Guide to STORMWATER MANAGEMENT

Village of Bourbonnais



700 Main Street NW Bourbonnais IL 60914

Phone: (815) 937-3575 Fax (815) 937-5606

www.villageofbourbonnais.com

- 1. Public education and outreach on storm water impacts
- 2. Public Involvement/Participation
- 3. Illicit Discharge Detection and Elimination
- 4. Construction Site Storm Water Runoff Control
- 5. Post-construction storm water management in new development and redevelopment
- 6. Pollution prevention/good housekeeping for municipal operations

Measures:

- 1. Public education and outreach on storm water impacts
 - a. The Guide to Storm Water Management statement is on the Village's website.
 - b. A speaking engagements are conducted in the Village that are open to the public to attend
 - c. Annual Training for all MS\$ employees who manage or are directly involved in the routine maintenance, repair, or replacement of public surfaces in green infrastructure or low impact design techniques.



2. Public Involvement/Participation

- a. The Village works with the Northern Illinois Anglers Association for River and Bank cleanup of the multiple creeks and Kankakee River located in the area.
- b. Kankakee River Metropolitan Agency, which Bourbonnais is a partner within, has a program for household chemical drop-off.
- c. Develop and implement programs to minimize the volume of storm water runoff and pollutants from existing privately owned developed property.
- d. Develop and implement ordinances to address post-construction runoff from new and redevelopment projects.

3. Illicit Discharge Detection and Elimination

- a. The village's public works department investigates citizen complaints regarding illegal discharges to the storm sewer system. Public Works keeps records regarding the investigation results.
- b. In 2013, new storm sewer maps were created and are updated, as needed, by the village. The village sections the village into four parts that are individually targeted and tracked to ensure the integrity of the storm sewer
- c. Each year, one of the four sections of the village's storm sewer system is jetted. This portion of the village is the focus of repairs, to improve the system, as needed.



4. Construction Site Storm Water Runoff Control

- a. The village monitors and requires a NPDES permit for all residential subdivisions within the village by the original developer even if the lots have been sold to private home builders.
- b. Village requires that all empty lots in subdivisions be graded and stabilize the soil until the lots are developed.
- c. Village provides information to the homebuilders the requirements for silt fence installation during the home construction.

- d. Site Inspections are performed during all construction projects to ensure that the Storm Water Plan is being followed.
- e. Village will evaluate every SWPPP submitted to the village for Residential, Commercial and Industrial Construction projects.
- 5. Post-construction storm water management in new development and redevelopment
 - a. Public works maintains all storm water pond maintenance after the improvements are completed and accepted by the Village, by ordinance. Even when a homeowners association exists a drainage/detention easement is provided to the village; in the maintenance is needed. If maintenance is needed, the village has legal right to enter property to complete the necessary repairs.
 - b. Village provides landscaping, cleaning, and insecticide application.
 - c. Public works inspections all outflow devices in the village on an annual basis
 - d. Before and after rain events, the public works employees check storm water outfalls and record finding for maintenance. Maintenance is tracked and evaluated.
 - e. Village employees visit storm water basins, at least, once a week during the year, except during the winter
 - f. Yearly, the outfalls water is sent for testing to ensure no pollutants are entering the natural water ways. Pictures and document is collected concerning the condition such as clarity, smell, and color of the waters from the outfalls.



- 6. Pollution prevention/good housekeeping for municipal operations
 - a. Village vehicles are washed and services in the Public Works office/garage
 - b. Flammable storage cabinet use is standard practice
 - c. Vehicle fluids are stored, used, and then recycled.
 - d. Village has a pesticide application permit
 - e. Street cleaning
 - f. Operations and maintenance procedures for pollution prevention dn good housekeeping are standard operating procedures in the Public Works Department
 - g. Several Public Works Employees are certified in flagging and work zone safety by the State of Illinois

Why do we have to do this program?

- 1. Improve Water Quality
- 2. Enhance Opportunities for Recreation
- 3. Reduce Flood Damage
- 4. Enhanced Aesthetic Value



Photo from Center for Watershed Protection, Manual 9

ARTICLE I. GENERAL PROVISIONS

Introduction.

These Regulations provide for the regulation of matters relative to the management of stormwater within the jurisdiction and its extraterritorial jurisdiction to provide no adverse impact on neighboring property owners. Its provisions include, but are not limited to, regulating drainage installations and improvements, requiring the preservation and enhancement of certain natural environmental features, requiring the installation of drainage improvements in developments, regulating uses, maintenance, and activities in floodplains and flood hazard areas, requiring permits, payment of fees and assurances of completion, and providing for inspections and control of work. The requirements, standards and specifications herein provided are in addition to any other applicable legal requirements.

Authority.

- 1. This storm water management plan shall be known, and may be cited, as the Village of Bourbonnais Stormwater Management Plan.
- 2. The Village of Bourbonnais adopts this storm water management plan pursuant to its authority to regulate stormwater management and govern the location, width, course, and release of all stormwater runoff channels, streams, and basins in the Village. The statutory authority for this storm water management plan is contained in 55 ILCS 5/5-1041, 5-1042, 5-1043, 5-1049, 5-1062.2, 5-1063, 5-1104, 5-12003, 5-15001 *et seq.*, 415 ILCS 5/43, the Federal Water Pollution Control Act including Sec. 402(p) (commonly known as the Clean Water Act), the Federal Register, and other applicable authority, all as amended from time to time.

Purposes.

- 1. To maintain and improve the quality of water impacted by the storm drainage system within the Village of Bourbonnais.
- 2. To promote and protect the public health, safety and general welfare of the citizens from the hazards of flooding.
- 3. To create a set of fair and consistent standards that will facilitate desirable and sustainable development.
- 4. To protect and conserve the natural resources.
- 5. To preserve property values by protecting new and existing buildings and improvements to buildings from damage due to stormwater flow.
- 6. To assure that new developments and redevelopments do not increase flood or drainage hazards to others, or create unstable conditions susceptible to erosion.
- 7. To preserve the natural characteristics of stream corridors in order to moderate flood and stormwater impacts and to protect water quality.

- 8. To prevent the discharge of contaminated stormwater runoff and illicit discharges from industrial, commercial, residential, and construction sites into the storm drainage system.
- 9. To promote public awareness of the hazards involved in the improper discharge of trash, yard waste, lawn chemicals, pet waste, wastewater, oil, petroleum products, cleaning products, paint products, hazardous waste, sediment and other pollutants into the natural and man-made storm drainage system.
- 10. To encourage recycling of used motor oil and safe disposal of other hazardous consumer products.
- 11. To facilitate compliance with state and federal standards and permits by owners of construction sites within the jurisdiction.
- 12. To enable the jurisdiction to comply with all current federal and state laws and regulations applicable to the National Pollutant Discharge Elimination System (NPDES) permitting requirements for stormwater discharges and prepare for future requirements.
- 13. To prevent additional disruption of the economy and governmental services due to stormwater and flood drainage.
- 14. To protect the public from the degradation of water quality on a watershed basis and enhance the quantity and quality of potable groundwater and surface water supplies.
- 15. To protect the quantity and quality of wetlands.
- 16. To require the design and evaluation of each site stormwater management plan to be consistent with watershed capacities.
- 17. To require regular, planned maintenance of stormwater management facilities.
- 18. To encourage cooperation and consistency in stormwater management activities between units of government having floodplain and stormwater jurisdiction.
- 19. To lessen the taxpayer's burden for flood related disasters, repairs to flood damaged public facilities and utilities, and flood rescue and relief operations.
- 20. To restrict development and building to facilities that will not adversely affect the potential for flood damage.
- 21. To require appropriate and adequate provision for site runoff control, especially when the land is developed with a large amount of impervious surface.

Abbreviations.

The following abbreviations when used in this Storm water management plan shall have the designated meanings:

BMP - Best Management Practices

BFE - Base Flood Elevation

CFR - Code of Federal Regulations

CWA - Clean Water Act

FEMA - Federal Emergency Management Agency

FIRM - Flood Insurance Rate Map HHW - Household Hazardous Waste

IDNR - Illinois Department of Natural Resources
 IDPH - Illinois Department of Public Health
 EPA - U.S. Environmental Protection Agency
 IEPA - Illinois Environmental Protection Agency
 MS4 - Municipal Separate Storm Sewer System

NPDES - National Pollutant Discharge Elimination System

NRCS - Natural Resources Conservation Service (formerly SCS)

SCS - Soil Conservation Service (now NRCS)
SWCD - Soil and Water Conservation District
SWP3 - Stormwater Pollution Prevention Plan

USACE - US Army Corps of Engineers USDA - U.S. Department of Agriculture

USEPA - U.S. Environmental Protection Agency

Definitions.

Unless a provision explicitly states otherwise, the following terms and phrases, as used in this Storm water management plan, shall have the meanings hereinafter designated.

- 1. <u>Adverse Impacts</u> are any negative impact on plant, soil, air or water resources affecting quality and quantity and their beneficial uses including recreation, aesthetics and aquatic habitat.
- 2. <u>Agricultural Practices</u> are normal farming, silviculture and ranching activities, such as gardening, plowing, seeding, cultivating and harvesting, for the production of food, fiber, forest products, nursery stock and livestock. Maintenance of agricultural drain tiles, irrigation and drainage ditches, farm roads and other access areas for farm vehicles and equipment use are also included. These practices shall not include grading, filling or draining flood prone areas with greater than 100 acres of tributary area or a regulatory wetland.
- 3. <u>Applicant</u> is any person, firm, or governmental agency who executes the necessary forms to procure official approval of a development or permit to carry out construction of a new development, additions or reconstruction of structures, or re-development from the jurisdiction.
- 4. <u>Appropriate Official</u> is the Village of Bourbonnais Village Administrator or his/her designee.
- 5. <u>Base Flood Elevation</u> (BFE) is the elevation shown on the Flood Insurance Rate Map for Zone AE, AH, A1-A30, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, AR/AO, that indicates the water surface elevation resulting from a flood that has a 1% chance of equaling or exceeding that level in any given year.
- 6. <u>Best Management Practices (BMPs)</u> here refers to management practices and methods to control pollutants in stormwater. BMPs are of two types: "source controls" (nonstructural) and "treatment controls" (structural). Source controls are practices that prevent pollution by reducing potential pollutants at their source before they come into contact with stormwater. Treatment controls partially remove pollutants from stormwater. The selection, application and maintenance of BMPs must be sufficient to prevent or reduce the likelihood of pollutants entering the storm drainage system.
- 7. <u>Buffer</u> is an area of predominately vegetated land to be left open adjacent to channels, wetlands, lakes, ponds, or other surface waters for the purpose of eliminating or minimizing adverse effects to such areas, stabilizing banks, reducing contaminants, including sediments, in stormwater that flows to such areas.
- 8. <u>Building Official</u> is the officer or other designated authority charged with the administration and enforcement of the building codes and regulations.
- 9. <u>Building Permit</u> is a permit issued by the jurisdiction for the construction, erection or alteration of a structure or building and the related ground and surface preparation prior to and after completion of construction, erection or alteration of a structure or building.

- 10. <u>Certify or Certification</u> means formally attesting that the specific inspections and tests were performed, and that such inspections and tests comply with the applicable requirements of this Storm water management plan.
- 11. <u>Channel</u> is any defined river, stream, creek, brook, natural or artificial depression, ponded area, on-stream lake or impoundment, abandoned mine, flowage, slough, ditch, conduit, culvert, gully, ravine, wash, or natural or manmade drainageway, that has a definite bed and bank or shoreline, in or into which surface or groundwater flows, either perennially or intermittently.
- 12. <u>Channel Modification</u> is the alteration of a channel by changing the physical dimensions or materials of its bed or banks. Channel modification includes damming, rip-rapping (or other armoring), filling, widening, deepening, straightening, relocating, lining, and significant removal of bottom or woody rooted vegetation.
- 13. <u>Clearing</u> is any activity that removes the natural vegetative ground cover.
- 14. <u>Commercial</u> means pertaining to any business, trade, industry, or other activity engaged in for profit.
- 15. Compensatory Storage The NFIP floodway standard in 44CFR 60.3 (d) restricts new development from obstructing the flow of water and increasing flood heights. However, this provision does not address the need to maintain flood storage. Especially in flat areas, the floodplain provides a valuable function by storing floodwaters. When fill or buildings are placed in the flood fringe, the flood storage areas are lost and flood heights will go up because there is less room for the floodwaters. This is particularly important in smaller watersheds which respond sooner to changes in the topography. One approach that may be used to address this issue is to require compensatory storage to offset any loss of flood storage capacity. Some communities adopt more restrictive standards that regulate the amount of fill or buildings that can displace floodwater in the flood fringe. Community Rating System credits are available for communities that adopt compensatory storage requirements.
- 16. <u>Conduit</u> is any channel, pipe, sewer or culvert used for the conveyance or movement of water, whether open or closed.
- 17. <u>Construction Site</u> means any location where clearing, grading, excavation, filling, or other construction activity occurs.
- 18. Contaminated means containing harmful quantities of pollutants.
- 19. <u>Contractor</u> means any person or firm performing or managing construction work at a construction site, including any construction manager, general contractor or subcontractor. Also includes, but is not limited to, earthwork, paving, building, plumbing, mechanical, electrical or landscaping contractors, and material suppliers delivering materials to the site.
- 20. <u>Control Structure</u> is a structure designed to control the rate of flow that passes through the structure, given a specific upstream and downstream water surface elevation.
- 21. <u>Dam</u> is defined by the IDNR.

- 22. <u>Detention Basin</u> is a facility constructed or modified to provide for the temporary storage of stormwater runoff and the controlled release of this runoff at a prescribed rate during and after a flood or storm.
- 23. <u>Development</u> is any manmade change to real estate or property, including, but not limited to:
 - a. The division or subdivision of any duly recorded parcel of property.
 - b. Construction, reconstruction or placement of a building or any addition to a building valued at more than one thousand dollars (\$1000).
 - c. Installation of a manufactured home on a site, preparing a site for a manufactured home, or installing a travel trailer on a site for more than 180 days per year.
 - d. Construction of roads, bridges, or similar projects.
 - e. Redevelopment of a site.
 - f. Filling, dredging, grading, clearing, excavating, paving drilling, mining or other non-agricultural disturbance of a ground surface.
 - g. Storage of materials or deposit of solid or liquid waste.
 - h. Any other activity that might alter the magnitude, frequency, direction, or velocity of stormwater flows from a property.
- 24. <u>Discharge</u> means any addition or releases of any pollutant, stormwater or any other substance whatsoever into storm drainage system.
- 25. <u>Discharger</u> means any person who causes, allows, permits, or is otherwise responsible for, a discharge, including, without limitation, any owner of a construction site or industrial facility.
- 26. <u>Domestic Sewage</u> means untreated sewage originating primarily from kitchen, bathroom and laundry sources, including waste from food preparation, dishwashing, garbage grinding, toilets, baths, showers and sinks.
- 27. <u>Drainage Plan</u> is a plan, including engineering drawings and supporting calculations, which describes the existing stormwater drainage system and environmental features, including grading, as well as proposed alterations or changes to the drainage system and environment of a property. The jurisdiction may require that a Drainage Plan include upstream and downstream (offsite) drainage features if it is found that the development would be impacted by these off-site features.
- 28. <u>Dry Bottom Detention Basin</u> is a facility designed to drain after temporary storage of stormwater flows and to normally be dry between runoff events.
- 29. <u>Earthwork</u> means the disturbance of soils on a site associated with clearing, grading, or excavation activities.
- 30. <u>Erosion</u> is the general process whereby soil or earth is moved by rainfall, flowing water, wind or wave action.
- 31. Event is a short duration hydrologic occurrence, such as a period of rainfall or elevated streamflow that is brief in duration allowing certain hydrologic components, such as

- evaporation and arrival times of rainfall, to be neglected. A storm event is normally limited to ten days or less.
- 32. <u>Excavation</u> is any act by which organic matter, earth, sand, gravel, rock or any other similar material, is cut into, dug, quarried, uncovered, removed, displaced, re-located or bulldozed and shall include the conditions resulting from such actions.
- 33. <u>Facility</u> means any building, structure, installation, process, or activity from which there is or may be a discharge of a pollutant.
- 34. <u>Fertilizer</u> means a substance or compound that contains an essential plant nutrient element in a form available to plants and is used primarily for its essential plant nutrient element content in promoting or stimulating growth of a plant or improving the quality of a crop, or a mixture of two or more fertilizers.
- 35. <u>Fill</u> is any act by which earth, sand, gravel, rock, or any other material, is deposited, placed, replaced, pushed, dumped, pulled, transported or moved by man to a new location and shall include the conditions resulting therefrom.
- 36. <u>Floodplain</u> means those lands within the jurisdiction that are subject to inundation by the base flood. The floodplains of the jurisdiction are generally identified as such on the Flood Insurance Rate Maps of the jurisdiction prepared by FEMA.
- 37. Freeboard is a vertical distance between the elevation of the design high-water and the top of a dam, levee, tank, basin, or diversion ridge. The space is required as a safety margin in a pond or basin.
- 38. <u>Garbage</u> means putrescible animal and vegetable waste materials from the handling, preparation, cooking, or consumption of food, including waste materials from markets, storage facilities, and the handling and sale of produce and other food products.
- 39. <u>Grading</u> is the excavation or fill or any combination thereof and shall include the conditions resulting from any excavation or fill.
- 40. <u>Groundwater</u> means any water residing below the surface of the ground or percolating into or out of the ground.
- 41. <u>Harmful Quantity</u> means the amount of any substance that the Appropriate Official determines will cause an adverse impact to storm drainage system or will contribute to the failure of the jurisdiction to meet the water quality based requirements of the NPDES permit for discharges from the regulated MS4.
- 42. Hazardous Substance means any substance listed in Table 302.4 of 40 CFR Part 302.
- 43. <u>Hazardous Waste</u> means any substance identified or listed as a hazardous waste by the EPA pursuant to 40 CFR Part 261.
- 44. <u>Household Hazardous Waste (HHW)</u> means any material generated in a household (including single and multiple residences) that would be classified as hazardous pursuant to the Illinois EPA.

