

Appendix D
Construction Site Storm Water Runoff Control

“Storm Water Management Standards Manual”

Storm Drainage Requirements for City of Oregon Improvements

Chapter 1151 Site Plan Review

STORM WATER MANAGEMENT STANDARDS MANUAL

BY THE MAUMEE RIVER REGIONAL STORM WATER COALITION
AND THE MAUMEE RIVER RAP URBAN RUNOFF ACTION GROUP



1ST EDITION

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Chapter 9: CONSTRUCTION SITE RUNOFF CONTROL

9.1 Introduction

Erosion and Sedimentation are naturally occurring geologic phenomena. Man's land development activities, however, have initiated severe, highly undesirable and damaging alterations in the natural cycle by drastically accelerating the erosion-sedimentation process. Present-day streams and rivers in NW Ohio carry much higher sediment loads than in the past. Significantly increased amounts of sand, silt, and clay wash into these waterways from farmland and urbanizing areas. During the construction process, soil is the most vulnerable to erosion by wind and water. This eroded soil endangers water resources by reducing water quality, and causing the siltation of aquatic habitat for fish and other desirable species. Eroded soil also necessitates repair of sewers and ditches, and the dredging of lakes.

9.2 National Pollution Discharge Elimination System (NPDES) Construction Permit Compliance

9.2.1 Permit Coverage

This permit will cover new and existing discharges composed entirely of storm water discharges associated with construction activity. Construction activities covered by this permit include any clearing, grading, excavation, grubbing and/or filling activities that result in the disturbance of one (1) or more acres of total land. Operations that result in the disturbance of less than one acre of total land, which are not part of a larger common plan of development, are exempt from coverage under this permit.

9.2.2 Notice Of Intent

Owners or developers of storm water discharges associated with construction activity must submit a Notice of Intent (NOI) to comply with Ohio Environmental Protection Agency's (EPA) or Michigan DEQ's Construction General Permit and provide a copy to (community) with their Storm Water Management Permit application.

9.3 Storm Water Pollution Prevention Plan

The five major phases of developing a SWPPP are (1) planning and organization; (2) assessment; (3) BMP selection and plan design; (4) implementation; and (5) evaluation and site inspection.

All development that disturbs greater than one (1) acre of land shall have a Storm Water Pollution Prevention Plan (SWPPP) including the following [*The same plan developed for the NPDES NOI (9.2) may be submitted*]:

9.3.1 Applicant Information

Name and telephone numbers of parties responsible for maintenance of erosion and sediment control practices.

9.3.2 Site Map

A map that identifies natural resources including: soils, forest cover, and resources protected under other chapters of this code. This map should be prepared at the same scale as the drainage plan (Chapter 3: *Permit Submittal Requirements*).

9.3.3 Installation and Maintenance Schedule

A sequence of construction on the development site including stripping and clearing, rough grading, construction of utilities, infrastructure and buildings and final grading and landscaping. Sequencing shall identify the expected date on which clearing will begin, the estimated duration of exposure of cleared areas, areas of clearing, installation of temporary erosion and sediment control measures, and establishment of permanent vegetation.

9.3.4 Erosion and Sediment Control Measures

All erosion and sediment control measures necessary to meet the objectives of this local regulation throughout all phases of construction and after completion of development of the site. Depending upon the complexity of the project, the drafting of intermediate plans may be required at the close of each season.

9.3.5 Re-vegetation Plan

Seeding mixtures and rates, types of sod, method of seedbed preparation, expected seeding dates, type and rate of lime and fertilizer application, and kind and quantity of mulching for both temporary and permanent vegetative control measures.

9.4 Soil Erosion and Sediment Control Measures

For any land disturbance activity disturbing greater than one (1) acre of land, the following criteria shall be met:

9.4.1 Minimize Disturbance

Soil disturbance shall be conducted in such a manner as to minimize erosion. Wherever feasible, natural vegetation should be retained and protected. The smallest practical area of raw land should be exposed at any one time during active construction. Soils stabilization measures shall consider the time of year, site

INTEROFFICE

MEMORANDUM

From: Paul Roman, P.E.

to: TMACOG Stormwater Policy Board
subject: Storm Drainage Requirements for City of Oregon Improvements
date: July 7, 1998

The following ordinances and storm drainage requirements are used by the Department of Public Service in site plan review for both residential and non-residential improvements.

