

REVISED

Storm Water Pollution Prevention Plan
For
Residential Subdivision Development
Arbor Park 2nd Addition

Project Location
500 & 600 Blocks of 31st Street North
And
3000 Blocks of 5th & 7th Avenue North

SW $\frac{1}{4}$ of Section 3, Township 139N, Range 48W

Prepared May 2005

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1. US Quad Map Showing Project Location

**DRAFT SINGLE FAMILY RESIDENTIAL CONSTRUCTION
EROSION/SEDIMENT CONTROL STANDARDS**

**MINNESOTA GENERAL STORM WATER PERMIT FOR CONSTRUCTION
ACTIVITY (MN R100001)**

INSPECTION LOG

1. Introduction

- a. Description of Storm Water Prevention Plan (SWPPP) The purpose of this SWPPP is to provide the following:
 - i. Define the type of construction that will occur.
 - ii. Describe practices to be implemented to control erosion and prevent the release of pollutants into storm water.
 - iii. Establish an implementation schedule that ensures the effectiveness of planned practices to reduce erosion, sediment and pollutant levels in storm water discharged from the site.
 - iv. Describe the final stabilization practices and maintenance responsibilities allowing for termination of this permit.

- b. SWPPP Content
 - i. Identification of the storm water pollution prevention team that will assist in implementing the SWPPP during construction.
 - ii. Identification of the receiving water body for runoff from this project.
 - iii. Identification of potential storm water contaminants.
 - iv. Description of storm water management controls and BMPs necessary to prevent or reduce erosion, sediment and pollutants in storm water discharge from this site.
 - v. Description of project monitoring and how BMPs will be coordinated with construction activities.
 - vi. Implementation schedule and provisions for amendments to the plan.

2. SWPPP Duties

The City of Moorhead holds a General Storm Water Permit for Construction Activity (MN R100001) number C00009474 and is listed as “Owner” for the purposes of the permit. The City will retain ownership and maintenance responsibility for any sedimentation basins and storm water structures constructed as part of the project.

The responsibility for BMP maintenance of filter strips and inlet protection will be Grading/Erosion Control Permit holder and home owners, until the area meets the 70 percent cover requirement of the NPDES permit. When the building permit is issued the City will be responsible for informing the individual lot owners/home builders of their responsibility to submit “Subdivision Registration” forms to MPCA. The City will also terminate the MPCA Permit after all the lots are sold and stabilized.

The Grading/Erosion Control Permit holders’ will address issues that arise during construction that impact the waters of the State of Minnesota. They will notify the proper regulatory officials as listed below:

<u>Agency</u>	<u>Permit</u>	<u>Name</u>	<u>Phone #</u>
State Duty Officer	MPCA		800-422-0798
MPCA Detroit Lakes	MPCA	Joyce Cieluch	218-847-1519
City of Moorhead Assistant Eng		Thomas Trowbridge	299-9390
City of Moorhead Storm Water		Bob Fogel	979-9513

It will be the responsibility of the respective Contractors to implement the SWPPP during construction and maintain a quality control program. This includes BMPs undertaken by the City or previous Contractors. The respective Contractors will:

- a. Oversee maintenance practices identified as BMPs in the SWPPP.
- b. Implement SWPPP and BMP training for all parties involved in the construction.
- c. Inspect or monitor activities related to the SWPPP as needed.
- d. Identify additional potential sources of pollutants not included in the SWPPP and take appropriate action to add them to the plan.
- e. Ensure that any changes made to construction plans are consistent with the goals of the SWPPP.
- f. To aid in the implementation of the SWPPP, random site visits will occur by the City Inspectors.

3. Facility Description

a. Site Location

The project is located in the 3000 Blocks of 5th and 7th Avenue North and the 500-600 Blocks of 31st Street North in the SW ¼ of Section 3, Township 139N, Range 48W

Figure 1 (Attached at the end of this document) is a US Quad Map showing the project location.

b. Construction Type

This is a residential subdivision construction project. Sanitary and storm water sewer systems are already installed. Streets with curb and gutter have also been constructed and paved. Homes and driveways will be constructed. A series of interconnected permanent storm water sedimentation ponds are being utilized to treat storm water from the subdivision.