- 45. <u>Hydraulically Equivalent</u> is compensatory storage maintains the existing storage capacity between the normal water level and the ten-year high water level and between the ten year high water level and the 100-year high water level.
- 46. <u>Hydrograph</u> is a graph or tabulation showing for a given location on a stream or conduit, the flow rate with respect to time.
- 47. <u>Hydrograph Method</u> This method estimates runoff volume and runoff hydrographs for the points of interest by generating hydrographs for individual subareas, combining them, and routing them through channels, floodplains, and reservoir structures. Factors such as rainfall depth and temporal distribution, rainfall abstractions, time of concentration, land use characteristics, storage volumes and travel time are included.
- 48. <u>Illegal Discharge</u> See "Illicit Discharge" below.
- 49. <u>Illicit Connection</u> means any drain or conveyance, whether on the surface or subsurface, which allows an illicit discharge to enter the storm drainage system.
- 50. <u>Illicit Discharge</u> means any discharge to the storm drainage system that is prohibited under this Storm water management plan.
- 51. <u>Impervious Surface</u> is that area of property that is covered by materials other than soil and vegetation and that has no intended capacity to absorb stormwater or does not readily absorb or retain water, including but not limited to parking lots, roadways, driveways, sidewalks, patios, tennis courts, roofs and other structures.
- 52. <u>Industrial Waste</u> (or commercial waste) means any wastes produced as a by-product of any industrial, institutional or commercial process or operation, other than domestic sewage.
- 53. <u>Infiltration</u> is the passage or movement of water into the soil.
- 54. Jurisdiction means the jurisdiction of Village of Bourbonnais, IL.
- 55. Lot is an individual platted parcel in an approved subdivision.
- 56. <u>Major Drainage System</u> is that portion of a drainage system needed to store and convey flows beyond the capacity of the minor drainage system. Major Drainage System components include, but are not limited to, detention ponds, dams, roadway culverts, bridges, medium or large open channels, large (trunk) storm sewers and natural overland paths. Major Drainage System components are to be designed to safely convey the 100-year critical duation storm event.
- 57. <u>Mechanical Fluid</u> means any fluid used in the operation and maintenance of machinery, vehicles and any other equipment, including lubricants, antifreeze, petroleum products, oil and fuel.
- 58. <u>Minor Drainage System</u> is that portion of a drainage system designed for the convenience of the public. It consists of street gutters, storm sewers, small open channels, and swales

- and, where manmade, is to be designed to safely convey the stormwater runoff from the 10-year critical duration event recurrence interval storm discharge.
- 59. <u>Mitigation</u> is when the prescribed controls are not sufficient and additional measures are required to offset the development, including those measures necessary to minimize the negative effects which stormwater drainage and development activities might have on the public health, safety and welfare. Examples of mitigation include, but are not limited to compensatory storage, soil erosion and sediment control, channel restoration and wetland creation, enhancement, and restoration.
- 60. <u>Mobile Commercial Cosmetic Cleaning</u> (or mobile washing) means power washing, steam cleaning, and any other method of mobile cosmetic cleaning, of vehicles and/or exterior surfaces, engaged in for commercial purposes or related to a commercial activity.
- 61. <u>Municipal Separate Storm Sewer System (MS4)</u> means the public system of conveyances, including roads, streets, curbs, gutters, ditches, inlets, drains, catch basins, pipes, tunnels, culverts, channels, detention basins and ponds owned and operated by the jurisdiction and designed or used for collecting or conveying stormwater, and not used for collecting or conveying sanitary sewage.
- 62. <u>Natural</u> are conditions existing prior to development resulting from physical, chemical, and biological processes without intervention by man.
- 63. <u>Natural Drainage</u> consists of channels formed in the existing surface topography of the earth prior to or after changes made by unnatural causes.
- 64. <u>National Pollutant Discharge Elimination System</u> (NPDES) is the name of the surface water quality program authorized by Congress as part of the 1987 Clean Water Act. This is the EPA's program to control the discharge of pollutants to the waters of the United States (see 40 CFR 122.2 as amended).
- 65. <u>NPDES Permit</u> means a permit issued by the IEPA that authorizes the discharge of pollutants to Waters of the United States, whether the permit is applicable to an individual, group, or general area-wide basis.
- 66. <u>Notice of Violation</u> means a written notice detailing any violations of this Storm water management plan and any action expected of the violators.
- 67. Oil means any kind of oil in any form, including, but not limited to: petroleum, fuel oil, crude oil, synthetic oil, motor oil, cooking oil, grease, sludge, oil refuse, and oil mixed with waste.
- 68. One Hundred-Year Event is a rainfall, runoff, or flood event having a one percent (1%) probability of being equaled or exceeded in any given year.
- 69. Owner means the person or entity who owns a facility, part of a facility, or land. This includes contiguous lots or parcels of land owned in part or whole by the same property owner.

- 70. <u>Parcel</u> is a contiguous lot or tract of land under single ownership. A lot or tract of land is land intended as a unit for the purpose of development or transfer of ownership.
- 71. <u>Peak Flow</u> is the maximum rate of stormwater flow, for a given storm event, at a given point in a channel or conduit.
- 72. <u>Permittee</u> is any person to whom a building permit or a grading and drainage permit is issued.
- 73. <u>Person</u> means any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity, or any other legal entity; or their legal representatives, agents, or assigns, including all federal, state, and local governmental entities.
- 74. <u>Pesticide</u> means a substance or mixture of substances intended to prevent, destroy, repel, or migrate any pest.
- 75. Pet Waste (or Animal Waste) means excrement and other waste from domestic animals.
- 76. Petroleum Product means a product that is obtained from distilling and processing crude oil and that is capable of being used as a fuel or lubricant in a motor vehicle or aircraft, including motor oil, motor gasoline, gasohol, other alcohol blended fuels, aviation gasoline, kerosene, distillate fuel oil, and #1 and #2 diesel.
- 77. Pollutant means any substance attributable to water pollution, including but not limited to rubbish, garbage, solid waste, litter, debris, yard waste, pesticides, herbicides, fertilizers, pet waste, animal waste, domestic sewage, industrial waste, sanitary sewage, wastewater, septic tank waste, mechanical fluid, oil, motor oil, used oil, grease, petroleum products, antifreeze, surfactants, solvents, detergents, cleaning agents, paint, heavy metals, toxins, household hazardous waste, small quantity generator waste, hazardous substances, hazardous waste, soil and sediment.
- 78. <u>Pollution</u> means the alteration of the physical, thermal, chemical, or biological quality of, or the contamination of, any water that renders the water harmful, detrimental, or injurious to humans, animal life, plant life, property, or public health, safety, or welfare, or impairs the usefulness or the public enjoyment of the water for any lawful or reasonable purpose.
- 79. <u>Positive Drainage</u> is provision for overland paths for all areas of a property including depressional areas that may also be drained by storm sewer.
- 80. <u>Potable Water</u> means water that has been treated to drinking water standards and is safe for human consumption.
- 81. <u>Private Drainage System</u> means all privately or publicly owned ground, surfaces, structures or systems, excluding the regulated MS4, that contribute to or convey stormwater, including but not limited to, roofs, gutters, downspouts, lawns, driveways, pavement, roads, streets, curbs, gutters, ditches, inlets, drains, catch basins, pipes, tunnels, culverts, channels, detention basins, ponds, draws, swales, streams and any ground surface.

- 82. <u>Release</u> means to dump, spill, leak, pump, pour, emit, empty, inject, leach, dispose or otherwise introduce into the storm drainage system.
- 83. <u>Retention Basin or Facility</u> is a facility constructed or modified to store stormwater runoff without release except by means of infiltration and evaporation and without a positive flow outlet.
- 84. Rubbish means non-putrescible solid waste, excluding ashes, that consist of: (A) combustible waste materials, including paper, rags, cartons, wood, excelsior, furniture, rubber, plastics, yard trimmings, leaves, and similar materials; and (B) noncombustible waste materials, including glass, crockery, tin cans, aluminum cans, metal furniture, and similar materials that do not burn at ordinary incinerator temperatures (1600 to 1800 degrees Fahrenheit).
- 85. Runoff is water derived from melting snow or rainfall within a tributary drainage basin that exceeds the infiltration capacity of the soils of that basin.
- 86. <u>Sanitary Sewage</u> means the domestic sewage and/or industrial waste that is discharged into the jurisdiction sanitary sewer system and passes through the sanitary sewer system to the jurisdiction sewage treatment plant for treatment.
- 87. <u>Sanitary Sewer</u> means the system of pipes, conduits, and other conveyances which carry industrial waste and domestic sewage from residential dwellings, commercial buildings, industrial and manufacturing facilities, and institutions, whether treated or untreated, to the jurisdiction sewage treatment plant (and to which stormwater, surface water, and groundwater are not intentionally admitted).
- 88. <u>Sediment</u> means soil, sand, minerals, or other debris that has been disturbed or eroded and transported by water, wind, gravity, or tracked by equipment tires.
- 89. <u>Sedimentation</u> is the process that deposits soils, debris, and other materials either on other ground surfaces or in bodies of water or stormwater drainage systems.
- 90. <u>Septic Tank Waste</u> means any domestic sewage from holding tanks such as vessels, chemical toilets, campers, trailers, septic tanks and aerated tanks.
- 91. Shall means mandatory; may means discretionary.
- 92. <u>Site</u> means the land or water area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.
- 93. <u>Slope Disturbance Line</u> is the line that delineates relatively level building areas from areas where slopes exceed 7 percent (7%) and where special precautions must be taken.
- 94. <u>Small Quantity Generator Waste</u> means any hazardous waste generated by a small quantity generator as defined by the IEPA.
- 95. <u>Solid Waste</u> means any garbage, rubbish, refuse and other discarded material, including solid, liquid, semisolid, or contained gaseous material, resulting from industrial, municipal,

- commercial, construction, mining or agricultural operations, and residential, community and institutional activities.
- 96. <u>State</u> means the State of Illinois.
- 97. <u>Storm Drainage System</u> means all surfaces, structures and systems that contribute to or convey stormwater, including private drainage systems, the MS4, surface water, groundwater, Waters of the State and Waters of the United States.
- 98. <u>Storm Sewer</u> is a closed conduit for conveying collected stormwater.
- 99. Stormwater means runoff resulting from precipitation and snowmelt.
- 100. <u>Stormwater Pollution Prevention Plan (SWP3)</u> means a document that describes the Best Management Practices to be implemented at a site, to prevent or reduce the discharge of pollutants.
- 101. <u>Stream</u> is any river, creek, brook, branch, flowage, ravine, or natural or man-made drainage-way that has a definite bed and banks or shoreline, in or into which surface or groundwater flows, either perennially or intermittently.
- 102. <u>Stripping</u> is any activity that removes the vegetative surface cover including tree removal, by spraying or clearing, and storage or removal of topsoil.
- 103. <u>Subdivision Development</u> includes activities associated with the platting of any parcel of land into two or more lots and includes all construction activity taking place thereon.
- 104. <u>Surface Water</u> means water bodies and any water temporarily residing on the surface of the ground, including wetlands, lakes, reservoirs, rivers, ponds, streams, puddles, channelized flow and runoff.
- 105. <u>Swale</u> is a low lying or depressed area and often wet stretch of land that carries water mainly during rainstorms or snow melts by conveying stormwater from one point to another.
- 106. <u>Time of Concentration</u> is the elapsed time for stormwater to flow from the most hydraulically remote point in a drainage basin to a particular point of interest in that watershed.
- 107. Tributary Area is the area from which water naturally drains by gravity
- 108. <u>Two-Year Event</u> is a runoff, rainfall, or flood event having a fifty percent (50%) probability of being equaled or exceeded in any given year.
- 109. <u>Uncontaminated</u> means not containing harmful quantities of pollutants.
- 110. <u>Used Oil (or Used Motor Oil)</u> means any oil that as a result of use, storage, or handling, has become unsuitable for its original purpose because of impurities or the loss of original properties.

- 111. <u>Utility Agency</u> means private utility companies, jurisdiction departments or contractors working for private utility companies or jurisdiction departments, engaged in the construction or maintenance of utility distribution lines and services, including water, sanitary sewer, storm sewer, electric, gas, telephone, television and communication services.
- 112. <u>Village</u> is the Village of Bourbonnais, Illinois.
- 113. <u>Wastewater</u> means any water or other liquid, other than uncontaminated stormwater, discharged from a facility.
- 114. Water of the State (or water) means any groundwater, percolating or otherwise, lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, inside the territorial limits of the State, and all other bodies of surface water, natural or artificial, navigable or non-navigable, and including the beds and banks of all water courses and bodies of surface water, that are wholly or partially inside or bordering the State or inside the jurisdiction of the State.
- 115. Waters of the United States means all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and the flow of the tide; all interstate waters, including interstate wetlands; all other waters the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce; all impoundments of waters otherwise defined as waters of the United States under this definition; all tributaries of waters identified in this definition; all wetlands adjacent to waters identified in this definition; and any waters within the federal definition of "Waters of the United States" at 40 CFR Section 122.2; but not including any waste treatment systems, treatment ponds, or lagoons designed to meet the requirements of the Federal Clean Water Act.
- 116. <u>Watershed</u> is all land area drained by, or contributing water to, the same channel, lake, marsh, stormwater facility, groundwater or depressional area.
- 117. <u>Wet Bottom Detention Basin</u> is a detention facility designed to maintain a permanent pool of water after the temporary storage of stormwater runoff.
- 118. Wetland is an area that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, under normal conditions, a prevalence of vegetation adapted for life in saturated soil conditions.
- 119. Wetland Detention Basin is a detention facility designed with all or a portion of its bottom area as a wetland.
- 120. <u>Yard Waste</u> means leaves, grass clippings, tree limbs, brush, soil, rocks or debris that result from landscaping, gardening, yard maintenance or land clearing operations.

ARTICLE II. – PROHIBITED ACTIONS

Surface Water.

Surface water shall be allowed to travel its existing or natural course unless changes are allowed by means of a Grading and Drainage Permit or grading and drainage plans approved by the Appropriate Official (70 ILCS 605/Sec. 1/Art. 2).

Easements.

The placement of any landscaping not in compliance with the neighborhood drainage plan for a given property, or any accessory building or structure, swimming pool, fence, or any other improvement which in any way could cause an impediment to the overland flow of stormwater within said drainage easement is hereby prohibited. No buildings or permanent structures, including impervious surfaces, may be placed wholly or in part within an easement that has been granted for drainage facilities of any type or access thereto, including agricultural drainage conduit, without the written approval of the Appropriate Official or easement holder; provided, however, streets, sidewalks and driveways may be allowed to cross easements by the shortest possible route, provided that the flow of the stormwater runoff is not obstructed and the H.W.L. through the easement does not increase as a result.

Obstruction of Watercourse.

It shall be unlawful for any person to cause or maintain any obstruction within a watercourse or drainage facility of any type, except as may be specifically authorized by this Storm water management plan.

Discharge.

No person shall release or cause to be released into the storm drainage system any discharge that is not composed entirely of uncontaminated stormwater, except as allowed in listed exemptions of this Storm water management plan.

Exempted Discharges.

The following discharges are exempt from the regulations in this Storm water management plan:

- 1. Water line and fire hydrant flushing.
- 2. Landscape and lawn watering.
- 3. Rising ground waters.
- 4. Uncontaminated ground water exfiltration, infiltration, or seepage.
- 5. Uncontaminated pumped ground water.
- 6. Discharges from potable water sources (de-chlorinated or de minimus discharge only).
- 7. Uncontaminated foundation drains.

- 8. Air conditioning condensate.
- 9. Irrigation water (except for wastewater irrigation).
- 10. Springs and seeps.
- 11. Water from crawl space pumps.
- 12. Footing drains.
- 13. Water from individual car washing on properties zoned residential.
- 14. Routine external building wash-down which does not use detergents.
- 15. Natural flows from riparian habitats and wetlands.
- 16. De-chlorinated pH neutral swimming pool discharges.
- 17. Residual street wash water.
- 18. Discharges or flows from firefighting activities.
- 19. De-chlorinated water reservoir discharges.
- 20. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed).

Requirements for Certain Discharges.

a. *Contaminated Discharge.* Notwithstanding the listed exemptions of this section, any discharge shall be prohibited by this Storm water management plan if the discharge in question has been determined by Bourbonnais Public Works Department to be contaminated by a harmful quantity of pollutants to the storm drainage system.

The construction, use, maintenance or continued existence of illicit connections to the storm drainage system is prohibited. This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

- b. *Line Connect.* No person shall connect a line conveying sanitary sewage, domestic sewage or industrial waste, to the storm drainage system, or allow such a connection to continue.
- c. *Interference*. No person shall interfere with Best Management Practices (BMPs) implemented pursuant to this Storm water management plan.

Requirements of Certain Discharges.

a. Cleaning of Paved Surfaces Required. The owner of any paved parking lot, street or drive shall clean the pavement as required to prevent the buildup and discharge of pollutants. The visible buildup of mechanical fluid, waste materials, sediment or debris is a violation of this

Storm water management plan. Paved surfaces shall be cleaned by dry sweeping, wet vacuum sweeping, collection and treatment of wash water or other methods in compliance with this Storm water management plan. This section does not apply to pollutants discharged from construction activities, which are otherwise specified.

