing predominant vegetation and proposed limits of clearing
7. detailed site topographic plan for the proposed project conditions which clearly indicates alterations to existing grades and topographic features. The plan should outline changes in sub-watershed divides, emergency overflows, and drainageways. Proposed location of new roads, buildings, and other structures;
8. show any items to be removed;
9. calculations demonstrating that post-development, peak discharges rates are not increased over existing conditions for the 5-, 25-, and 100-year storm events;
10. calculations demonstrating that detention facilities have been designed with permanent pool volume sufficient to retain the runoff from a 3.2-inch rainfall. An alternative standard would be to show a minimum of 90% removal of total suspended solids and a 50% or higher total phosphorus removal for a 5-year-24-hour rainfall event using Walker's Pond Net model.
11. preliminary landscaping plans for stormwater treatment practices and any site re-vegetation or re-forestation.
12. maintenance plan for on-site treatment measures
13. name, address, telephone number, license number of appropriate professional preparing the plan.

All actions and plans must utilize standards and procedures for controlling runoff rates, nutrients, and sediments as described in the "Protecting Water Quality in Urban Areas" manual (MPCA , 2000) as revised.

If a facility or measure is not addressed in that manual, other resources include "BWSR Minnesota Construction Site Erosion and Sediment Control Planning Handbook" as revised, the NRCS "Slope Protection for Dams and Lakeshores, Minnesota Technical Release 2" (October 1997) as revised, "Minnesota Urban Small Sites BMP Manual, Met Council, 2001", or "Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices, U.S. Environmental Protection Agency, 1992", as revised.

Actions will not result in increases in stormwater discharge rates to adjoining properties or to waters of the state for the 5-year, 25-year, and 100-year- 24-hour rainfall events.