4. Potential Sources of Storm Water Contamination

The purpose of this section is to identify pollutants that could impact storm water during and after construction of this project.

a. Significant Materials Inventory

Pollutants that result from clearing, grading, excavation, road and home building materials and have the potential to be present in storm water runoff are listed in the following table. The table includes information regarding

material type, chemical and physical description and specific regulated storm water pollutants associated with each material.

SIGNIFICANT MATERIALS INVENTORY				
Material/Chemical	Physical Description	Storm Water Pollutants	Location	Process for Containment
Pesticides (insecticides, fungicides, herbicides, rodenticides)	Various colored to colorless liquids, powders, pellets or grains	Chlorinated hydrocarbons, organophosphates, carbamates and arsenic	Herbicides used for noxious weed control	Certified applicator
Permanent Seeding Fertilizer	Liquid or solid grains, nitrogen and phosphorus	Nitrogen, phosphorus, organic substrate	Permanent cover - newly seeded areas	Organic base, slow release forms only, tied up in compost
Temporary Seeding Fertilizer	Liquid or solid grains, nitrogen and phosphorus	Nitrogen, phosphorus, organic substrate	Rapid stabilization areas, topsoil berms, stockpiles	Managed application, certified installers, quick cover plant materials
Cleaning Solvents	Colorless, blue or yellow-green liquid	Perchloroethylene, methylene chloride, trichloroethylene, petroleum distillates	No equipment cleaning allowed in project limits	Tarps, monitor weather for rain and wind
Wastewater from construction	Equipment washing rinse water	Water soil, oil, grease and solids	Equipment washing not allowed in project limits	N/A
Asphalt	Black solid	Oil, petroleum distillates	Streets, roofing	Excess material to be removed for project limits
Concrete	White solid	Limestone, sand	Railroad tracks, culverts, curb and gutter, driveways, home foundations, masonry	Designated wash areas or complete haul removal
Glue, adhesives	White or yellow liquid	Polymers, epoxies	Expansion joints, home construction	Empty container management
Gypsum board	White solid or powder	Calcium carbonate	Home construction	Good house keeping during construction
Joint compound, wall and ceiling texture	White-grey paste or powder	Silica, calcium carbonate	Home construction	Good house keeping during construction
Paints	Various colored liquids	Metal oxides, Stoddard solvent, talc calcium carbonate, arsenic	Roadway striping, home construction	Empty container management
Curing compounds	Creamy white liquid	Naphtha	Curb and gutter	Follow manufacturers recommendations
Wood preservatives	Clear amber or dark brown liquids	Stoddard solvent, petroleum distillates, arsenic, copper, chromium	Timber pads, railroad tracks, home construction	Oil absorbing diapers, trained personnel
Hydraulic oil/fluids	Brown oily petroleum hydrocarbon	Mineral oil	Random leaks broken hoses	Oil absorbing diapers, trained personnel
Gasoline	Colorless pale brown or pink liquids	Petroleum hydrocarbon, benzene, ethyl benzene, toluene, xylene, MTBE	Secondary containment	Oil absorbing diapers, trained personnel
Diesel fuel	Clear blue-green to yellow liquids	Petroleum distillates, oil & grease, naphthalene, xylene	Secondary containment	Oil absorbing diapers, trained personnel
Kerosene	Pale yellow liquid petroleum hydrocarbon	Coal oil, petroleum distillates	Secondary containment	Oil absorbing diapers, trained personnel
Anti-freeze/coolant	Clear green/yellow liquids	Ethylene glycol, propylene glycol	Random leaks and broken hoses	Trained personnel

Soil erosion	Solid particles	Soil, sediment	Project limits	Prevention and Stabilization measures within prescribed periods
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b. Potential Locations for Storm Water Contamination

The following areas were identified and evaluated as potential sources of storm water contamination:

- a. Storm System Inlets
- b. Curb & Gutter
- c. Access Roads
- d. Adjacent Agricultural Land
- e. Material Storage
- f. Individual Home Construction Lots
- g. Construction Soil Stock Piles

5. Storm Water Pollution Prevention Controls

The purpose of this section is to identify the types of temporary and permanent erosion and sediment controls that will be used for this project. The following controls will provide soil stabilization for disturbed areas and structural controls to prevent erosion, divert runoff and remove sediment.