- b. *Mobile Commercial Cosmetic Cleaning Operations*. Mobile commercial cosmetic cleaning operations shall not discharge to the storm drainage system in violation of this Storm water management plan.
- c. *Maintenance of Equipment*. Any leak or spill related to equipment maintenance in an outdoor, uncovered area shall be contained to prevent the potential release of pollutants. Vehicles, machinery and equipment must be maintained to reduce leaking fluids.
- d. *Materials Storage*. In addition to other requirements of this Storm water management plan, materials shall be stored to prevent the potential release of pollutants. The uncovered, outdoor storage of unsealed containers of hazardous substances is prohibited.
- e. *Pet Waste.* Pet waste shall be disposed of as solid waste or sanitary sewage in a timely manner, to prevent discharge to the storm drainage system.
- f. Pesticides, Herbicides, Insecticides, Fungicides and Fertilizers. Pesticides, herbicides, insecticides, fungicides, and fertilizers shall be applied in accordance with manufacturer recommendations and applicable laws. There shall be no excessive application.
- g. Prohibition on Use of Pesticides, Herbicides, Insecticides and Fungicides Banned from Manufacture. Use of any pesticide, herbicide, insecticides or fungicide, the manufacture of which has been either voluntarily discontinued or prohibited by the U.S. or Illinois Environmental Protection Agency, or any Federal, State or jurisdiction regulation is prohibited.

h. Release Reporting and Cleanup.

- 1 Any person responsible for a known or suspected release of materials which are resulting in or may result in illegal discharges to the storm drainage system shall take all necessary steps to ensure the discovery, containment, abatement and cleanup of such release.
- 2. In the case of environmental emergencies involving oil or hazardous materials releases, fish kills caused by pollutants, or public water supplies immediately contact the Illinois EPA office of Emergency Response at (217) 782-7860 and the National Response Center at (800) 424-8802 or (202) 267-2675.
- 3. This is in addition to other legal reporting requirements. Hazardous waste releases shall be avoided.
- 4. Village of Bourbonnais may adopt and impose requirements identifying Best Management Practices (BMPs) for any activity, operation, or facility, which may cause a discharge of pollutants to the storm drainage system. Where specific BMPs are required, every person undertaking such activity or operation, or owning or operating such facility shall implement and maintain these BMPs at their own expense.

ARTICLE III. – INSPECTIONS AND PLAN MODIFICATIONS

Inspections.

The Village shall make periodic site visits and shall notify the Grading and Drainage Permit holder in the event that the work fails to comply with the requirements of this Storm water management plan. The notification of any deficiencies in the work or violations of this Storm water management plan shall be mailed to the owner of the site and permit holder by ordinary mail. Failure to issue a stop work order shall not be deemed consent by the jurisdiction to continue work nor acceptance of deficiencies nor violations.

The owner of the site shall notify the Appropriate Official:

- 1. Two (2) working days prior to the start of any land disturbing activities.
- 2. Upon the installation of sediment and runoff control measures (including perimeter controls and diversions), prior to proceeding with any other earth disturbance or grading.
- 3. After stripping and clearing.
- 4. After rough grading.
- 5. A minimum of 24 hours notification shall be provided; prior to covering any exposed subgrade, placing any fill, backfilling and sanitary, water, or storm lines, placing base course stone, placing concrete, or placing asphalt.
- 6. Prior to and after completing seeding and landscaping.
- 7. After final stabilization and landscaping and prior to removal of temporary sediment controls.
- 8. Any time during construction that a field tile or any other underground drainage pipes are encountered the Appropriate Official shall be notified. A site meeting shall be conducted with the Village Engineer prior to any disposition being decided. The Village Engineer has the sole authority in determining requirements for any field tile, pipe, etc., encountered during construction.

Special Precautions.

- a. If at any stage of the grading of any development site the Village determines by site visit that the nature of the site is such that further work authorized by an existing permit is likely to imperil any property, public way, stream, lake, wetland, or drainage structure, the Village shall require, as a condition of allowing the work to be done, that such reasonable special precautions be taken, as is considered advisable, to avoid the likelihood of such peril. "Special precautions" may include, but shall not be limited to, a more level exposed slope, construction of additional drainage facilities, berms, terracing, compaction, cribbing, installation of plant materials for erosion control and/or recommendations of a Registered Professional Engineer which may make additional requirements in order for further work.
- b. On large developments or where unusual site conditions occur, the owner shall submit a schedule to be approved by the Appropriate Official that shall specify the starting and completion times of required activity or may require that the operations be conducted in specific stages so as to ensure completion of protective measures or devices prior to the advent of seasonal conditions.
- c. Where it appears that storm damage may result because the grading on any development site is not complete, work shall be stopped and the Grading and Drainage Permit holder required to install temporary structures or take such other measures as may be required to protect adjoining property or the public safety.

Amendment of Plans.

Any significant amendments to grading plans or Stormwater Pollution Prevention Plans shall be submitted to the Appropriate Official of the Village and shall be processed and approved or disapproved in the same manner as the original plans. Any significant field modifications made without prior approval shall be a direct violation of this Storm water management plan

Record drawings.

Upon completion of the improvements, the Licensed Professional Engineer registered in the State of Illinois shall provide a set of as-built plans to the Building Department along with a certification that the completed improvements generally conform to the previously approved plans, specifications and reports.

Reserved.

ARTICLE IV. – RESPONSIBILITY AND FEES

Applicant Responsibility.

The Applicant for a Grading and Drainage Permit shall not be relieved of responsibility for damage to persons or property otherwise imposed by law.

Village of Bourbonnais Responsibility.

- a. The Village of Bourbonnais or its officers or agents, will not be made liable for such damage, by
 - 1. The issuance of a Grading and Drainage Permit under this Storm water management plan
 - 2. Compliance with the provisions of that Grading and Drainage Permit or conditions attached to it by the Appropriate Official
 - 3. Failure of the Village of Bourbonnais to observe or recognize hazardous or unsightly conditions
 - 4. Failure of the Village of Bourbonnais officials to recommend denial or to deny a Grading and Drainage Permit
 - 5. Exemptions from Grading and Drainage Permit requirements of this Storm water management plan
 - 6. Failure to perform site visit(s)
- b. The Village of Bourbonnais shall take into account storm and flood hazards, to the extent they are known or can be determined, in all official actions related to land management, land use and land development or redevelopment as required in the Village of Bourbonnais Code of Ordinances, Chapter 12, "Flood Damage Prevention".
- c. The Village of Bourbonnais is not responsible for work stop/start, means/methods, or job safety.

Fees.

There is no fee for a Class 1 or Class 2 Grading and Drainage Permit.

Fee in Lieu of Detention.

1. For the purpose of satisfying the requirements for stormwater detention or compensatory storage for a development or redevelopment on a property for which detention or compensatory storage was not previously provided, a fee in lieu of

detention or compensatory storage may be assessed against the development prior to the issuance of a permit. Fees shall be calculated to establish the property's fair share of costs to provide detention or compensatory storage for the watershed or drainage basin in which the property exists. The cost figures used for detention shall be actual costs for detention or compensatory storage being provided by contract or estimated costs for planned detention or compensatory storage facilities approved by the Village Board of Trustees. All revenues received through such fees shall be used for no purpose other than defraying public costs associated with providing regional detention or compensatory storage facilities.

2. The Village of Bourbonnais also may require a fee for each acre-foot of detention needed in lieu of the Applicant building a basin on site, provided the property will discharge stormwater into existing or proposed detention facilities with added capacity for the additional runoff.

Ownership and Maintenance of Drainage Facilities.

- a. The Village of Bourbonnais will maintain those drainage facilities that are on public land and have been dedicated and accepted for maintenance or stipulated by agreement for maintenance by the Village of Bourbonnais. All other drainage facilities, when located on other than public property, shall be the responsibility of the owner of the property on which they exist or the owner of the drainage facility, regardless of whether or not dedicated easements exist over said facilities.
- b. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and appropriate quality assurance procedures.
- c. Abandonment and alteration, either structural or operational, of any facilities and systems shall occur only following application and issuance of a permit.

Private Drainage System Maintenance.

The owner of any private drainage system shall maintain the system in accordance with applicable permits to prevent or reduce the discharge of pollutants. This maintenance shall include, but is not limited to, sediment removal, bank erosion repairs, maintenance of vegetative cover, and removal of debris from pipes and structures.

Open Drainage Channel Maintenance.

Every person owning or occupying property through which an open drainage channel passes shall keep and maintain that part of the drainage channel within the property free of trash, debris, excessive vegetation and other obstacles that would pollute, contaminate, or retard the flow of water through the drainage channel. In addition, the owner or occupant shall maintain existing privately owned structures adjacent to a drainage channel, so that such structures will not become a hazard to the use, function, or physical integrity of the drainage channel. Physical modifications to the drainage channel, other than those necessary to remove debris and other obstacles, are prohibited without a Grading and Drainage Permit and the other applicable permits.

Ownership.

Detention basins are owned and maintained by the property owner, unless otherwise described by this Storm water management plan or indicated by the Appropriate Official.

Property Developers shall contact the Appropriate Official to inquire about the ownership and maintenance responsibility of existing regional detention basins which may affect the development.

Detention Basin Maintenance and Repair Responsibilities.

- 1. Detention basins and associated inflow and outflow systems are maintained by the property owner absent any specific legal agreement to the contrary.
- 2. Maintenance agreements may be required at the option of the Appropriate Official to define parties responsible for the maintenance of detention basins.
- 3. The detention basin owner shall be responsible for the following items:
 - a. At five (5) year intervals, the detention basin shall be inspected by a Licensed Professional Engineer registered in the State of Illinois. A report of this inspection shall be submitted to the Appropriate Official within sixty (60) days of the inspection
 - b. Detention basin owners shall notify subsequent owners of their maintenance responsibilities and transfer basin maintenance records to the party with active maintenance responsibility.
 - c. These requirements shall be effective only for facilities constructed after the passage of this storm water management plan.

Maintenance Considerations.

- a. It should be noted that many BMPs require regular maintenance in order to function adequately throughout their design life. Design provisions shall be made to minimize long-term maintenance requirements. In some situations, specific BMPs may be rejected if projected maintenance requirements cannot be met by the property owner, or if the Village of Bourbonnais determines the proposed BMP is too cumbersome, requires extensive maintenance or excess cost.
- b. The stormwater drainage system shall be designed to minimize and facilitate maintenance. Use of native vegetation is strongly encouraged to reduce maintenance, increase wildlife habitat, and to provide other benefits. Wet bottom detention basins shall be provided with alternate outflows, which can be used to completely drain the pool for sediment removal where on-site topography allows. Pumping may be considered if drainage by gravity is not feasible. Pre-sedimentation basins shall be included, where feasible, for localizing sediment deposition and removal. Site access for heavy equipment shall be provided.
- c. Long-term maintenance also shall include the routine removal of trash, debris, and obstructions from the basin outlet structure. Periodic removal of accumulated sediment (e.g., from swales and settling basins) also shall be done to maintain the function and aesthetics of stormwater facilities. At a minimum, sediment shall be removed from trapping devices whenever one foot or more of sediment has accumulated in the basin bottom. Naturally landscaped areas of detention and drainage facilities shall be maintained via controlled burning every one to three years, as needed to control invasive weeds. Where controlled burning is not feasible or allowed, mowing and/or selective herbicide applications shall be performed as needed on an annual basis. All turfed areas shall be mowed on a regular basis to maintain grass height as established by the Village of Bourbonnais.
- d. A maintenance plan meeting the requirements of the Maintenance Considerations Section shall be submitted to the Village of Bourbonnais prior to the issuance of a Drainage and Grading Permit.

Procedures for Receipt and Consideration of Information by the Public.

Village of Bourbonnais shall establish and publicize procedures for receipt and consideration of information regarding non-compliance of provisions in this Storm water management plan.

Right of Entry and Sampling.

- 1. Whenever the Appropriate Official has cause to believe that there exists, or potentially exists, in or upon any premises any condition which constitutes a violation of this Storm water management plan, the Appropriate Official shall have the right to enter the premises at any time to determine if the discharger is complying with all requirements of this article. In the event that the owner or occupant refuses entry after a request to enter has been made, the jurisdiction is hereby empowered to seek assistance from a court of competent jurisdiction in obtaining such entry.
- 2. The Appropriate Official shall have the right to set up on the property of any discharger to the storm drainage system such devices that are necessary to conduct sampling of discharges.

Notice of Violation.

- a. Whenever the Appropriate Official determines that a person has violated or failed to meet a requirement of this Storm water management plan, said Appropriate Official will order compliance by written Notice of Violation to the responsible person and property owner. Posting the written notice on the property will constitute written notice. A copy of the Notice of Violation will be mailed by ordinary mail to the address of the responsible person or property owner of record.
- b. The Notice of Violation shall include:
 - 1. The name of the responsible person and property owner.
 - 2. The date and location of the violation.
 - 3. A description of the violation.
 - 4. Actions that must be taken by the responsible person to remedy the violation.
 - 5. The deadline within which the required actions must be completed.
 - 6. Enforcement actions that may be taken by the jurisdiction.
 - 7. Notice date.
 - 8. A statement that any person receiving a Notice of Violation may file a written appeal of the Notice to the Appropriate Official within fifteen (15) days of the Notice date. The Appropriate Official will affirm, modify or rescind the Notice in writing, within 15 days of the date of the appeal. If the recipient of a Notice of Violation is dissatisfied with the outcome of the appeal to the Appropriate Official, the appeal process outlined in the Appeals section, will be followed.

Action without Notice of Violation.

Enforcement actions identified in this Storm water management plan can be made by the Village of Bourbonnais when necessary to stop an actual or threatened discharge that presents or may present imminent danger to the environment or property or to the health or welfare of persons or to the storm drainage system.

Enforcement Actions.

Any person, who fails to comply with or appeal a Notice of Violation or fails to comply with an appeal decision of the appropriate authority, will be subject to one or more of the following enforcement actions:

- 1. Stop Work Order. The Appropriate Official may issue a stop work order to the owner and contractors on a construction site, by posting the order at the construction site and distributing the order to all jurisdiction departments whose decisions may affect any activity at the site. Unless express written exception is made, the stop work order shall prohibit any further construction activity at the site and shall bar any further inspection or approval necessary to commence or continue construction or to assume occupancy at the site. A Notice of Violation shall accompany the stop work order, and shall define the compliance requirements.
- 2. <u>Abatement of an Illicit Connection</u>. The Appropriate Official may order jurisdiction representatives to terminate an illicit connection. Any expense related to such abatement by jurisdiction representatives shall be fully reimbursed by the property owner.
- 3. <u>Abatement of a Violation on Private Property</u>. When a property owner is not available, not able or not willing to correct a violation, the Appropriate Official may order Village representatives or agents to enter private property to take any and all measures necessary to abate the violation. It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow Village of Bourbonnais representatives to enter upon the premises for these purposes. Any expense related to such abatement by Village representatives shall be fully reimbursed by the property owner.
- 4. Recovery of Costs. Within thirty (30) days after abatement by jurisdiction representatives, the Appropriate Official shall notify the property owner of the costs of abatement, including administrative costs, and the deadline for payment. The property owner may appeal the recovery costs as outlined in the appears section of this Storm water management plan.
- 5. <u>Termination of Utility Services</u>. After lawful notice to the customer and property owner concerning the proposed disconnection, the Appropriate Official shall have the authority to order the disconnection of jurisdiction water, sanitary sewer and/or sanitation services, upon a finding by the Village that the disconnection of utility services will remove a violation of this Storm water management plan that poses a public health hazard or environmental hazard.
- 6. <u>Criminal Prosecution</u>. Any person who violates or continues to violate a prohibition or requirement of this Storm water management plan shall be liable to criminal prosecution to the fullest extent of the law, and shall be subject to criminal penalties.

Criminal Penalties.

Any person violating this Storm water management plan shall, upon an adjudication of guilt or a plea of no contest, be fined a maximum of \$1,000. Each separate day on which a violation is committed or continues shall constitute a separate offense.

Violations of this Storm water management plan by any person or entity shall be guilty of a petty offense.

Other Legal Action.

Notwithstanding any other criminal or civil remedies or procedures available to the Village, if any person violates this Storm water management plan, the Village of Bourbonnais Village Attorney may commence an action for appropriate legal and equitable relief including damages and court costs. The Village Attorney may seek an emergency preliminary or permanent injunction or both which restrains or compels the activities on the part of the discharger.

Abrogation and Greater Restrictions.

This Storm water management plan is not intended to repeal, abrogate or impair any existing easements, covenants, or deed restrictions. Where this Storm water management plan and other ordinance, easements, covenants, or deed restrictions conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

Separability.

The provisions and sections of this Storm water management plan shall be deemed separable and the invalidity of any portion of this Storm water management plan shall not affect the validity of the remainder.

Implementation.

This Storm water management plan is effective upon passage with the following exceptions:

A. Subdivision Improvements

The requirements for obtaining a Grading and Drainage Permit are waived if the preliminary plat of a subdivision was approved by the Village prior to the passage of this Storm water management plan. All other requirements of the Storm water management plan shall remain in effect.

B. Non-Subdivision Improvements Requiring a Building Permit

The requirements for obtaining a Grading and Drainage Permit for non-subdivision related improvements requiring a building are waived for the duration of the building permit if the building permit was issued prior to the passage of this Storm water management plan. All other requirements of the Storm water management plan shall remain in effect.

C. Improvements that Previously Did Not Require a Permit

The requirements for obtaining a Grading and Drainage Permit for construction that did not require a permit prior to passage of this Storm water management plan are waived for a period of one (1) year if the construction commenced prior to the passage of this Storm water management plan. All other requirements of the Storm water management plan shall remain in effect.

Variances and Appeals.

Village of Bourbonnais, after a public hearing, may:

a. Determine and vary the requirements and regulations of this Storm water management plan in harmony with their general purpose and intent, where the appropriate entity makes written findings of fact in accordance with the standards herein after prescribed and further, find that there are practical difficulties or particular hardships in the way of

- carrying out the strict letter of requirements and regulations of this Storm water management plan and
- b. Uphold, modify or overrule the decision of the Appropriate Official.
- c. A written application for a variance from the requirements of this Storm water management plan or an appeal of a decision by the Appropriate Official, shall be filed within thirty (30) days of the time when a reasonably prudent person should have become aware of the need or when owner, contractor, lessee, or operator was first made aware of the need for the variance or the decision of the Appropriate Official. The application shall fully state the grounds of the request and the facts relied upon by the Applicant. Said application for a variance shall be verified by an Illinois Licensed Professional Engineer. Each application shall be filed with the Appropriate Official or the Building Department. The Appropriate Official will review and transmit recommendations to the Planning Commission, which shall review such recommendations prior to granting or denying the variance.