I. Storm Drainage Codified Ordinances (attached)

Chapter 909 "Sidewalks, Curbs and Driveways", Section 909.18 Drainage

Chapter 1177 "Improvements", Sections: 1177.02 Grading, 1177.03 Streets, 1177.06 Storm Sewers

Chapter 1309 "General Requirements", Section 1309.01 Grading

II. Additional Storm Drainage Requirements

Detention

On site detention or retention shall be required for all site improvements, excluding single residential lots, in which the degree of impervious area (roofs, driveways, streets, etc.) is increased from pre-developed conditions. Detention volume shall be based on 5-year pre-developed outflow and a 25-year post developed inflow. Note that full land area is used to determine the allowable outflow.

On site detention for single residential lot improvements shall be provided by requiring roof drainage to drain by overland flow only in lieu of connecting downspouts directly to public catch basins or storm sewers. Downspouts shall terminate above ground and extend to a minimum of 5 feet from the buildings.

Storm Interceptors and Ditches

Storm Sewer Interceptors or ditches shall be sized for a 20 year storm frequency in accordance to the City of Oregon's 1974 Storm Drainage Study. The Study's 20-year storm flows are based on full or ultimate development.

Note that the 1974 Study gives recommendations, per watershed, regarding future development and proposed improvements. A comparison of the 1974 Study's recommendations, to a proposed storm design, is sometimes difficult if the proposed design involves a change in development, stream alignment, or cross sectional area. The main focus in reviewing a proposed storm interceptor or ditch improvement is to confirm that the design will produce 20 year backwater elevations less than or equal to the 20 year hydraulic profile shown in the 1974 Study.

Storm Sewer Construction

Storm sewer construction shall be in accordance to the current ODOT Construction and Materials Specifications.

Anyone having questions or comments regarding the above information should contact the Director of Public Service office at 419/698- 7047.

Paul Roman, P .E.
Deputy City Engineer

PR:cjb attachment

909.18 DRAINAGE.

Drainage for sidewalks, driveways or curb openings shall be provided by grading between the sidewalk and the curb, ditch or other drainage structure and, if deemed necessary by the Director of Public Service, by providing catch basins or other drainage structures at such places as may be specified by the Director and the cost thereof shall be borne by the owner of the property abutting the right of way. (Ord.110-1959. Passed 11-9-59.)

1177.02 GRADING.

(a) All lots shall be graded so that all storm water shall drain therefrom.

(b) The proposed storm sewer system shall then be evaluated for a storm hydraulic grade line based on a ten year storm frequency.

(Ord.175-1995. Passed 9-25-95.)

1177.03 STREETS.

(a) All streets within a subdivision shall be improved with a hard surface pavement with adequate drainage at a minimum width of twenty-eight feet, and there shall be a curb along each side of such surfacing.

(b) Additional pavement lanes may be required for residential, commercial and industrial developments to provide acceleration-deceleration lanes, and/or left turn lanes.

(c) A greater width of pavement not to exceed forty feet may be required in commercial, industrial or special apartment developments.

(d) Minimum pavement elevations should be at a hydraulic grade line of a ten-year frequency storm. (Ord. 164-1984. Passed 1-28-85.)

1177.06 STORM SEWERS.

(a) Storm sewers shall be designed to flow just full for the five (5) year intensity-duration-frequency storm using the Rational Method. The minimum pavement gutter elevations shall be at or above the hydraulic grade line for a ten (10) year frequency storm.

For the ten (10) year hydraulic gradient checks, minimum starting point elevation, when a proposed storm drainage system outlets into a nearby stream or ditch, shall be based on the twenty (20) year high water elevation as per "Comprehensive Ditch Plan", the approved storm sewer and ditch survey for the City. If information is unavailable the high water elevation shall be determined by following sound engineering principles subject to approval by the Director of Public Service.

(b) All structures within a new street right of way shall be designed to adequately handle the storm drainage of the proposed improvement as determined by the Director of Public Service. (Ord.175-1995. Passed 9-25-95.)

1309.01 GRADING.

(a) Grade. The finished grade at the base of the dwelling shall conform with that of adjacent dwellings but shall not be less than twelve inches above the curb; nor less than twelve inches above the crown of the pavement of streets without curbs, provided that the Commissioner of Building and Zoning Inspection may allow a lower minimum limit where the property owner can show by plans and written statements that a lower minimum elevation can be utilized without impairing the intent or purpose of these regulations or the desirable general development of the area when considering drainage, the elevation of neighboring structures and such other considerations as pertinent therewith.