Temporary Erosion and Sediment Control During Home Building Phase

During the home building phase the Grading/Erosion Control Permit holder has responsibility to maintain any erosion and sediment control measures put in place during previous phases. In addition they must comply with the Single Family Residential Construction Erosion/Sediment Control Standards by doing the following:

- Install construction fencing to protect any boulevard (right-of-way) area that has been seeded; or that has silt fence, wattles or sediment logs installed.
- If the above area has been disturbed or is absent of grass, a silt fence or wattle (sediment logs) and the construction fencing must be installed along the curb line.
- A construction entrance must be installed and maintained throughout the home building phase, or until the driveway is installed (if the construction entrance is located where the driveway will be installed).
- Soil stockpiles must receive either silt fence or wattles (sediment logs) to prevent erosion and sediment runoff onto neighboring properties.
- If storm water from the lot under construction drains onto adjacent property, then the lot perimeter must receive silt fence or wattles (sediment logs) to capture any sediments eroding from the construction site.

- During home building good house keeping measures must be implemented to keep garbage, building materials and any hazardous substances from leaving the construction site.
- At the time of final grading for lawn installation the boulevard right-of-way must received approved erosion and sediment controls within 5 days of completing grading work.

The following soil exposure condition table* will be used during all phases of construction, including stockpiles of clay and topsoil:

Type or Condition of Slope	Areas of Inactivity --Working Days Until Area Must be Stabilized
Steeper than 3:1	7 days
10:1 to 3:1	14 days
Flatter than 10:1	21 days
Ditch within 100 feet of “Water of the State”	Begin within 24 hours of ditch connection to “Water of the State” – stabilization must be completed within 5 working days

* This is the maximum time that an area within 200 feet of a “Water of the State” can remain exposed without a vegetative cover. The term “Waters of the State” also includes curbs, gutters, storm system inlets and temporary or permanent ditches that are directly connected to a “Water of the State”. The above as defined by MN NPDES/SDS General Storm Water Permit for Construction Activity MN R100001.

Site Control Measures and Best Management Practices for all phases of construction:

1. Keep excavation and soil disturbing activities such as grading to a minimum.
2. Install silt fence or wattles (sediment logs) around all clay and topsoil stockpiles.
3. Retain existing vegetation when possible.
4. Silt fences and wattles (sediment logs) need to be cleaned, replaced or supplemented when they reach 1/3 capacity (1/3 of height). These actions must occur within 24 hours of discovery or as soon as field conditions allow access to the site.
5. Maintain construction entrances so that sediments are not tracked onto streets. Sweep any sediment tracked onto streets by the end of each workday. This includes construction entrances to individual lots where home building is underway. Sweepers that “fling” material into the air rather picking up material will not be allowed.
6. Have materials on-site to contain and cleanup any contaminants leaked onto the ground during construction.

7. Cover or store materials (particularly fuels) so that they are not at risk to contaminate the project area during rainfall or storm water flow.
8. Water will be used for dust control on this project.
9. Good housekeeping measures are to be implemented to eliminate materials, materials packaging and other litter from leaving the project area. This is especially important during home construction.
10. Inlet protection will remain in place until the lots are 70 percent stabilized. Care will be taken to avoid disturbing protected inlets.
11. Grass filter strips will be maintained adjacent to the curb line on all undeveloped lots.
12. Care will be taken to avoid disturbing BMPs in place such as silt fence or grass filter strips along curb lines during home construction. A single rocked or gravel construction entrance will be designated and maintained into each lot under construction.
13. De-watering of trenches or basins must be done in a manner that does not cause erosion, scour or deposit sediment in curbs, gutters, storm system inlets and temporary or permanent ditches that are directly connected to a "Water of the State". The discharge must be dispersed over rock riprap, sand bags, plastic sheeting or other accepted energy dissipating measures. Use of a temporary sediment basin is preferred.
- 14. Specify and allow concrete truck washout only in designated area.**

a. Permanent Erosion Control

An existing permanent series of sediment control ponds will be used to meet water quantity and quality standards. All lots will be vegetated with permanent cover as homes are built and sold to residents.