Minutes of the hearing process shall be recorded and written findings shall be made on each of the criteria and made public for all variance decisions, and shall be filed with the Village Clerk. The costs of the hearing shall be born by the Applicant.

Variances.

The Village of Bourbonnais shall not vary the requirements and regulations of this Storm water management plan unless evidence is presented that prove that:

- 1. The land in question is of such shape or size or is affected by such physical conditions or is subject to such title limitations or record, that it is impossible or impractical for the Applicant to comply with all of the requirements of this Storm water management plan and
- 2. The granting of the variance will not be detrimental to the public welfare, environment or injurious to other property in the vicinity of the subject property and is unique to the subject site and not generally applicable to other properties in the Village.
- 3. The Planning Commission shall hold a public hearing on each application for variance within thirty (30) days after receipt of the application for a variance. The Applicant of the variance shall notify all adjoining property owners by certified mail, return receipt requested, no later than five (5) prior to the hearing date. Said notice shall include contact information, the time, date, and place of the hearing, and reason for the variance request. The Building Department has the authority to require additional property owners to be notified, if he/she deems it appropriate and necessary. Within thirty (30) days after the public hearing, the Planning Commission shall approve the variance with the conditions it deems necessary, disapprove the variance or take other such action as appropriate.
- 4. Post construction site peak runoff rate control for sites discharging directly to the Kankakee River are unnecessary because: (1) no adverse flooding impacts would potentially be created by increased peak runoff rates along the conveyance between the project site and the River and (2) increased peak runoff rates will not potentially contribute to adverse ecological impacts, including water quality degradation by either artificial or natural mechanisms or by stream erosion. This exemption does not relieve the property owner from constructing and maintaining a sediment trapping BMP

following Illinois Urban Manual criteria during construction and a permanent detention facility meeting requirements in this Storm water management plan.

Appeals.

Village of Bourbonnais shall consider each application for modification, to the decision of the Appropriate Official, at a public meeting within thirty (30) days after the appeal application is received by the Village. Within thirty (30) days after the public meeting, Planning Commission shall uphold, modify or overrule the decision of the Appropriate Official.

ARTICLE V. – DISCHARGE CONTROL

General Requirements for All Construction Sites.

- A. Owner Responsibility. The owner of a site with construction activity meeting the requirements of a Grading and Drainage Permit shall be responsible for compliance with the requirements of this Storm water management plan.
- B. Waste Disposal. Solid waste, industrial waste, yard waste and any other pollutants or waste on any construction site shall be controlled through the use of BMPs. Waste or recycling containers shall be provided and maintained by the owner or contractor on construction sites where there is the potential for release of waste. Uncontained waste that may blow, wash or otherwise be released from the site is prohibited.
- C. *Ready-Mixed Concrete*. Ready-mixed concrete, or any materials resulting from the cleaning of vehicles or equipment containing or used in transporting or applying ready-mixed concrete, shall be contained on construction sites for proper disposal. Release of these materials to any elements of the storm drainage system is prohibited.
- D. Soil Erosion and Sediment Control. Appropriate BMPs such as silt fences, diversions, sediment traps, or other appropriate sediment or runoff control measures shall be implemented to prevent the release of sediment from construction sites prior to the commencement of grading activities. Disturbed areas should be minimized, disturbed soil shall be protected and stabilized and construction entrances shall be managed to prevent sediment tracking onto adjacent roadways. Sediment tracked onto public streets shall be removed immediately. Disturbed areas shall be stabilized with approved vegetative measures within fourteen (14) calendar days following the end of active disturbance or redisturbance. All temporary soil erosion and sediment control BMPs shall remain in place, and be fully maintained, until the establishment of permanent vegetation throughout the construction site at which time they shall be removed within thirty (30) days. Consideration shall be given to environmentally sensitive areas based on slope, soil type, vegetation and proximity to a water body.
- E. *Continued Compliance*. Upon completion of permitted construction activity on any site, the property owner and subsequent property owners will be responsible for continued compliance with the requirements of this Storm water management plan, in the course of maintenance, reconstruction or any other construction activity on the site.
- F. Rights Reserved. Village of Bourbonnais reserves the right to require any non-agricultural construction development activity, regardless of disturbed area or type of activity, to

comply with this Storm water management plan if it is determined to be the cause of or a contributor to an existing or potential erosion, sediment, or stormwater impact.

ARTICLE VI. – PERMITS AND PLANS

Permit Exceptions.

- A. Except as exempted below, no person shall commence construction prior to obtaining the appropriate Grading and Drainage Permit as defined below. The Building Department will issue Grading and Drainage Permits.
- B. In order to preclude inappropriate phasing of developments to circumvent the intent of this Storm water management plan, when a proposed development activity will occur on a lot or parcel of land that has contiguous lots or parcels of lands owned by the same property owner, then the criteria as defined in this section will be applied to the total land area compiled from aggregate ownership parcels.
- C. A Grading and Drainage Permit shall not be required for the following:
 - 1. Any construction activity below the minimum thresholds for a Class 1 Grading and Drainage Permit.
 - 2. Agricultural practices, including the implementation of conservation measures included in a farm conservation plan approved by the Natural Resources Conservation Service.
 - 3. Construction of a single-family dwellings and duplex with a subdivision with an approved neighborhood drainage plan and SWP3.

Thresholds for Class 1 Grading and Drainage Permit.

All construction except single-family residential and duplexes that meets one of the following thresholds shall require a Class 1 grading and Drainage Permit:

- 1. Any construction that will require a variance to an existing rule or regulation regarding coverage or impervious surface including the addition of an impervious surface area (i.e., streets, roof, patio or parking area or any combination thereof) greater than 500 square feet and less than 10,000 square feet requires a Class 1 Grading and Drainage Permit.
- 2. Construction of one or more single-family dwellings or duplexes that is/are constructed as part of a subdivision development or on an individual parcel without an approved neighborhood drainage plan or SWP3.
- 3. Any land disturbing activity (i.e., clearing, grading, stripping, excavation, fill, or any combination thereof) that will affect an area in excess of 5000 square feet, unless the activity solely consists of:
 - a. The installation, renovation or replacement of a septic system, potable water service line or other utility serving an existing structure.
 - b. The excavation or removal of vegetation in right-of-way or public utility easements for the purpose of installing or maintaining utilities.

- c. The maintenance, repair or at grade replacement or existing lawn areas not otherwise requiring a stormwater permit under this storm water management plan.
- d. The maintenance or an existing stormwater facility, not requiring other state or federal permits or approvals.
- 4. Any land disturbing activity that will affect an area in excess of 500 square feet if the activity is within 25 feet of a lake, pond, stream, or wetland; or
- 5. Excavation, fill, or any combination thereof that will exceed 100 cubic yards.
- 6. The issuance of a Grading and Drainage Permit shall constitute an authorization to do only that work which is described on the approved site plan. A Class 1 Grading and Drainage Permit shall be valid for one (1) year after the date of issuance.

Class 1 Grading and Drainage Permit Application Forms.

A completed application form for Class 1 Grading and Drainage Permit shall include:

- 1. Name(s), address and telephone number(s) of the owner and Developer of the site, the contractor(s) and of any consulting firm retained by the Applicant identifying the principal contractor.
- 2. Certification that all construction covered by the Grading and Drainage Permit will be undertaken in compliance with General Requirements for All Construction Sites Section.
- 3. A site plan created with the use of a worksheet available from Kankakee County Soil and Water Conservation District, or other suitable methods acceptable to the Building Department showing the amount of impervious area being created and BMPs to be implemented. For Class 1 Permits, stormwater detention calculations may be required with the site plan.
- 4. An application fee is set forth in fees section of this storm water management plan.

Class 2 Grading and Drainage Permit.

Any construction that meets one of the following thresholds shall require a Class 2 Grading and Drainage Permit:

- 1. Any construction that will include the addition of an impervious surface area (i.e., streets, roof, patio or parking area or any combination thereof) greater than 10,000 square feet.
- 2. Any land disturbing activity (i.e., clearing, grading, stripping, excavation, fill, or any combination thereof) that will affect an area greater than one acre (43,560 square feet).

Class 2 Grading and Drainage Permit Application Requirements.

A completed application form for a Class 2 Grading and Drainage Permit shall include the following as applicable:

1. Name, address and telephone number of the owner and Developer of the site, and of any consulting firm retained by the Applicant (identifying the principal contractor).

- 2. Certification that any land clearing, construction, or development involving the movement of earth shall be in accordance with the plans approved upon issuance of the permit.
- 3. An application fee as set forth in the fees Section of this Storm water management plan.
- 4. A performance bond or letter of credit may be required as specified by the Appropriate Official.
- 5. A Site Development Plan (SDP) for single lot projects or Subdivision Final Engineering Plans (FEP) for multi-lot projects or planned developments. The SDP or FEP shall include the following:
 - a. Property boundary, dimensions, one-foot topographic contours and approximate acreage.
 - b. Existing topographic elevation data in the form of spot elevations and one-foot vertical interval contour lines based on reported USGS Benchmark datum. (Also reference approved Neighborhood Drainage Plans.)
 - c. Proposed elevations to all building floors, entrances, walks, curbs, pavement, earth areas, rims, etc. Proposed elevations should be presented as proposed spot grades and one-foot vertical interval contour lines as required to adequately describe the proposed grading and drainage work. (Also reference approved Neighborhood Drainage Plans.)
 - d. Building setback lines
 - e. All existing and proposed structures and sizes.
 - f. Proposed elevation of first floor and lowest opening in foundation for all structures.
 - g. Square feet of existing and proposed impervious surface.
 - h. All existing or proposed easements.
 - i. All existing, observed, or proposed water or monitoring well head locations.
 - j. All existing, observed, or proposed water mains.
 - k. All sanitary or combined sewer lines and septic systems.
 - 1. The top of banks, centerline and toe of streams, channels and swales.
 - m. Shoreline of lakes, ponds, and detention basins with normal water level elevation.
 - n. Location, size and slope of stormwater conduits and drainage swales.
 - Detention facilities showing inlet and outlet locations, overflow weir location and details.
 - p. Roads, streets and associated stormwater inlets including finished grades.
 - q. Base flood elevation, flood fringe, areas of inundation, regulatory floodway for Special flood Hazard Areas, high water levels and limits for other waterways with a watershed area of 100 acres or more.
 - r. A vicinity map showing the relationship of the site to its general surroundings at a scale of not greater than two thousand (2,000) feet to one (1) inch (1:24,000).
 - s. Title, scale, north arrow, legend, date, and name of person preparing plans.
 - t. The seal and signature of a Professional Engineer licensed in the State of Illinois.
 - u. Subwatershed boundaries within the property.
 - v. Offsite areas draining to property, including entire offsite drainage boundary(ies).

- w. Depressional storage areas, including non-jurisdictional wetlands.
- x. A depiction of environmental features of the property and immediate vicinity including the following:
 - i. The limits of wetland areas.
 - ii. Any designated natural areas or prime farmland so designated by the Federal, State, or County government.
 - iii. Any proposed environmental mitigation features.
 - iv. Location and dimensions of any buffer area
 - v. Observed abandoned mines or any other obvious evidence of previous use.
- y. Inventory of farm drains and tiles performed by a qualified individual or firm including the following:
 - i. Name, address and phone number of person conducting the inventory
 - ii. Maps/aerial photographs depicting the location and area(s) served by identified tile drains
 - iii. Identify known Drainage Districts
 - iv. Owners of adjacent land drained and/or potentially drained by identified drain tiles
 - v. Consultation with Natural Resource Construction Services/Kankakee County Soil and Water Conservation District
- z. Soil classifications.
- 6. A report describing and detailing the basis of design for the drainage system. This report shall include:
 - a. A marked copy of the SDP or FEP indicating the tributary area for all major and minor drainage system components. This shall be accompanied by appropriate mapping sources utilized to identify off-site areas tributary to the permitted project drainage system.
 - b. Design calculations and other submittals as required by this Storm water management plan, including flow rates and velocities at critical points in the drainage system.
 - c. A marked copy of the SDP or FEP indicating areas that may pond (do not have positive drainage) if the storm sewer is blocked.
 - d. The Hydrologic analysis shall be completed in accordance with Article VIII of this Storm water management plan (Hydrologic Design Criteria). The drainage system design shall be completed in accordance with Article VIII of this Storm water management plan.
 - e. If the project involves modification of a channel with an upstream watershed exceeding 100-acres or where On-Stream Detention is proposed, the following information shall be submitted:
 - i. A discussion of the purpose and need for the proposed work.
 - ii. Analysis of the impacts of the proposed project, considering cumulative effects on flood storage and the physical and biological conditions of the body of water affected.
 - iii. Hydraulic analysis of the channel modifications, including pre- and postproject base flood elevations.

- iv. Additional information as required by this Storm water management plan.
- f. A statement of certification of all drainage plans, calculations, and supporting data signed and sealed by a Professional Engineer Licensed in the state of Illinois.
- 7. A Conditional Letter of Map Change (CLOMC) or Letter of Map Change (LOMC) for any Special Flood Hazard Area (SFHA), for which no Base Flood Elevation has been determined, that may potentially impact the permitted project.
- 8. A Conditional Letter of Map Change (CLOMC) or Letter of Map Change (LOMC) for all Special Flood Hazard Areas (SFHA) whose limits are impacted by the permitted project.
- 9. Stormwater Pollution Prevention Plan (SWP3) prepared in accordance with Article VIII of this Storm water management plan.
- 10. A Maintenance Plan in accordance with the Maintenance Considerations Section.

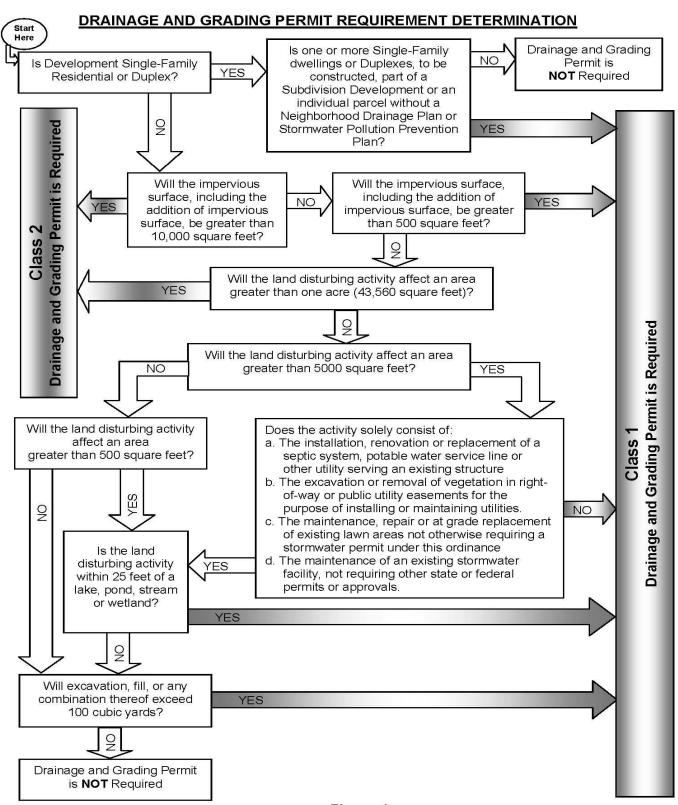


Figure 1

Submittal, Review, Approval, and Periodic Visits.

A completed application shall be submitted to the Village of Bourbonnais Building Department for review and approval. Village officials may periodically follow up during consideration.

- 1. Submittal. The completed application shall be submitted with the building permit application where work is related to construction of a new building or building addition. The completed application shall be submitted with the final engineering plans and specifications or subdivision improvement plans where work is related to the development and subdivision of land. The Village of Bourbonnais should be consulted regarding application submittal for other types of work requiring a Grading and Drainage Permit.
- 2. Review/Approval. Each application for a Grading and Drainage Permit shall be reviewed and acted upon according to the following procedures.
 - a. The Village may provide a written evaluation to the Applicant regarding the adequacy and effectiveness of the proposal to address the provisions of this Storm water management plan. The Village may retain the services of an independent professional to perform this evaluation. The Village may assess a fee for this evaluation service as set forth in Article IV of this Storm water management plan.
 - b. The Village may provide the Applicant with general guidelines and information concerning the design criteria, installation, maintenance procedures and other information regarding best management practices recommended under the provisions of this Storm water management plan.
 - c. The Applicant shall provide proof that a Notice of Intent (NOI) has been submitted to the IEPA for construction site activities and all appropriate permit fees have been paid.
 - d. Approval of a Grading and Drainage Permit shall not be considered effective unless the following approvals have been obtained if applicable:
 - 1. Land use regulations, such as zoning and subdivision regulations, that apply to the development have been approved by the Village where applicable.
 - 2. A building permit issued by the Village's Building Department where applicable.
 - 3. The proposed earth moving is coordinated with any overall development program previously approved by the Village for the area in which the site is permitted.
 - 4. All other relevant federal, state, and local permits controlling the proposed work.
 - e. After review of the application and required submissions if it is found to be in conformance with the provisions of this Storm water management plan, the Appropriate Official shall either:
 - 1. Approve the Grading and Drainage Permit, or
 - 2. Approve the Grading and Drainage Permit subject to such reasonable conditions as may be necessary to secure substantially the objectives of this Storm water management plan, or
 - 3. Disapprove the Grading and Drainage Permit, indicating the deficiencies and the procedure for submitting a revised application and/or submission.

- f. Failure of the Village to act on an original or revised application within sixty (60) days of receipt shall authorize the Applicant to proceed in accordance with the plans as filed and in compliance with the regulations contained herein, unless such time is extended by agreement between the Appropriate Official and the Applicant. Pending preparation and approval of a revised plan, development activities may be allowed to proceed in accordance with conditions established by the Village.
- 3. Periodic Site Visits. The Appropriate Official may conduct periodic sites visits to observe construction or conduct field meetings with the Applicant and his/her contractor(s) as follows:
 - a. The Village may require a pre-construction meeting with the Applicant or designated agent to review implementation of Grading and Drainage Permit.
 - b. The Village may conduct period onsite observations during the active construction phases or development projects to determine whether site development is in compliance with the approved Grading and Drainage Permit.
 - c. After construction has been completed the Village may visit the site to determine whether permanent site stabilization has been achieved and identify operation and maintenance needs.
 - d. The Village shall prepare correspondence as needed regarding the effectiveness (or corrective measures needed) or adequacy of soil erosion and sediment control measures.