(b) Roadside Drainage. Along streets without curbs, front yards shall be graded so as to maintain roadside drainage. Where there is a storm sewer, yards shall be graded to have a swale not less than six inches below the pavement elevation and approximately in line with and graded toward the nearest catch basin. Driveway tile shall be not less in size and strength than twelve inch reinforced concrete pipe.

(c) Protection of Adjoining Property. Whenever a lot or plot is graded to a higher or lower level than adjacent property, suitable retaining walls, curbs or other protection approved by the Commissioner of Building and Zoning Inspection shall be provided if necessary to preserve such adjacent property from any damage.

(d) Plan Submittal. A grading and drainage plan shall be submitted to and approved by the Safety Service Director prior to the start of any construction. All grading and required drainage shall be installed prior to the issuance of a final certificate of occupancy permit. (Ord. 186-1992. Passed 11-23-92.)

CHAPTER 1151
Site Plan Review

1151.01	Purpose.	1151.03	Review guidelines.
1151.02	Plan required.	1151.04	Approval of plans.

CROSS REFERENCES

Site plan defined - see P. & Z. 1103.83

General planned development guides - see P. & Z. 1131.02, 1137.02

1151.01 PURPOSE.

The principal objective of this Zoning Ordinance is to provide for the orderly use and placement of land and buildings in order to maximize the social, economic and physical welfare of the City. Most uses are allowed within a specific district, with regulations applying to all uses allowed within the district. Some activities, however, have characteristics which require specific conditions in order to ensure their own proper functioning or to avoid possible adverse effects to adjacent property. Even though they are encouraged a site plan must be submitted and approved.

All site plans shall be approved by the Director of Public Service, the Commissioner of Building and Zoning, Commissioner of Water and Wastewater Treatment, the Commissioner of Streets, and the Chief of the Fire Prevention Bureau as set forth in this chapter at such time that the use is approved or a building permit is issued for new construction or alteration. (Ord. 269-2001. Passed 12-17-01.)

1151.02 PLAN REQUIRED.

Whenever a site plan is required by Council, the Planning Commission or the Board of Zoning Appeals under the provisions of this Zoning Ordinance, the following shall be submitted for review and approval.

(a) Basic Requirements.

- (1) A formal letter of submittal shall accompany the site plan. The letter shall provide the name, address and phone number of any parties who should be informed of progress on the request, e. g., land owner, attorney, architect, engineer, developer, etc.
- (2) All site plans shall have a title indicating the type of request being made, e. g., request for more than one main building on a parcel; zoning change.
- (3) The site plan shall be accompanied by a complete legal description of the subject property.
- (4) The site plan shall indicate the scale of the drawing and should use an engineer's scale.
- (5) The site plan shall have a north arrow pointing either toward the top of the drawing or to the left side of the drawing, preferably toward the top.
- (6) All regulations pertaining to setbacks from and screening along adjoining property shall apply. All regulations pertaining to setbacks along streets, between buildings and from drives and parking areas shall apply.
- (7) Along with the application there shall be a submission of:
 - A. Nine blackline prints of the site plan; and
 - B. The original tracing, submitted at a size ranging from 8 ½ inches by 11 inches or larger.

(b) Specific Requirements.

- (1) The site plan shall show the zoning classification, and proposed change, of the subject property and all abutting property.
- (2) The site plan shall indicate the distance of existing and proposed structure(s) from right-of-way line of all adjacent thoroughfares and show front, side and rear yard distances to the structure(s).
- (3) The site plans shall indicate the exact dimensions of the property in question, and show existing structure(s) with dimensions and proposed structure(s) with dimensions. The site plan shall indicate building removals and other alterations, if any, of existing property.
- (4) The site plan shall indicate, by name, all adjacent thoroughfares. The site plan shall show both right-of-way and pavement width, measures from the center line of the right of way.
- (5) The site plans shall indicate the locations, size (height) and material of all existing and proposed fencing on the subject property.
- (6) The site plan shall indicate the location, dimensions and illuminating power of all existing and proposed lighting on the subject property.
- (7) The site plan shall show the location, dimensions and illuminating characteristics, internal and/or external, of existing or proposed signs on the property.