e. Coordination of Best Management Practices (BMPs) During Construction

Structural BMPs will be coordinated with construction activities so that BMPs are in place prior to soil disruption. The following BMPs will be coordinated with construction activity.

- i. Silt fence or wattles (sediment logs) around the soil stockpiles will be installed prior to stockpiling material with seeding of the grass filter strip completed immediately following completion of stockpiling.
- ii. Any access roads will be stabilized prior to construction to prevent tracking sediment from the project area.
- iii. Existing inlets will be protected prior to disruption of any soil in the project area.
- iv. All BMPs will be maintained in place until the project area is stabilized.
- v. Once grading in an area has ceased, temporary or permanent stabilization/seeding will occur per the timetable outlined above.

- vi. The pond slopes shall be covered with erosion control mats immediately following seeding.
- vii. Any ditch bottoms created or disturbed are to be seeded followed by sediment logs and erosion control fabric within 24 hours of grading completion.

f. Certification of Compliance with Federal and State Regulations

This SWPPP reflects the requirements of NPDES for storm water management and erosion and sediment control for construction. To ensure compliance, this plan was prepared in accordance with the University of Minnesota Design Training Certification Program, MnDOT specifications used in the project plans and specifications and the Memorandum of Understanding between MnDOT and MPCA.

6. Maintenance of BMPs and Inspection Procedures

a. Inspections

The Grading/Erosion Control Permit holder will provide visual inspection of all cleared and graded areas within the project site daily. Inspections will also be performed within 24 hours after a rainfall event greater than 0.5 inches.

Formal written inspections will be performed weekly in accordance with the NPDES permit on the Inspection Log form provided by the MPCA. The Grading/Erosion Control Permit holder will conduct the weekly inspections. **Written weekly MPCA Maintenance Records must be provided to the City Inspector when requested.**

Records of each inspection and maintenance activity shall include:

- a. Date and time of inspection.
- b. Name of person conducting inspection.
- c. Findings of inspections, including recommendations for corrective actions.
- d. Corrective actions undertaken (including dates, times and party completing maintenance activity).
- e. Date and amount of all rainfall amounts greater than 0.5 inches in 24 hours.
- f. If construction activities or design modifications are made to the site plan, which could impact storm water, this SWPPP will be amended appropriately. The amended SWPPP will have a description of the new activities that contribute to the increased pollutant loading and the planned source control measures.
- g. Where parts of the project area have undergone final stabilization, those parts may have inspections reduced to once per month. Areas not yet stabilized will still need weekly inspection.

- h. Where work has been suspended due to frozen ground the required inspections and maintenance must take place as soon as runoff occurs at the site or prior to resuming construction, whichever comes first.
- i. Erosion prevention and sedimentation control BMPs implemented on this project must be inspected to ensure integrity and effectiveness.

b. BMP Maintenance

The Grading/Erosion Control Permit holder is responsible for maintaining all BMPs during construction. The Grading/Erosion Control Permit holder is responsible for maintenance of stabilized grass filter strips adjacent to curb lines.

The City will retain ownership and maintenance responsibility for any permanent sedimentation basins and storm water structures constructed as part of the project.

The responsibility for BMP maintenance of filter strips and inlet protection will be Grading/Erosion Control Permit holder's until the area meets the 70 percent cover requirement of the NPDES permit. The Grading/Erosion Control Permit holder will bury or remove accumulated concrete at the concrete truck wash out site at the end of home construction activity and restore the wash out area. The City will submit a "Notice of Termination" form to MPCA terminating its responsibilities as project owner per the terms of the permit (after all the lots are sold).