Other Agency Permits and Reviews.

- 1. The acquisition of any and all permits shall be the sole responsibility of the Applicant. Copies of the permit applications, permits, and correspondence shall be provided with the application. The granting of a Grading and Drainage Permit under these regulations shall in no way affect the owner's responsibility to obtain the approval required by any other statute, ordinance or code, or to meet the requirements of other jurisdiction ordinances and regulations, including but not limited to:
 - a. Building or other relevant permits of the Village;
 - b. Permits in accordance with Sections 401 and 404 of the Clean Water Act; 33 U.S.C. Section 1251, including any joint permit application requirements (e.g., Floodway Construction Permit form IDNR-OWR);
 - c. Permits in accordance with Section 106 of the National Historic Preservation Act;
 - d. Permits required under Section 10 of the Rivers and Harbors Act;
 - e. Permits required by the Illinois Department of Natural Resources, Office of Water Resources in accordance with the Rivers, Lakes and Streams Act, 615 ILCS 5/18, 23, 23(a) and 29(a), and consistent with any applicable regulations including those found at 17 Ill. Adm. Code Parts 3700, 3702, and 3704;

- f. A Natural Resources Information (NRI) report prepared by the Kankakee County SWCD under Section 22.02a of the Soil and Water Conservation Districts Act, 70 ILCS Par. 405/1 et.seq.;
- g. Any reviews required by the Farmland Preservation Act, 505 ILCS 75/6;
- h. Any reviews required by the Illinois Groundwater Protection Act, 415 ILCS;
- i. Any permits that may be required by the Illinois Environmental Protection Act, 415 ILCS 5/12 et.seq., including any permits under National Pollutant Discharge Elimination System (NPDES) Permit (e.g. ILR10 and ILR 40 permits) and 401 Water Quality Certification through the Illinois Environmental Protection Agency, Division of Water Pollution Control, 415 ILCS 5/12 (f);
- j. Any reviews required by the Threatened and Endangered Species Act, 16 USC 1531 et.seq.;
- k. Any reviews required by the Illinois Endangered Species Protection Act, 520 ILCS 10/11;
- 1. Conditional Letter of Map Revision, 44 CFR 60;
- m. Approval/permit from local Flood Insurance Program community;
- n. Any reviews by the Illinois Interagency Wetland Policy Act of 1989. 20 ILCS 830/1; and,
- o. Illinois Natural Areas Preservation Act, 525 ILCS 30/17.
- 2. Any work involving the construction, modification or removal of a dam as defined herein, per 92 Ill. Adm. Code 702 (Rules for Construction of Dams), shall require an IDNR/OWR Dam Safety Permit or a letter stating that a permit is not required, prior to permit being issued by the Village of Bourbonnais.
- 3. Any development involving work in waters of the United States, including wetlands and streams as identified and regulated by the U.S. Army Corps of Engineers, shall require permits or sign-offs from the Corps prior to the issuance of a jurisdiction permit.
- 4. Confirmation of compliance or exemption from all applicable entities requiring permits or reviews shall be provided by the Applicant to the Village.

Permit Limitations.

- 1. The issuance of a Grading and Drainage Permit shall constitute an authorization to do only that work which is described or illustrated on the application for the permit or on the plans and specifications approved by Village of Bourbonnais.
- 2. The issuance of a permit or the approval of drawings and specifications shall not be construed to be a permit for, nor an approval of, any violation of or deviation from the provision of these Regulations or any other ordinance, law, rule, or regulation.

- 3. The issuance of a permit, based upon drawings and specifications, shall not prevent the Village from thereafter requiring the correction of errors in said drawings and specifications or from stopping unlawful construction operations being carried on thereunder.
- 4. The Grading and Drainage Permit shall be valid until the completion date noted in the permit. The Village may grant an extension if relevant design and construction standards have not changed and if, in the Appropriate Official's opinion, the work approved under the permit does not unduly adversely affect the health, safety and general welfare of the public. Otherwise, a new permit shall be acquired before work is started or continued. The Village may require modification of the soil erosion and sediment control plan to prevent any increase in erosion or off-site sediment runoff resulting from any extension.

Revocation of Permits.

- 1. The Appropriate Official may revoke a permit:
 - a. Where there has been any false or inaccurate statement or misrepresentation as to a material fact in the application or plans on which the permit was based.
 - b. When work is performed contrary to the provisions of the application or plans on which the permit is based.
 - c. When the Village becomes aware that all required permits and reviews have not been obtained.
- 2. When a permit is revoked, the Appropriate Official shall inform the permittee, in writing, of the specific steps the permittee must take in order to have the permit reissued.
- 3. It shall be unlawful to continue any work authorized by a permit after revocation of that permit until that permit is reissued or until a new permit is issued.
- 4. In cases where the permittee wishes to appeal the decision of the Appropriate Official, the appeal process outlined in appeals Section will be followed. An appeal shall stay all proceedings in furtherance of the action appealed from unless the Appropriate Official certifies to the Village Planning Commission, after the notice of the appeal has been filed with him, that by reason of facts stated in the certificate a stay would, in his opinion, cause imminent peril to life or property.

Retention of Plans.

Plans, specifications, and reports for all site developments shall be retained by the Appropriate Official as required by Illinois Statute

ARTICLE VII. – POST CONSTRUCTION RUNOFF CONTROL

Best Management Practices Hierarchy.

- a. Many developments result in the net addition of impervious area on the site. This increase of impervious surface area on a site directly affects the increase in the volume of stormwater runoff. The stormwater is unable to infiltrate into the ground and results in an overall increase in the volume of stormwater discharge from the site. The Best Management Practices Hierarchy is a process of systematically approaching the planning and design of the site with the intent to minimize the volume of stormwater discharge from the site. This may be accomplished by two basic strategies
 - 1. Reduce the amount of impervious surface area, thereby reducing runoff: and
 - 2. Utilize the landscape to naturally filter and absorb runoff before it leaves the development site.
- b. In the preparation of Site Development Plans and Final Engineering Plans for a development, the Applicant shall evaluate and implement, where practicable, site design features that minimize the increase in runoff volumes and rates from the site. The Applicant should include a narrative report describing how the Runoff Reduction Hierarchy was used in evaluating the existing conditions and developing the stormwater management plan for the site. The report shall state how each component was considered for reducing the runoff volume according to the priority explicit in the hierarchy. The Applicant's drainage plan submittal shall include site design features that are consistent with the following hierarchy:
 - 1. Preserving Regulatory Floodplains, Flood Prone and Wetland Areas
 - 2. Minimizing Impervious Surfaces on the Property
 - 3. Utilizing Stormwater Wetlands, Grassed Swales and Vegetated Filter Strips Infiltrating Runoff On-Site
 - 4. Providing Stormwater Retention Facilities
 - 5. Providing Wet Bottom or Wetland Detention Facilities
 - 6. Providing Dry Bottom Detention Facilities
 - 7. Constructing Storm Sewers
 - 8. Protecting Water Quality Through Multiple Uses

ARTICLE VIII. – HYDROLOGIC DESIGN CRITERIA

Release Rates.

a. The drainage system for new developments or redevelopments meeting the requirements of a Class 2 Grading and Drainage Permit shall be designed to control the peak rate of discharge from the total property under development for the two-*year* and one hundred- (100) year, storm events. The allowable release rates for the two design storms are as follows:

Event frequency Maximum release rate (cfs/acre)

2-year Existing Site Peak Rate

100-year Existing Site Peak Rate

b. The Applicant/Developer shall provide analysis that proves the controlled release rate of stormwater runoff shall not exceed the existing safe capacity of the downstream channel or storm sewer system nor shall it exceed the existing peak release rate. If it is determined by the Village that the downstream (receiving) storm drainage system may not safely convey the allowable release rate(s), the release rate(s) shall be lowered such that the receiving system can safely handle the detention pond discharge. The Applicant may be required to provide documentation that downstream capacity is adequate to convey the peak rate of discharge at the Review Engineer's discretion.

Storm Drainage System Design and Evaluation.

- a. The minor drainage system shall be designed to convey the ten-year event peak rate of stormwater runoff. The system shall convey the peak rate of flow without exceeding the open channel flow capacity of the system's storm sewer piping. The channel/swale system to convey through the development overland, from the development and all off-site tributary access.
- b. The major drainage system shall be designed to safely convey the 100-year event peak rate of stormwater runoff.
- c. The storm drainage system shall not result in cross connections between different storm drainage systems. If found during on-site construction, a meeting shall be held with Village officials and the Village Engineer to determine if other alternatives exist. The channel/swale system shall be designed to carry the peak rate of the 100-year critical duration storm event, assuming all storm sewers are blocked and that the upstream areas are fully developed and have been saturated with antecedent rainfall (AMC=4).

Design Methodologies.

Minor conveyance systems may be designed using the Rational Formula. The Rational Formula may also be used in sizing the major drainage system for sites with a combined site and off-site tributary area up to ten acres. Runoff Hydrograph Methods as described in this Storm water management plan must be used for major drainage systems with a combined site and off-site Tributary Area greater than ten (10) acres.

Positive Drainage.

All developments must be provided an overland flow path that will convey the stormwater runoff for the one hundred (100) year critical duration storm event (assuming all storm sewers are blocked) within designated drainage easements or the public right-of-way with a freeboard

of at least one (1) foot. Overland flow paths shall be provided drainage easements unless the flow is contained in the public right-of-way.

Freeboard.

All habitable structures shall have two-foot of freeboard during the 100-year flood event. Other structures require a one-foot freeboard. All structures are also subject to the applicable Village of Bourbonnais, State, and Federal requirements for Development in Special Flood Hazard Areas. (See Article VII)

Methods for Generating Runoff Hydrographs.

Runoff hydrographs shall be developed incorporating the following assumptions of rainfall amounts and antecedent moisture (Contact the Village Engineer for a list of currently accepted methods).

1. Rainfall

- a. Unless a continuous simulation approach to drainage system hydrology is used, all design rainfall events shall be based on the Illinois State Water Survey's Bulletin 70 rainfall distributions.
- b. When Huff's quartile distributions are used:
 - i. The first quartile point rainfall events shall be used for the design and analysis of conveyance systems with a duration of less than twelve hours.
 - ii. The third quartile point rainfall distributions shall be used for the design and analysis of detention basins and conveyance systems with a duration greater than 12 and less than or equal to 24 hours.
 - iii. The fourth quartile distribution shall be used in the design and analysis of systems with durations greater than 24 hours.
- c. When Huff's quartile distributions are used a critical duration analysis is required.
- d. The SCS Type II distribution with antecedent moisture condition (AMC = 4) may be used as an alternative to Huff's quartile distributions.
- 2. <u>Recurrence Interval</u>. The design rainfall recurrence interval shall be set by the design application as follows: (Local, County, IDNR, or IDOT design criteria may govern.)

Detention	2 - 100 years
Emergency Overflow Routing	100 years
Bridges	10-25-100 years
Swales, Ditches, and Culverts	10-25-100 years

Local, IDNR, or IDOT design criteria may govern; subject to approval of Appropriate Official.

Use of Rational Method to Calculate Design Flows.

Minor drainage system elements (storm sewers, inlets, gutters, etc.) may be designed using flows calculated using the Rational Method. Major drainage system elements serving a combined site and off-site drainage area of 10 acres or less may also be designed using flows calculated using the Rational Method.

1. Rainfall Intensity

a. Rainfall intensity values used when implementing the Rational Method shall be selected for the intensity vs. duration table

b. Rainfall intensity values shall be selected based on a duration equal to the calculated time of concentration. The minimum time of concentration (duration) shall be 10 minutes.

2. Rational Method Coefficient "C"

- a. Rational Method Coefficients shall be selected from the table or calculated based on a weighted average of these values.
- b. Other sources may be referenced when conditions are not adequately represented by descriptions and coefficients.

Maintenance Considerations.

- a. It should be noted that many BMPs require regular maintenance in order to function adequately throughout their design life. Design provisions shall be made to minimize long-term maintenance requirements. In some situations, specific BMPs may be rejected if projected maintenance requirements cannot be met by the property owner, or if the Village of Bourbonnais determines the proposed BMP is too cumbersome, requires extensive maintenance or excess cost.
- b. The stormwater drainage system shall be designed to minimize and facilitate maintenance. Use of native vegetation is strongly encouraged to reduce maintenance, increase wildlife habitat, and to provide other benefits. Wet bottom detention basins shall be provided with alternate outflows, which can be used to completely drain the pool for sediment removal where on-site topography allows. Pumping may be considered if drainage by gravity is not feasible. Pre-sedimentation basins shall be included, where feasible, for localizing sediment deposition and removal. Site access for heavy equipment shall be provided.
- c. Long-term maintenance also shall include the routine removal of trash, debris and obstructions from the basin outlet structure. Periodic removal of accumulated sediment (e.g., from swales and settling basins) also shall be done to maintain the function and aesthetics of stormwater facilities. At a minimum, sediment shall be removed from trapping devices whenever one foot or more of sediment has accumulated in the basin bottom. Naturally landscaped areas of detention and drainage facilities shall be maintained via controlled burning every one to three years, as needed to control invasive weeds. Where controlled burning is not feasible or allowed, mowing and/or selective herbicide applications shall be performed as needed on an annual basis. All turfed areas shall be mowed on a regular basis to maintain grass height as established by the Village of Bourbonnais.
- d. A maintenance plan for the ongoing maintenance of all stormwater management system components, including wetlands, is required prior to plan approval. The plan shall include:
 - 1. Maintenance tasks.
 - 2. The party responsible for performing the maintenance tasks.
 - 3. Descriptions of all permanent public or private access maintenance easements and overland flow paths, and compensatory storage areas.
 - 4. A description of dedicated sources of funding for the required maintenance.

Channel Modifications.

Channel modification is acceptable if the purpose is to restore natural conditions and improve water quality. The proposed development activity may involve a channel modification for other purposes if it can meet the following criteria:

- 1. Water quality and other natural functions, including aquatic life, would be improved by the modification or the impacts are offset by the replacement of an equivalent degree of natural resource values.
- 2. The activity has been planned and designed and will be constructed in a way which will minimize its adverse impacts on the natural conditions of the stream, aquatic life, or body of water affected.
- 3. Channel modifications will not result in an increase in the base flood elevation or flow velocities. If the Village deems necessary, hydraulic calculations shall be provided which detail the pre- and post-development 100-year high water elevations and flow velocities.

Channels, modified or not, shall follow the Maintenance Considerations Section and for planning and long term maintenance and establish a three-year short-term maintenance program to ensure proper establishment of vegetation.

Design Standards.

Developments initiating implementation after the adoption of this Storm water management plan will use the temporary detention of stormwater runoff from the site to meet release rates as required in this Storm water management plan and shall follow the following criteria. Implementation is defined by the Village in Implementation Section.

Referenced Standards.

Design standards for detention basin design and construction may also be required to comply with the provisions of the following.

- 1. IDOT Standard Specifications for Road and Bridge Construction, latest edition.
- 2. IDOT Drainage Manual, latest edition.
- 3. Clean Water Act (discharges regulated by the United States EPA through NPDES permits).
- 4. The Subdivision and Zoning Ordinances of the Village.
- 5. 17 Illinois Administrative Code 3702(Rules for Construction of Dams).
- 6. NRCS/IEPA Illinois Urban Manual, latest edition.
- 7. Illinois Drainage Law

Detention Storage Requirements.

a. The design storage to be provided in the detention basin shall be based on the need to restrict the runoff from the 2-year and 100-year critical duration events to the allowable release rates while providing a minimum of one (1) vertical foot of freeboard for the 100-year event. All detention basin storage shall be computed using Hydrograph Methods utilizing reservoir routing (also called modified pools or level pool) or equivalent method as described by this Storm water management plan.

b. For facilities with less than five acres of tributary area all onsite, the nomograph relating *Detention Volume vs. Percent Impervious* shall be used to calculate the volume of site runoff storage required.

Waiver of Detention Requirements.

The requirement for stormwater detention and release rate does not apply when:

- a. The development is in accord with the approved site plan and is on a lot in a subdivision for which detention is otherwise provided in accordance with this Storm water management plan.
- b. The development is on a lot or parcel in a subdivision for which detention was provided and approved prior to the effective date of this Storm water management plan.
- c. The requirement for stormwater detention and release rate shall be waived by the Village Board when determined it is in the best interest of the jurisdiction to require fee in lieu of detention.

Culvert, Road and Driveway Crossings.

Following are the special considerations required for the Construction of New Bridges, Culvert Crossings, Roadway Approaches or the Reconstruction or Modification of Existing Bridges, Culvert Crossings or Roadway Approaches.