- (8) The site plan shall indicate the widths of existing or proposed landscaping, screening, sidewalks and setbacks.
- (9) Site plans shall show any ditches, creeks or other natural features that may affect development of the property in question.
- (10) The site plan shall indicate existing or proposed off-street parking, trash collection areas, driveways and recreational areas with complete dimensions.
- (11) The site plan for a proposed drive-up establishment shall indicate where vehicles can stack and how many vehicles can stack at one time.
- (12) A landscape plan indicating the location and species of plant materials, shall be submitted as part of the site plan.
- (13) The plans shall include both existing and proposed spot elevations of a maximum spacing of a one hundred (100) foot grid. The site shall drain surface water to an approved watercourse or pipe enclosure as reviewed and approved by the Service Director.
- (14) The plan shall show the location of proposed and any existing curb cuts, radii on all curbs and streets, water lines and hydrant locations, and sewer line locations. Curb cuts shall be measured at the curb, and throat widths shall be indicated.
- (15) A traffic and circulation plan shall show the location and design of all exits and entrances to the site, circulation drives, and parking areas showing the number of proposed parking spaces. If the off-street parking is physically joined with abutting property, then circulation between the properties shall be shown.
- (16) The site shall provide adequate access from public thoroughfares and shall provide adequate interior circulation and access to buildings and parking areas. The design and location of access points, drives and parking shall be subject to review and approval by the Service Director. Driveways and parking areas shall be hard surfaced and dustless.
- (17) The elevation of any existing flood data shall be noted on all drawings for sites which fall within the affected area of a watercourse or shore line.
- (18) Additional reasonable requirements concerning the protection of adjoining, activities and of setbacks, screening, lighting, signs, drives or circulation and of environmental protection measures may be set by the Planning Commission or Council.

(Ord. 164-1984. Passed 1-28-85; Ord. 175-1995. Passed 9-25-95.)

1151.03 REVIEW GUIDELINES.

The following principles shall guide the exercise of site planning review by the City:

- (a) The natural topographic and landscape features of the site shall be incorporated into the plan and the development.
- (b) Buildings and open spaces should be in proportion and in scale with existing structures and spaces in the area within 300 feet of the development site.
- (c) A site that has an appearance of being congested, over-built or cluttered can evolve into a blighting influence and therefore such should not be congested, over-built or cluttered.

- (d) Open spaces should be linked together.
- (e) Natural separation should be preserved or created on the site by careful planning of the streets and clustering of buildings using natural features and open spaces for separation. Existing vegetation removal should be kept to a minimum.
- (f) Screening of intensive uses should be provided by utilizing landscaping, fences or walls to enclose internal areas.
- (g) Buildings should be sited in an orderly, non-random fashion. Long, unbroken building facades should be avoided.
- (h) In connection with the siting of mid-rise and high-rise buildings, the location should be oriented to maximize the privacy of the occupants of adjacent buildings.
- (i) Short loop streets, cul-de-sacs and residential streets should be used for access to low density residential land uses in order to provide a safer living environment and a stronger sense of neighborhood identity.
- (j) Street location and design shall conform to existing topographic characteristics. Cutting and filling shall be minimized in the construction of streets. Grading next to intersections should be as flat as possible for traffic safety.
- (k) Pedestrian circulation in non-residential areas should be arranged so that off-street parking areas are located within a convenient walking distance of the use being served. Handicapped parking should be located as near as possible to be accessible to the structure. Pedestrian and vehicular circulation should be separated as much as possible, through crosswalks designated by pavement marking, signalization or complete grade separation.
- (l) Path and sidewalk street crossings should be located where there is a good sight distance along the road, preferably away from sharp bends or sudden changes in grade.
- (m) Parking lots and garages should be located in such a way as to provide safe, convenient ingress and egress. Whenever possible there should be a sharing of curb cuts of more than one facility. Parking areas should be screened and landscaped and traffic islands should be provided to protect circulating vehicles and to break up the monotony of continuously paved areas.
- (n) Drive through establishments such as restaurants and banks should be located to allow enough automobile waiting space for peak hour operation without interference with other parking lot circulation.
(Ord. 269-2001. Passed 12-17-01.)

1151.04 APPROVAL OF PLANS.

(a) Upon submission of the complete application for site plan review to the Zoning Inspector, it shall be reviewed pursuant to the guidelines and requirements of this chapter. No public notice or public hearing shall be required in conjunction with the review, the approval, approval with modifications or disapproval of the site plan.

(b) The Zoning Inspector shall act upon all site plans within 30 days after the receipt of the complete application from the applicant. The Zoning Inspector may approve, disapprove or approve with modifications the site plan as submitted. Within the said 30 day period, the Zoning Inspector may extend the said period for a period of time not to exceed an additional thirty days. (Ord. 269-2001. Passed 12-17-01.)