- 1. A proposed new structure shall not result in an increase of upstream flood stages greater than 0.1-foot when compared to the existing conditions for all flood events up to and including the base flood event unless contained within the channel banks, or recorded easements. The evaluation must be submitted to the Village Engineer for review and concurrence before a permit is issued.
- 2. The Applicant's Engineer shall determine if the proposed construction is a dam as defined in 17 IL Adm. Code 3702 (Rules for "Construction and Maintenance of Dams"). If the proposed construction is so defined as a dam, an IDNR-OWR Dam Safety permit or a letter from IDNR-OWR stating no permit is required shall be submitted to the Village Engineer prior to the issuance of a grading and drainage permit.
- 3. If the tributary watershed area is greater than 1 square mile, the Applicant's Engineer shall provide the supporting design calculations to the Village before submitting to FEMA/IDNR/OWR. Upon approval from the Village, a submittal shall be made to FEMA/IDNR/OWR and the Village Engineer provided with documentation confirming the issuance of the FEMA/IDNR/OWR permit.
- 4. Velocity increases must be mitigated except that in the case of bridges or culverts or on stream structures built for the purpose of backing up water in the stream during normal or flood flows, velocities may be increased at the structure site if scour, erosion and sedimentation will be avoided by the use of appropriate measures.
- 5. Sizing of culvert crossings shall consider entrance and exit losses as well as tailwater conditions on the culvert. Furthermore, exit velocity calculations shall also be required for all culvert crossings and erosion protection shall be provided where exit velocities

- exceed 4 fps. Minimum culvert size shall be fifteen inch (15"). All culverts shall be Reinforced Concrete Pipe (RCP) and have flared end sections or headwalls.
- 6. For modifications or replacement of existing structures on any stream serving a tributary area of 640 acres or more, the existing structure must first be evaluated in accordance with Illinois Department of Natural Resources Rules 92 Ill. Adm. Code Part 3700 to determine if the existing structure is a source of flood damage. If the structure is a source of flood damage, the Applicant's Engineer shall submit justification to allow the damage to continue and evaluate the feasibility of relieving the structure's impact. Modifications or replacement structures shall not increase flood stages compared to the existing condition for all flood events up to and including the base flood event.

Vegetated Filter Strips and Swales.

To effectively filter stormwater pollutants and promote infiltration of runoff, sites should be designed to maximize the use of vegetated filter strips and swales. These BMPs shall be designed to follow criteria in the Illinois Urban Manual. Whenever practicable, runoff from impervious surfaces should be directed onto filter strips and swales comprised of native grasses and forbs before being routed to a storm sewer or detention basin.

General Basin Design Requirements.

1. <u>Erosion Control</u>. Temporary and permanent erosion control shall be required for all detention basins in accordance with this Storm water management plan.

2. <u>Verification and Final Approval.</u>

- a. Erosion protection shall be inspected by the owner or the owner's representative throughout the project duration.
- b. Detention basin storage volume shall be verified to the satisfaction of the Appropriate Official through as-built surveys or other means.
- c. Inflow, outflow and emergency overflow elevations and configurations shall be verified through as-built surveys.
- d. Final vegetative cover and permanent erosion control shall be inspected for completeness of cover.
- e. The basin will receive final approval upon fulfillment of b, c, and d above, and any and all other requirements or agreements with the jurisdiction. The anniversary date of maintenance and repair reporting will be recorded as such.
- f. All basins must receive final approval within ninety (90) days of the substantial completion as determined by the Village of any of the following:
 - i. The first phase (as shown on approved plans) of construction of public utilities and roadways in any approved Subdivision project. Detention structures for the ultimate development area must be constructed during the first phase of the project, and approved at its completion unless otherwise agreed to by the Village. The detention

structures must then be maintained and repaired in conformance with this Storm water management plan, during future construction phases.

- ii. Parking areas, floor slabs and/or other impervious areas (as shown on approved plans, and not including sidewalks) for work on an individual lot requiring an individual permit under this Storm water management plan. Phased construction will be treated as in the above case.
- iii. Mass earthwork or rough grading, if no other phased construction is scheduled to be started within one hundred eighty (180) days.
- g. Failure to receive final approval as required will be considered a violation of this Storm water management plan.
- h. Final approval of the basin shall not constitute acceptance by the Village for dedication nor completion of this Storm water management plan's maintenance requirements.
- 3. <u>Infiltration Practices</u>. To effectively reduce runoff volumes, the use of infiltration practices including basins, trenches, and permeable pavement are encouraged. The Illinois Urban Manual contains criteria for the design and use of these practices. An appropriate sediment control device shall be provided to remove coarse sediment from stormwater flows before they reach infiltration basins or trenches. Engineering calculations demonstrating infiltration rates shall be included with the application.
- 4. <u>Side Slopes</u>. Side slopes of detention basins and open channels shall not be steeper than five (5) to one (1) (horizontal to vertical) certain types of basins have different requirements as defined by this Storm water management plan. Detention basin side slopes above normal pool shall be designed with permanent erosion protection consisting of suitable vegetation or other permanent finish. Topsoil must be provided per specific basin type design criteria (see paragraph G, H, and I). Permanent erosion protection shall be aesthetically suitable to the development or existing surrounding land use.
- 5. Overflow Structures. All stormwater detention basins shall be provided with an overflow structure capable of safely passing flows in excess of 100-year event at a stage not exceeding one foot above high water level. The top of the lowest foundation grade in the vicinity of the detention basin shall be two-feet above high water level. The design flow rate of the overflow structure shall be equivalent to the one hundred (100) year peak inflow rate. Weirs, dams and specialized outflows shall be designed by a Professional Engineer registered in the State of Illinois.

6. <u>Detention Basin Outlet Design.</u>

- a. Where the outlet discharges directly to a channel, it is not necessary to consider backwater effects, however the overflow structure shall be placed at least one-foot above the 100-year frequency high-water level of the channel.
- b. Detention basin outlets shall be constructed of reinforced concrete pipe(s) with a minimum inside diameter of twelve (12") inches. Further restriction to flow may be provided by a restrictor placed upstream of the outlet. This shall be achieved by constructing a concrete wall within a "Restrictor Manhole". The orifice opening in the

restrictor shall have a minimum diameter of four (4") inches. More specialized designs shall be required when release rates require restriction that cannot be achieved by the minimum allowed four (4") diameter orifice opening). The more specialized design shall include provisions to minimize clogging and that tend to self-clean the restrictor.

7. Other Design Requirements.

- a. Bubble up outlets, pumped outlets and other active control structures are prohibited.
- b. Temporary erosion techniques shall be used as required to ensure a full stand of cover vegetation in minimum time.

8. Location Requirements.

- a. Detention basins and their one hundred (100) year design high water shall be contained within platted lots or easements dedicated for drainage purposes.
- b. Detention basin lots shall have adequate access for maintenance purposes. Exceptions may be made for infill development.
- c. A twenty (20) foot minimum setback shall be required from all property lines to the normal pool elevation which is considered to be the elevation of the water level at the permanent depth of the wet bottom detention area.
- d. A twelve (12) foot minimum setback shall be required from all property lines to one-foot above the high water level.
- 9. Accommodating Flows from Upstream Tributary Areas. Stormwater runoff from upstream tributary areas to the property shall be considered in the design of the property's drainage system. Flows from upstream areas that are not to be detained should be routed around the basin being provided for the site being developed. If the upstream and off-site tributary area cannot be routed around the site detention area, detailed information shall be provided by the Developer's Engineer demonstrating why to the Village Engineer for review and subsequent approval of routing the upstream and off-site area through the site's detention area.
- 10. <u>Upstream Areas Not Meeting Ordinance Requirements</u>. When there are areas not meeting the storage and release rates of this Storm water management plan, tributary to the Applicant's property, the following steps shall be followed:
 - a. The Applicant shall compute the storage volume needed for his/her property using the release rates and procedures described in this Storm water management plan.
 - b. Areas tributary to the Applicant's property, not meeting the storage and release rate requirements of this Storm water management plan, shall be identified.
 - c. Using the areas determined above plus the Applicant's property area, total storage and release rates needed for the combined properties shall be computed using the release rates and procedures described in this Storm water management plan. If tributary areas

- are not developed, a reasonable fully developed land cover, based on local zoning, shall be used for the purposes of computing storage.
- d. Once the necessary combined storage is computed the jurisdiction may choose to pay for over-sizing the Applicant's detention basin to accommodate the regional flows. The Applicant's responsibility will be limited to the storage for his property as computed above. If regional storage is selected by the jurisdiction, the jurisdiction will work with the Applicant to implement the requirements of this Storm water management plan. If regional storage is rejected by the Village, the Applicant shall bypass all tributary area flows around and not through the Applicant's basin whenever practicable as determined by the Appropriate Official. If the Applicant must route upstream flows through his/her basin and the upstream areas exceed one-square mile in size, the Applicant must meet the provisions of On-Stream Detention in this Storm water management plan and applicable IDNR and FEMA requirements.
- 11. <u>Upstream Areas Meeting Ordinance Requirements</u>. When there are areas which meet the storage and release rate requirements of this Storm water management plan, tributary to the Applicant's property, the upstream flows shall be bypassed around and not through the Applicant's detention basin if this is the only practicable alternative as determined by the Appropriate Official. Storage needed for the Applicant's property shall be computed as described in this Storm water management plan. However, if the Village decides to route tributary area flows through an Applicant's basin, the final design stormwater releases shall be based on the combined total of the Applicant's property plus tributary areas. It must be shown that at no time will the runoff rate from the Applicant's property exceed the allowable release rate for his/her property alone.
- 12. <u>Early Completion of Detention Facilities</u>. Where detention or retention is to be used as part of the drainage system for a property, they shall be constructed as the first element of the initial earthwork program unless otherwise agreed to by the Village. Any eroded sediment captured in these facilities shall be removed by the Applicant on a regular basis and before project completion in order to maintain the design volume of the facilities.
- 13. <u>Farmland Impacts</u>. All detention basin construction shall examine potential impacts to adjacent agricultural land and shall address measures that will be implemented to eliminate such impacts and comply with other relevant permitting.
- 14. Wet Bottom Detention Basin Design. Wet bottom detention basins shall be designed to remove stormwater pollutants, to be safe, to be aesthetically pleasing, and as much as feasible to be available for recreational use.
- 15. Wet Bottom Basin Depths. Wet bottom basins shall be at least four feet deep, excluding near-shore zones and safety ledges. If fish habitat is to be provided, the basin depth shall be at least ten (10) feet deep over twenty-five (25%) percent of the bottom area to prevent winterkill.
- 16. Wet Bottom Basin Shoreline Slopes. The side slopes of wet bottom basins shall not be steeper than ten to one (10 to 1) horizontal to vertical from one foot below the normal pool stage. Slopes below a depth of 8 feet are permitted to be two to one (2 to 1). Other slopes shall be no steeper than four to one (5to 1).

Appropriate soil conditions shall be provided in this shoreline zone. First, compaction of both subsoil and topsoil shall be minimized (i.e., to less than 275 psi). Where subsoil compaction cannot be avoided, it should be disked to a depth of 6-8 inches with a chisel plow before spreading topsoil. Second, a suitable uncompacted topsoil, at a minimum thickness of one foot shall be spread to provide a suitable growing medium for aquatic plants. Coarse soils should have minimal clay content and a high organic.

Upper slopes of detention basins (higher than one foot above normal stage and including the upstream side of the embankment) should be no steeper than 5:1. Flatter slopes (i.e., 5:1) are preferred to enhance plant establishment and to facilitate long-term maintenance.

- 17. Safety Ledge. All wet detention basins shall have a level safety ledge.
- 18. <u>Permanent Pool Volume</u>. The minimum permanent pool volume in a wet bottom basin at normal depth shall be equal to the runoff volume from its watershed for the two (2) year, twenty-four (24) hour event. The minimum pool depth shall be four feet (4').
- 19. Wet Bottom Basin Inlet and Outlet Orientation. The distance between detention inlets and outlets shall be maximized. Inlets and outlets shall be at opposite ends of the basin providing that the orientation does not create undue hardship based on topography or other natural constraints. Designers are encouraged to use baffles or berms in the basin bottom to prevent short-circuiting of low flows.
- 20. <u>Shoreline Vegetation</u>: Water tolerant native vegetation shall be used to landscape the shorelines of wet detention facilities. The selected plants and planting methods shall conform to the soils, hydrology, and water quality conditions present in such facilities, with plants being tolerant of highly variable hydrologic conditions and degraded water quality (e.g., high turbidity and salinity content). Plant selection should conform to the guidance in the Native Plant Guide for Stream and Stormwater Facilities in Northeastern Illinois (NRCS et al, 1997) which is hereby adopted by reference.

Native vegetation is recommended, but not required, for side slopes (higher than one foot above normal stage) of all detention facilities.

21. <u>Soil Permeability</u>. Wet bottom basin design shall include an evaluation of soil permeability. A basin liner shall be included in the design if needed to ensure water retention to normal pool elevation.

Wetland Detention Basin Design.

In addition to the other requirements of this Storm water management plan, wetland detention basins shall be designed to remove stormwater pollutants, to be safe, to be aesthetically pleasing and as much as feasible to be available for multiple uses.

1. <u>Wetland Basin Grading.</u> The side slopes of wetland basins (from one foot above the normal pool stage to at least one foot below the normal pool stage) and the basin bottom shall not be steeper than 10 to 1 (horizontal to vertical). Steeper slopes are permitted in settling basins and open water zones near the basin outlet.

Appropriate soil conditions shall be provided in this shoreline zone. First, compaction of both subsoil and topsoil shall be minimized (i.e., to less than 275 psi). Where subsoil

compaction cannot be avoided, it should be worked to a depth of 6-8 inches before spreading topsoil. Second, a suitable uncompacted topsoil, at a minimum thickness of one foot shall be spread to provide a suitable growing medium for aquatic plants. Coarse soils with minimal clay content and a high organic content are required.

Upper slopes of detention basins (higher than one foot above normal stage) should be no steeper than 5:1. Flatter slopes (i.e., 5:1) are preferred to enhance plant establishment and to facilitate long-term maintenance.

2. Wetland Vegetation: Water tolerant native vegetation shall be used to landscape the shorelines and bottoms (non-open water areas) of wetland detention facilities. The selected plants and planting methods shall conform to the soils, hydrology, and water quality conditions present in such facilities, with plants being tolerant of highly variable hydrologic conditions and degraded water quality (e.g., high turbidity and salinity content). Plant selection should conform to the guidance in the Native Plant Guide for Stream and Stormwater Facilities in Northeastern Illinois (NRCS et al, 1997) which is hereby adopted by reference.

Native vegetation is recommended, but not required, for side slopes (higher than one foot above normal stage) of all detention facilities.

Dry Detention Basin Design.

In addition to the other requirements of this Storm water management plan, dry basins shall be designed to remove stormwater pollutants, to be safe, to be aesthetically pleasing and as much as feasible to be available for multiple uses.

- 1. <u>Dry Basin Drainage</u>. Dry basins shall be designed so that eighty percent (80%) of their bottom area may have standing water no longer than seventy-two (72) hours for any runoff event less than the one hundred (100) year event. Grading plans shall clearly distinguish the portion of the basin bottom that may have standing water for greater than 72-hours. Underdrains directed to the outlet may be used to accomplish this requirement.
- 2. <u>Minimum Bottom Slope</u>. Dry bottom basins shall have one percent (1%) minimum bottom slopes or underdrain systems as approved by the, Village Engineer. Where one percent (1%) minimum bottom slope is not possible, proper native vegetation should be considered consistent with the Native Plant Guide.
- 3. <u>Soil Conditions.</u> Appropriate soil conditions shall be provided in the basin. First, compaction of both subsoil and topsoil shall be minimized (i.e., to less than 275 psi). Where subsoil compaction cannot be avoided, it should be worked to a depth of 6-8 inches before spreading topsoil. Second, a suitable uncompacted topsoil, at a minimum thickness of one foot shall be spread to provide a suitable growing medium for plants. Coarse soils with minimal clay content and a high organic content are required.
- 4. <u>Velocity Dissipation</u>. Velocity dissipation measures shall be incorporated into dry basin designs to minimize erosion at inlets and outlets and to minimize re-suspension of pollutants.
- 5. <u>Dry Basin Inlet and Outlet Orientation</u>. Dry basin inlet and outlet orientation shall be the same as for wet bottom detention basin

6. <u>Temporary Sediment Trap</u>. A sediment trap shall be constructed at each major inlet to a dry basin during construction. The temporary sediment trap shall be designed in accordance with criteria in the Illinois Urban Manual.

On-Stream Detention.

On-stream detention basins are discouraged but will be considered if they provide regional public benefits and if they meet the other provisions of this Storm water management plan with respect to water quality and control of the two (2) year and one-hundred (100) year, critical duration storm events from the property.

- 1. If on-stream detention is used in watersheds larger than 200-acres, the Applicant will use hydrologic and hydraulic modeling to demonstrate that the design will not increase the flood levels for any properties upstream or downstream of the property.
- 2. Impoundment of the stream as part of on-stream detention shall:
 - a. Require the implementation of an effective non-point source management program utilizing best management practices for run-off and sediment reduction. This program is necessary to prevent direct discharge to the stream.
 - i. Best Management Practices (BMPs) for runoff reduction consistent with the hierarchy for Minimization of Runoff Volumes and Rates as defined in this Storm water management plan.
 - ii. Two year, 24 hour detention/sedimentation basins for all development consistent with the criteria of temporary Sediment Trap in the Illinois Urban Manual.
 - iii. A program to control nonpoint sources at the source for prior developments constructed without appropriate stormwater BMPs.
 - b. Include a design for appropriate bank stabilization measures, based on flow velocity calculations, and a pre-sedimentation basin.
 - c. Comply with other relevant permitting and/or ordinances.
- 3. Impoundment of the stream as part of on-stream detention shall not:
 - a. Prevent the migration of indigenous fish species, which require access to upstream areas as part of their life cycle, such as for spawning.
 - b. Cause or contribute to the degradation of water quality or stream aquatic habitat.
 - c. Involve any stream channelization or the filling of wetlands.
 - d. Increase base flood elevations or high water levels of any adjacent land.

Protection of Wetlands, Rivers, Streams, Lakes, Ponds, and Depressional Storage Areas.

Wetlands, rivers, streams, lakes and ponds shall be protected from damaging modifications and adverse changes in runoff quality and quantity associated with land developments. In

addition to the other requirements of this Ordinance, the following requirements shall be met for all developments whose drainage flows into wetlands, rivers, lakes or ponds:

- 1. <u>Detention in Wetlands, Rivers, Streams, Lakes or Ponds</u>. Existing wetlands, rivers, lakes, or ponds shall not be modified for the purposes of stormwater detention unless it is demonstrated that the proposed modifications will maintain or improve their habitat and ability to perform beneficial functions and shall comply with other relevant permitting. Existing storage and release rate characteristics of wetlands, rivers, lakes, ponds, or other depressional storage areas shall be maintained and the volume of detention storage provided to meet the requirements of this section shall be in addition to this existing storage.
- 2. <u>Sediment Control</u>. The existing wetlands, rivers, lakes or ponds shall be protected during construction and as further regulated in Article V of this Storm water management plan.
- 3. <u>Alteration of Drainage Patterns</u>. Site drainage patterns shall not be altered to substantially decrease or increase the existing area tributary to wetlands, rivers, lakes or ponds. Drainage patterns shall not be altered by development to direct runoff offsite to other than natural drainage outlets existing prior to development.
- 4. <u>Detention/Sedimentation</u>. All runoff from the development shall be routed through a preliminary detention/sedimentation basin designed to capture the two (2) year, twenty-four (24) hour event and hold it for at least twenty-four (24) hours, before being discharged to the wetland, river, lake or pond. This basin shall be constructed before property grading begins and shall be maintained throughout the construction process. In addition, the BMP hierarchy defined in the Maintenance Considerations Section should be followed to minimize runoff volumes and rates being discharged to the wetland, river, stream, lake or pond, and as further regulated in Article II and Article IV of this Section.
- 5. <u>Vegetated Buffer Strip.</u> A buffer strip of at least twenty-five (25) feet in width, vegetated with native plant species, shall be maintained or restored around the periphery of a wetland, river, stream, lake or pond. The selected plants and planting methods shall conform to the soils, hydrology, and water quality conditions present in such facilities, with plants being tolerant of highly variable hydrologic conditions and degraded water quality (e.g., high turbidity and salinity content). Plant selection shall conform to the guidance in the native plant guide for stream and stormwater facilities in NE Illinois (NRCS et al, 1997) which is hereby adopted by reference.

Parking Lot Detention.

If allowed by the governing jurisdiction, the maximum stormwater ponding depth in any parking area shall not exceed six (6) inches for more than four (4) hours. Parking layout shall be designed such that handicap parking spaces are outside the design flood limits of the parking lot. All measures shall be taken to pond the stormwater runoff in the drive isles before water is allowed to be ponded in the parking stalls.

Rooftop Detention.

Rooftop storage of excess stormwater shall be designed and constructed to meet with the Village building code.

Cooperative Detention.

The Village will consider joint detention facilities developed through cooperative efforts that comply with all requirements of this Storm water management plan.

New Channels and Channel Re-Location.

The following items are general performance standards for streams and channels and do not excuse a development or re-development from meeting all other requirements of this Storm water management plan. Hydrologic design criteria for new and re-located channels shall be in accordance with the Channel Modifications Section. For channel modifications with an upstream watershed exceeding 100-acres, additional information shall be provided as detailed in the Channel Modifications Section.

- 1. Natural streams and channels are to be conserved. The condition and character of "channels" vary from poor to good and from concrete ditches to natural and/or man-made streams. Streams and channels are often in a "disturbed" not "natural" condition prior to development. The methods used to maintain the channel prior to development may no longer be practical. It may be necessary to "improve" the channel to a maintainable condition. Bio-engineering "stream restoration" principals shall be used to do this (e.g. flatter, maintainable side slopes, etc. not armoring).
- 2. Removal of streamside (riparian) vegetation shall, where practical, be limited to one side of the channel.
- 3. Clearing of channel vegetation shall be limited to that which is essential for construction of the channel.
- 4. If a stream or channel meeting the definition of Waters of the United States is modified, a stream or channel mitigation plan shall be submitted to the Appropriate Official for review and approval. The plan shall show how the physical characteristics of the modified channel shall meet the existing channel length, cross-section, slope, sinuosity and carrying capacity of the original channel. The plan shall also re-establish vegetation within the channel modification using the Native Plant Guide for Streams and Stormwater Facilities in Northeastern Illinois, NRCS, et al., (as amended) as a minimum standard for the revegetation plan.
- 5. All disturbed areas associated with a channel modification shall be seeded or otherwise stabilized immediately according to the Channel Modifications Section.
- 6. If channels are modified, an approved and effective means to reduce sedimentation and degradation of downstream water quality must be installed before excavation begins and must be maintained throughout the construction period.
- 7. New or relocated channels shall be built in the dry and all items of construction, including vegetation, shall be completed prior to diversion of water into the new channel.
- 8. Streams and channels shall be expected to withstand all events up to the base flood without increased erosion. The use of armoring of banks using bulkheads, rip-rap and other materials shall be avoided. Armoring shall only be used where erosion cannot be prevented in any other way such as use of vegetation or gradual slopes. Such armoring shall have minimal impact on other properties, and the existing land configuration.
- 9. A minimum maintenance easement of 12-feet from top of bank is required along one side of all channels draining 20 or more acres. All drainage easements shall be accessible to vehicular equipment; however, linear accessibility for vehicular equipment is not required.
- 10. Channel side slopes shall be stable throughout the entire length and a 5:1 = slope is to be used for channel side slopes.

- 11. Trapezoidal or parabolic cross sections are preferred over triangular shapes.
- 12. For vegetative channels, flow velocities within the channel should not exceed the maximum permissible velocities given in Table 1 below.

TABLE 1 - MAXIMUM PERMISSIBLE DESIGN VELOCITIES		
Soil Texture	Channel Vegetation Retardance and Cover	Permissible Velocity (ft./sec.) 1/
Sand, silt, sandy loam, silt loam, loamy sand (ML, SM, SP, SW)	B - Tall fescue, smooth bromegrass	3.5
	C - Kentucky bluegrass, redtop, red fescue	3.0
	D - Annuals 2/, small grain (rye, oats, wheat, ryegrass)	2.5
	E - Bare channel	1.5
Silty clay loam, sandy clay loam (ML-CL, SC)	B - Tall fescue, smooth bromegrass	4.5 3/
	C -Kentucky bluegrass, redtop, red fescue	4.0
	D - Annuals 2/, small grain (rye, oats, wheat, ryegrass)	3.5
	E - Bare channel	2.0
Clay (CL)	B - Tall fescue, smooth bromegrass	5.5 3/
	C - Kentucky bluegrass, redtop, red fescue	5.0 3/
	D - Annuals 2/, small grain (rye, oats, wheat, ryegrass)	4.0
	E - Bare channel	2.0

1/ To be used only in stabilized protected areas.

- 13. Construction vehicles shall cross streams by the means of existing bridges or culverts. Where an existing crossing is not available, a temporary crossing shall be constructed in which.
 - (a) The approach roads will be 0.5 feet or less above natural grade.
 - (b) The crossing will allow stream flow to pass without backing up the water above the stream bank vegetation line or above any drainage tile or outfall.
 - (c) The top of the roadway fill in the channel will be at least 2 feet below the top of the lowest bank. Any fill in the channel shall be non-erosive material, such as rip-rap or gravel.
 - (d) All disturbed stream banks will be seeded or otherwise stabilized as soon as possible in accordance with the STORMWATER POLLUTION PREVENTION PLAN (SWP3) Section upon installation and again upon removal of construction crossings.
 - (e) The access road and temporary crossings will be removed within one year after installation, unless an extension of time is granted by the Appropriate Official.

^{2/} Annuals – use only as temporary protection until permanent vegetation is established.

^{3/} Velocities allowed need to reflect depths allowed.

(f) The Developer's Engineer shall provide supporting calculations and design plans demonstrating that a proposed temporary stream crossing will not result in increased flood elevations during the 100-year critical duration event.

Storm Sewers.

The following items are general performance standards for storm sewers and swales and do not excuse development from meeting all other requirements of this Storm water management plan.

- 1. The 10-year design storm shall be used as a minimum for the design of storm sewers, swales and appurtenances. . Storm sewers shall have a minimum diameter of 12 inches. Storm sewer design analysis shall be calculated under full flow conditions, unless prior approval from the Village Engineer is received for an alternate flow condition.
- 2. Development shall not connect to sanitary sewers as an outflow for the stormwater management system.
- 3. For agricultural drain tiles (tiles).
- 4. All storm sewers shall be located in a public road right-of-way, public utility easements, or maintenance easement of sufficient size to maintain and re-construct the sewer.
- 5. All on-site stormwater conveyance systems shall be designed and constructed to withstand the expected velocity of flow from all events up to the base flood without erosion. Stabilization adequate to prevent erosion shall be provided at the inlets and outlets for all pipes, transitions and paved channels.
- 6. Swales being used as part of the stormwater management system for a development shall be located within a deed or plat restricted area of sufficient size to maintain or reconstruct the swale.
- 7. Surface outflows onto adjoining properties shall be designed to release as sheet flow using level spreader trenches unless alternative designs are approved by the Appropriate Official.

Overland Flow Paths.

Overland flow paths shall convey the entire peak rate of runoff from a 100-year flood event, assuming all storm sewers are blocked and that upstream areas are fully developed. Overland flow paths are surface drainage systems, such as vegetated swales or channels, which are designed to collect flow and allow it to pass through the site without interference. Roadways may also be used as overland flow paths. An overland flow path must be provided through the entire site. The design of an overland flow path must account for the lowest opening of adjacent structures. The lowest opening into habitable structures in the vicinity of the overflow path shall be one-foot above the high water level for the 100-year event. Other structures shall be one-foot above the high water level for the 100-year event.

Overland flow paths can be sized using the Manning's equation, unless there is evidence that suggests that backwater effects must be considered. The "overflow elevation" is the elevation of the highwater in the overflow as computed by the Manning's equation. Overland flow paths shall be protected by a recorded covenant to prevent the construction of any obstructions that could impair its function.

As a general guide, ponding along flow paths should not exceed nine (9) inches before flowing over local high points. Total depth of flow shall be limited by foundation elevation, building setback, and freeboard requirements.

Field (Farm) Drainage Tiles.

The Applicant shall submit a subsurface drainage inventory as required for Class 2 Grading and Drainage Permits. The inventory shall locate existing farm drainage tiles by appropriate methods performed by a qualified individual. All existing drain tile lines damaged during the investigation shall be repaired.

- 1. Information collected during the drainage investigation shall be used to design and develop a stormwater management system that is appropriate for the development and connecting tile lines on adjoining properties.
- 2. Existing easements for any agricultural drainage systems located underneath areas that will be developed shall be preserved. If no such easement exists, an easement shall be dedicated for access and maintenance as provided for in this Storm water management plan.
- 3. All agricultural drainage systems that serve upstream areas outside of the development and that are located underneath areas that will be developed shall be replaced with non-perforated conduit or otherwise protected to prevent root blockage. The existing drainage district system may remain in place with the approval of the Village.
- 4. Agricultural drainage systems that, due to development, will be located underneath streets, driveways, and other paved areas as allowed by this Storm water management plan, shall be replaced with conduits meeting the Village of Bourbonnais's standard specifications, as needed to prevent the collapse of the agricultural drainage conduit.
- 5. Agricultural drainage systems shall be relocated within the development area when required by the Appropriate Official of the Village of Bourbonnais. Such relocation shall maintain sufficient slope and capacity to prevent sedimentation and to prevent an increase in scouring or structural damage to the conduit provided however the relocated system shall not be required to exceed the slope or capacity of the existing tile. If the system is not under the authority of a drainage district, the Appropriate Official of the Village of Bourbonnais shall consider the interests of those landowners who are served by the system when drainage systems are relocated.
- 6. Field tile systems disturbed during the process of development shall be reconnected by those responsible for their disturbance unless the approved drainage plan includes provisions for these. The Village shall be notified, a site meeting conducted to determine disposition, a Plat of Easement created for the pipe and rerouting or repair, as required by the Village Engineer.
- 7. Connection of agricultural tiles to stormwater systems shall be discouraged. Where tiles are being connected to these stormwater systems or at points of ingress or egress from the development sites, observation structures or similar maintenance and inspection access structures shall be installed.
- 8. The development design may utilize, when an easement is granted from the adjoining downstream property owner and where the existing system has adequate capacity and structural integrity, outflow locations that have an existing tile leaving the development site. A subsurface connection to the tile shall be constructed as the primary low flow outlet. A secondary surface outlet shall be designed for outflows exceeding the tile capacity and as a backup system if the downstream tile ceases to function.

- 9. Surface outflows onto adjoining properties not into a defined channel shall be designed to release as sheet flow using level spreader trenches or alternative designs as approved by the Appropriate Official.
- 10. The Applicant shall notify adjoining downstream property owners in writing of any proposed stormwater facility outlet location and design. The development design shall utilize where practical and approved by the Appropriate Official, outflow locations that have an existing tile leaving the development site. A subsurface connection to the tile shall be constructed as a low flow outlet. A surface outlet shall be designed for the development site outflows based on the assumption the downstream tile will cease to function.

Stormwater Pollution Prevention Plan (SWP3) - General.

- 1. The area disturbed shall be assumed to include the entire property area unless the applicable plans specifically exclude certain areas from disturbance.
- 2. The owner bears the responsibility for implementation of the SWP3 and notification of all contractors and utility agencies on the site.
- 3. SWP3's must be provided for all phases of development, including sanitary sewer construction, storm drainage system construction, waterline, street and sidewalk construction, general grading and the construction of individual homes. The Class 2 Grading and Drainage Permit holder will not be required to provide an SWP3 for the activities of utility agencies.
- 4. The Village may use the Illinois Department of Transportation (IDOT) system of compliance that is outlined in the Bureau of Design and Environment (BDE) design manual.
- 5. The subsequent owners of individual lots in a subdivision with an approved SWP3 bears the responsibility for continued implementation of the approved SWP3's for all construction activity within or related to the individual lot, excluding construction managed by utility agencies.

Requirements for Utility Construction.

- 1. Utility companies shall be responsible for compliance with the requirements of this Storm water management plan.
- 2. Utility companies shall develop and implement Best Management Practices (BMPs) to prevent the discharge of pollutants on any site of utility construction within the jurisdiction. Disturbed areas shall be minimized, disturbed soil shall be managed and construction site entrances shall be managed to prevent sediment tracking. Sediment tracked onto public streets shall be removed immediately by the utility agency.
- 3. Prior to entering a construction site, utility agencies shall obtain a copy of any SWP3's for the project from the owner. Any disturbance to BMPs resulting from utility construction shall be repaired immediately by the utility company in compliance with the SWP3.

Required Documentation.

A Class 2 Grading and Drainage Permit requires the execution and record maintenance of the following forms and reports (see also the Erosion Control Plan Action Matrix, NPDES Action Matrix - IDOT). The most current version of the standard forms from the Illinois Department of Transportation and the Illinois Environmental Protection Agency (IEPA) shall be used. The approved project erosion control documents shall be kept on file at the construction site or at a nearby field office and must be made available to the general public upon request.

- 1. A <u>Stormwater Pollution Prevention Plan (SWP3)</u> shall be prepared. The Applicant may use the IDOT SWP3 Template except that the Illinois Urban Manual, latest amended, shall be referenced in lieu of IDOT Standard Specifications for Road and Bridge Construction.
- 2. A <u>Contractor Certification Statement (CCS)</u> shall be completed prior to the start of construction by the contractor responsible for erosion control. The Applicant may use the IDOT CCS Template (form BDE 2342a). The Grading and Drainage Permit holder shall provide the contractor responsible for erosion control with a copy of the IEPA NPDES statewide permit ILR10.
- 3. A <u>Notice of Intent (NOI)</u> shall be filed at least 30 days prior to the start of construction and shall be prepared by the Grading and Drainage Permit holder (the original sent by certified mail to the IEPA with transmittal copy to the appropriate jurisdiction official, and a copy kept in the project erosion control file).
- 4. A NPDES / Erosion Control Inspection Report (ECIR) shall be prepared by the Grading and Drainage Permit holder on a weekly basis and after any 1/2-inch rainfall (to be kept in project erosion control file). The Applicant may use the current IDOT ECIR template (BC 2259).
- 5. An <u>Incidence of Non-Compliance (ION)</u> and corrective action shall be filed by the Grading and Drainage Permit holder within five (5) working days of the incident (the original sent by certified mail to the IEPA with transmittal copy to the Appropriate Official and a copy kept in the project erosion control file).
- 6. A <u>Notice of Termination (NOT)</u> shall be filed upon final stabilization of erosion (minimum 70% viable vegetative growth) by the Grading and Drainage Permit holder (the original sent by certified mail to the IEPA with transmittal copy to the Appropriate Official and a copy kept in the project erosion-control file).

Applicability and Guidelines.

- 1. It is the responsibility of the Grading and Drainage Permit holder to prepare and maintain documentation to meet the NPDES permit requirements for private grading and construction projects.
- 2. The Appropriate Official shall be given immediate access to all required project NPDES documents.
- 3. All notices sent to the IEPA shall be copied to the Appropriate Official.

Referenced Standards.

Design standards for soil erosion and sediment control shall comply with the most current provisions of the USEPA regulations, IEPA regulations, IDOT Erosion Control/NPDES guidelines and the latest amended "Illinois Urban Manual", prepared by the United States Department of Agriculture, Natural Resources Conservation Service, unless otherwise stated by this Storm water management plan.

The preparation of Stormwater Pollution Prevention Plans shall follow the requirements of this Storm water management plan and the procedures outlined in the latest edition of the "Illinois Procedures and Standards for Urban Soil Erosion and Sediment Control" (commonly known as the "Greenbook"), which is hereby incorporated into this Storm water management plan by reference.

Practice standards and specifications for measures outlined in the Stormwater Pollution Prevention Plan shall follow the requirements of this Storm water management plan and be as least as protective as criteria in the latest edition of the "Illinois Urban Manual: A Technical Manual Designed for Urban Ecosystem and Enhancement", which is hereby incorporated into this Storm water management plan by reference.

In instances where BMPs are not included in the Illinois Urban Manual, design criteria found in IDOT standard specifications or other reference manuals may be used with the approval of the Village.

General Erosion and Sediment Control Design Features.

The following principles shall apply to all construction undertaken under the authorization of a Class 2 Grading and Drainage Permit.

- 1. New development or redevelopment shall be designed to limit the potential for erosion.
- 2. Special precautions shall be taken to protect highly erodable areas and watercourses, lakes, ponds, wetlands, and other natural resources.
- 3. Special precautions shall be taken to prevent damages resultant from any necessary development activity within or adjacent to any stream, lake, pond or wetland. Preventive measures shall reflect the sensitivity of these areas to erosion and sedimentation.
- 4. The area of disturbance onsite at any one time shall be limited to 20-acres. An additional 20-acres (a maximum of 40-acres of disturbance at any one time) may be stripped in order to balance cut and fill onsite. No additional area may be open without permission of the Administrator until the previously disturbed areas have been temporarily or permanently stabilized. All disturbed areas shall be stabilized within 14 days of final grading or when left idle for more than seven days. Maintained haul roads and the area of sediment basins, site runoff storage facilities and any permanently stabilized areas are excluded from this limitation.

- 5. Sediment basins or traps, filter barriers, diversions, and any other appropriate sediment or runoff control measures shall be installed prior to site clearing and grading and maintained to remove sediment from run-off waters from land undergoing development.
- 6. In the design of erosion control facilities and practices, aesthetics and the requirements of continuing maintenance must be considered.
- 7. Provisions shall be made to accommodate the increased run-off caused by changed soil and surface conditions during and after development. Drainageways should be designed so that their final gradients and the resultant velocities and rates of discharge will not create additional erosion on-site or downstream.
- 8. Permanent vegetation and structures shall be installed and functional as soon as practical during development. Disturbed areas shall be stabilized with approved permanent measures within seven (7) calendar days following the end of active disturbance or redisturbance consistent with the following criteria:
 - a. Appropriate permanent stabilization measures shall include seeding, mulching, sodding, with non-vegetative measures as a last resort.
 - b. Areas having slopes greater than twelve percent (12%) shall be stabilized with sod, mat, or blanket in combination with seeding or equivalent.
- 9. Those areas being converted from agricultural purposes to other land uses shall be vegetated with an appropriate protective cover prior to development.
- 10. All waste generated as a result of site development activity shall be properly disposed of and shall be prevented from being carried off the site by either wind or water.
- 11. All construction sites shall provide measures to prevent sediment from being tracked onto public or private roadways.
- 12. All temporary soil erosion and sediment control practices shall be maintained to function as intended until the contributing drainage area has been permanently stabilized at which time they shall be removed within thirty (30) days after final site stabilization.

Materials and Construction Notes.

Materials and construction notes for BMPs shall be at least as protective as criteria in the Illinois Urban Manual. In instances where BMPs are not included in the Illinois Urban Manual, criteria found in IDOT standard specifications or other reference manuals may be used with approval of the Village.

Soil Grading and Drainage Plan Requirements.

A soil grading and drainage plan, including a narrative shall be submitted showing all measures necessary to meet the objectives of this Storm water management plan throughout all phases of construction. The development of a soil grading and drainage plan shall follow the requirements of this Storm water management plan and the procedures in

the latest edition of the "Illinois Urban Manual" which is hereby incorporated into this Storm water management plan by reference. The Village may waive specific requirements for the content of submissions upon finding that the information submitted is sufficient to show that the work will comply with the objectives and principles of this Storm water management plan. Permanent soil erosion and sediment control features needed at the completion of any development site shall be included in the submittal.

The submitted soil grading and drainage plan shall include:

- 1. <u>Mapping and Descriptions</u>. The existing and proposed erosion and sediment control features of the property and immediate vicinity including:
 - a. Items as required for the Grading and Drainage permit as required.
 - b. Location of the slope disturbance line and special precautions to be taken in any areas disturbed on the slope side of the slope disturbance line.
 - c. Location and description of the soil erosion and sediment control measures to be employed during construction.
 - d. The predominant soil types on the site, their location, and their limitations for the proposed use as defined by the U.S.D.A. Natural Resources Conservation Service (NRCS).
 - e. Location and description, including standard details, of all sediment control measures and specifics of sediment basins and traps, including outlet details.
 - f. Location and description (specification) of all soil stabilization and erosion control measures.
 - g. Location and description of all runoff control measures, including diversions, waterways, and outlets.
- 2. Larger sites, at the discretion of the appropriate jurisdiction official, and those requiring a Stormwater Pollution Prevention Plan (SWP3), may also require the following:
 - a. Location and description of methods to prevent tracking of sediment off-site including construction entrance details, as appropriate.
 - b. Description of dust and traffic control measures.
 - c. Provisions for maintenance of control measures, including type and frequency of maintenance, easements, and estimates of the cost of maintenance.
 - d. Identification (name, address, and telephone) of the person(s) or entity which will have legal responsibility for maintenance of soil erosion and sediment control structures and measures during development and after development is completed.

Site Development Requirements.

On-site sediment control measures, as specified by the following criteria, shall be constructed as specified in the referenced handbooks, and functional prior to initiating clearing, grading, stripping, excavating or fill activities on the site.

- 1. For new developments or re-developments of more than one (1) acre but less than five (5) acres, a temporary sediment trap or equivalent control measure shall be constructed at the downslope point of the disturbed area. Temporary sediment traps shall be designed in accordance with the Illinois Urban Manual.
- 2. For new developments or re-developments of greater than five (5) acres, a temporary sediment basin or equivalent control measure shall be constructed at the down slope point of the disturbed area. Temporary sediment basins shall be designed in accordance with the technical reference manual.
- 3. To the extent possible or as otherwise regulated in this Storm water management plan all desirable trees eight (8) inches in diameter (measured at 4.5 ft. dbh) and larger shall be protected for their present and future value for erosion protection and other environmental benefits. Trees that have been selected for preservation shall be protected following criteria in the Illinois Urban Manual prior to the beginning of any clearing, grading, stripping, excavation, or filling of the site. A "No" construction zone shall be established and marked at the perimeter of the dripline of each tree which is to be preserved.
- 4. Stormwater conveyance channels, including ditches, swales, and diversions, and the outlets of all channels and pipes shall be designed and constructed as regulated in this Storm water management plan. All constructed or modified channels shall be stabilized within forty-eight (48) hours, consistent with the following standards and as required in the referenced handbooks:
 - a. For grades up to four percent (4%), seeding in combination with mulch, erosion blanket, or an equivalent control measure shall be applied. Sod or erosion blanket or mat shall be applied to the bottom of the channel.
 - b. For grades of four to eight percent (4-8%), sod or an equivalent control measure shall be applied in the channel.
 - c. For grades greater than eight percent (8%), rock, riprap, or an equivalent control measure shall be applied over filter fabric or other type of soil protection, or the grade shall be effectively reduced using drop structures.
- 5. Land disturbance activities in stream channels shall be avoided, where possible, or as regulated this Storm water management plan. If disturbance activities are unavoidable, the following requirements shall be met.
 - a. Construction vehicles shall be kept out of the stream channel to the maximum extent practicable. Where construction crossings are necessary, temporary crossings shall be constructed of non-erosive material, such as riprap or gravel.

- b. The time and area of disturbance of stream channels shall be kept to a minimum. The stream channel, including bed and banks, shall be stabilized within 48 hours after channel disturbance is completed, interrupted, or stopped.
- c. Whenever channel relocation is necessary, the new channel shall be constructed under dry conditions and fully stabilized before flow is diverted, incorporating meanders, pool and riffle sequence, and riparian planting.
- 6. Storm sewer inlets and culverts shall be protected by sediment traps or filter barriers meeting accepted design standards and specifications.
- 7. Soil storage piles containing more than ten (10) cubic yards of material shall not be located with a downslope drainage length of less than fifty (50) feet to a roadway, drainage channel, or abandoned mine. Filter barriers, including straw bales, filter fence, or equivalent, shall be installed immediately surrounding the perimeter of the pile.
- 8. If dewatering devices are used, discharge locations shall be protected from erosion. All pumped discharges shall be routed through appropriately designed sediment traps or basins, or equivalent and shall not be deposited into an abandoned mine.
- 9. Each site shall have graveled (or equivalent) entrance roads, access drives, and parking areas of sufficient length and width to prevent sediment from being tracked onto public or private roadways. Any sediment reaching a public or private road shall be removed by shoveling or street cleaning (not flushing) before the end of each workday and transported to a controlled sediment disposal area.



Village of Bourbonnais Building Department 700 Main Street NW. Bourbonnais, IL 60914

Erosion Control for Homebuilders

Village of Bourbonnais

Controlling Erosion is Easy....But Important Because

Eroding construction sites are the leading cause of water quality problems in Illinois. For every acre under construction, about a dump truck and a half of soil washes into nearby lakes or streams.

Problems caused by this sediment include:

costs

Increased Flooding – Sediment build-up lowers the flow capacity of channels causing more frequent flooding in areas that rarely of never flooded in the past.

Water Quality Impairment – Sedimentladen runoff transfers nutrients and other pollutants to downstream lakes and rivers degrading aquatic habitats and increasing costs for water treatment.

Erosion control is important even for home sites of an acre or less. The material needed are easy to find and relatively inexpensive – straw, silt, fence, stakes, gravel, plastic tubes, and grass seed. Putting these materials to use in a straight forward process. Only a few controls are needed on most sites:

an an es, se

for

governments.

local.

Simple... but effective controls include.....

<u>Preserving</u> existing trees and grasses where possible;

<u>Silt fence</u> to trap sediment on the down slope sides of the lot and soil piles;

<u>Soil piles</u> located away from any road or waterways;

<u>Gravel drive</u> used by all vehicles to limit tracking of mud onto streets;

Financial burden to taxpayers – Sediment

that finds its way into streets, storm sewers,

and ditches results in additional maintenance

state,

and

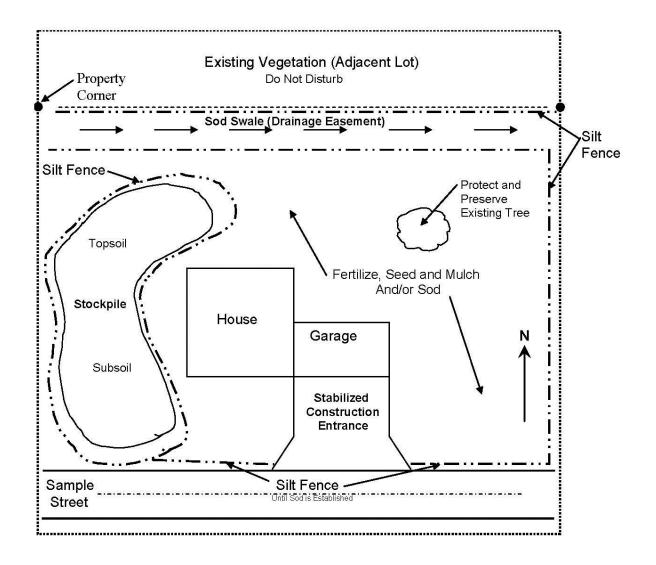
federal

Photo: Courtesy of USDA-NRCS—Plainfield

<u>Cleanup</u> of sediment carried off-site by vehicles or storms;

<u>**Downspout extenders**</u> to prevent erosion from roof runoff:

Re-vegetating the site as soon as possible.



WARNING – Extra measures may be needed if your site:

- ✓ Is within 300 feet of a stream or wetland
- ✓ Is within 1000 feet of a lake
- ✓ Has a waterway or ditch

- ✓ Is steep (slope of 12% or more)
- ✓ Received runoff from 10,000 sq. ft. or more of adjacent land
- ✓ Has more than an acre of disturbed ground

The fact sheet includes the diagram and step-by-step instructions needed by builders on most home sites. Additional controls may be needed for sites that have steep slopes, are adjacent to lakes and streams, receive a lot of runoff from adjacent land, or are larger than an acre.

Portions of this document were obtained from a publication by the Henry County Soil and Water Conservation District

SILT FENCES

Put up before any other work is done. Install on down slope enough to allow water to pond behind fence. Excavate a 6 inches wide by 6 inches deep trench along the contour of the slope. An additional 6 inches of fabric should extend along the bottom of the trench in the upslope direction. Inspect and repair once a week and after every 1/2 inch rain. Remove sediment if deposits reach one third the fence height. Maintain until a lawn is established, then remove.

SOIL PILES

Locate away from any down slope street, driveway, stream, lake, wetland, ditch or drainage way. Place a silt fence around all stockpiles. Temporary seeding such as annual rye or winter wheat, is recommend for piles during fall construction season.

STABILIZED CONSTRUCTION ENTRANCE

Install a single access "gravel drive" using 2-3 inch aggregate. Lay stone 6 inches deep, at least as wide as the ingress and egress (14 ft. minimum, and extend from the foundation to the street (30 ft. minimum). Use to prevent tracking mud onto the road by all vehicles. Maintain throughout construction.

SEDIMENT CLEANUP

By the end of each work day, sweep or scrape up soil tracked onto the road. By the end of the next work day after a storm clean up the soil washed off-site.

DOWNSPOUT EXTENDERS

Not required, but highly recommended. Install as soon as gutters and downspouts are complete to prevent erosion from roof runoff. Use plastic drainage pipe to route water to a grassed or paved area. Maintain until a lawn is established.

STORM SEWER INLET PROTECTION

Protect on-site storm sewer inlets with silt fences or equivalent measures. Inspect, repair and remove sediment deposits after every storm.

PRESERVE EXISTING VEGETATION

Wherever possible, preserve existing trees, shrubs and other vegetation. To prevent root damage, do not grade, place soil piles, or park vehicles near trees marked for preservation. Place plastic mesh or snow fence barriers around trees to protect the area below their branches.

SEEDING AND MULCHING

Spread 4-6 inches of topsoil. Fertilize and lime if needed according to soil test, or apply 25 lbs per 1000 square feet of 12-12-12-fertilizer. Seed with an appropriate mix for the site (see table on back page). Rake lightly to cover seed with 1/4 inch of soil -roll lightly. Mulch with straw (90 lbs per 1000 sq. ft.)

Anchor mulch by punching into the soil, watering or by using netting or other measures on steep slopes. Water gently every day or two to keep soil moist. Less watering is needed once grass is 2 inches tall. Add maintenance fertilizer annually in split application as needed for seeding.

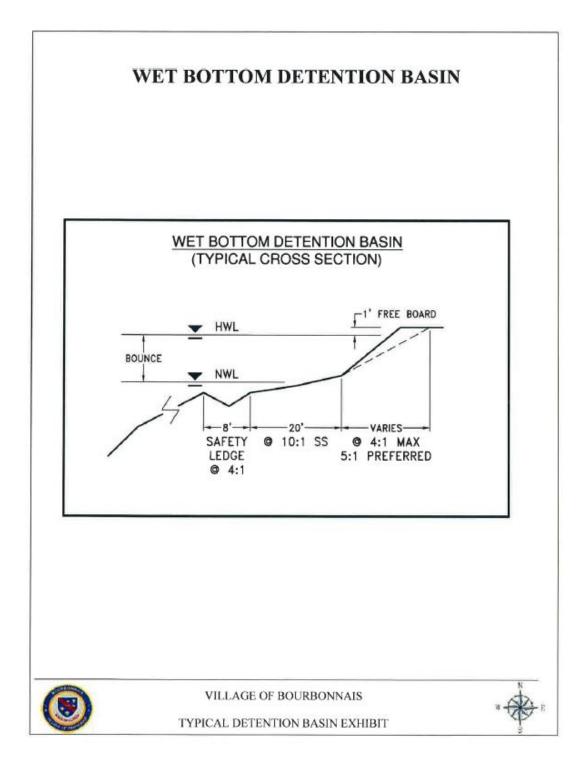
SODDING

Spread 4 to 6 inches of topsoil. Fertilize and lime if needed according to soil test (or apply 10 lb./1,000 sq.ft. of 10-10-10 fertilizer). Lightly water the soil. Lay sod. Tamp or roll lightly. On slopes, lay sod starting at the bottom and work toward the top, laying in a brickwork pattern. Peg each piece down in several places. Initial watering should wet soil 4 inches deep below sod (or until water stands 1 inch deep in a straight-sided container). Then water lightly every day or two to keep soil moist but not saturated for 2 weeks. Generally, the best times to sod or seed are early spring (April 1 - May 15) or fall (Aug. 1 - Sept. 15). Add maintenance fertilizer annually in split application as needed for sod.

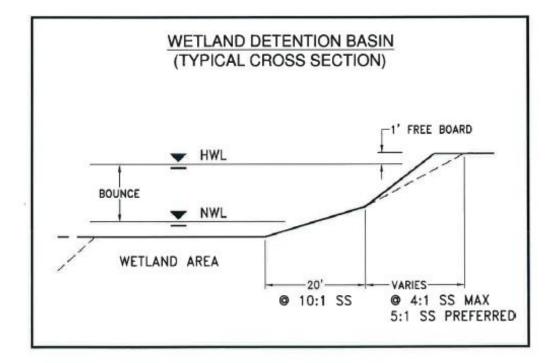
If construction is completed after September 15, final seeding should be delayed. Sod may be laid until November 15. Temporary seed (such as rye or winter wheat) may be planted until November 1 S. Mulch or matting may be applied after November 15, if weather permits. Silt fences must be maintained until final seeding or sodding is completed in spring (by June 1).

Typical Detention Basin Cross-Sections.

#1 – Wet Bottom Detention Basin



WETLAND DETENTION BASIN



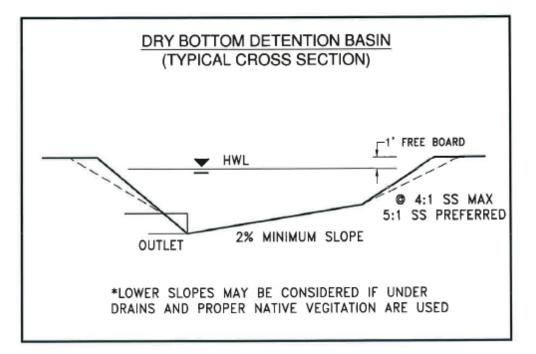


VILLAGE OF BOURBONNAIS

TYPICAL DETENTION BASIN EXHIBIT



DRY BOTTOM DETENTION BASIN





VILLAGE OF BOURBONNAIS

TYPICAL DETENTION BASIN EXHIBIT

