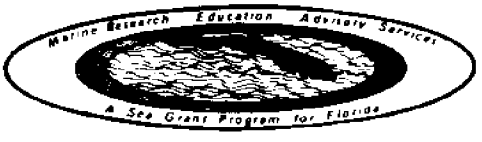

Florida Sea Grant

PROTECTING COASTAL WATERS: MODEL ORDINANCES FOR RUNOFF CONTROL AND SEWERAGE DISPOSAL

by

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INTRODUCTION

Water pollution abatement programs in the United States have been directed almost entirely toward the elimination of point sources of water pollution. Yet officials of the Environmental Protection Agency estimate that fifty percent or more of the nation's water pollution is waste picked up from the land by rainfall, which then reaches ground and surface waters through runoff and seepage and not through a pipe or other point source. It is becoming increasingly clear that water quality standards cannot be successfully achieved until nonpoint sources of water pollution are also significantly reduced.

Nonpoint water pollution, occurring primarily as a result of surface water runoff, is already threatening Florida's health and economy. Nutrients and sediments are damaging our lakes and streams by choking the water with algae and noxious weeds and robbing other aquatic organisms of their oxygen supply and breeding areas. Chemicals and heavy metals are killing or disrupting the reproduction of fish and other wildlife. Potable water supplies are being made unsafe for human use or more costly to treat.

The control of water pollution from nonpoint sources raises complex legal problems. Unlike pollutants from point sources which can be collected and treated or managed by the application of effluent limitations, the control of nonpoint source pollution requires an entirely different regulatory approach. Because of its dispersed and often random nature, nonpoint water pollution control necessarily involves the regulation of the land uses from which the pollution originates. Moreover, since land use control has been traditionally delegated to local governments, the responsibility rests most heavily upon Florida's counties and municipalities.

The task of regulating land uses to protect the quality of surface and ground waters must focus upon the most significant component of the nonpoint source pollution problem - surface water runoff. The volume and rate of

runoff as well as the pollutant content of runoff waters must be managed. Voluminous investigation and reporting has already been accomplished to identify the nonpoint pollution problem and to develop control program proposals. The result has been a general consensus that the keystone to effective management lies in preserving and protecting water quality control functions that are performed by natural systems such as vegetation, soils and wetlands. If land development and use can be required to conform to performance and design standards which incorporate the beneficial functions of natural systems or, at least, to minimize adverse impacts upon them to the greatest extent practicable, then the water pollution problems associated with uncontrolled runoff will be substantially reduced.

The establishment of this kind of regulatory program by a local government as a supplement to state-level regulation does not require the passage of new enabling legislation to provide the necessary authority. Instead, what is required is the creation of a well-organized and comprehensive program which utilizes existing authority, heretofore unexercised. Florida counties and municipalities have all the power they require to carry out local government except when expressly prohibited or inconsistent with state law. The prevention of environmental degradation is clearly within the police powers of local governments to protect the health, safety and welfare of their citizens.

In conjunction with the new approach required to tackle the problems of nonpoint source pollution, it also seems appropriate to re-examine our thinking generally as to the proper relationship between land ownership and environmental quality. In the past, the only land uses which were clearly understood to be harmful were those that resulted in quite obvious nuisances with direct and observable adverse impacts. Today, however, advances in scientific research and technology have revealed previously

unknown relationships and processes that are fundamental elements of environmental quality. It can now be shown that the cumulative subtle and indirect effects of indiscriminate land use threaten the environment and human health as well.

The ownership of land can, therefore, be looked upon as a form of trusteeship. The use one makes of his or her land ultimately affects the quality of life for everyone. This is especially true in the case of landowners upon whose property there exist wetlands, forests and groundwater recharge areas, to name just a few of the most important components of natural systems. Greater awareness of the value that is represented by natural systems should temper the reaction of landowners to restrictions which do no more than ask them to refrain from harming themselves and others.

MODEL SURFACE WATER RUNOFF CONTROL ORDINANCE

Introduction

Inadequately managed surface water runoff is an increasingly serious environmental problem in Florida. The waters which drain urban streets, construction sites, agricultural operations and other locations of intensive human use are often heavily polluted with nutrients, oxygen demanding materials, suspended solids, pesticides, heavy metals, petroleum products and other deleterious substances. Canals, ditches, and pipes carry the polluted water directly into Florida's streams, rivers, lakes or the ocean. Natural systems such as forests and wetlands, which could help to purify and filter the waters, are bypassed by drainage works or otherwise destroyed by development.

The natural hydrologic characteristics of surface water runoff can be severely altered by development of land. When native vegetation is removed and replaced with more impervious surfaces, less water is able to percolate through the soil and recharge groundwater. Instead, rainfalls result in greater runoff volume and velocity. Increasing the rate and volume of runoff increases the severity of flooding downstream during wet periods and excessively drains the land during dry periods. In addition, the productivity of estuarine systems dependent on particular levels of salinity can be drastically reduced. The erosion of soil by surface water runoff and consequent sedimentation of downstream areas is particularly destructive. Many pollutants are transported while physically attached to particles of sediment. Sediment also fills watercourses and waterbodies, reducing their capacity, and smothers aquatic life.

Many surface water management systems have the effect of draining wetlands. Wetlands exist at the interface between upland and aquatic systems and are the location of intensive biological activity. Their destruction eliminates many important functions, with harmful effects on both terrestrial and aquatic ecosystems. One important role of wetlands is as a buffer against rapid hydrologic fluctuations. They provide natural detention for flood waters, releasing them gradually. The severity of floods and the severity and duration of droughts are thus reduced. In some areas, wetlands are important sites of groundwater recharge. Another significant function of wetlands is purification of the waters which flow through them and thus serve to mitigate the pollution caused by development in the watershed. Finally, wetlands help to prevent siltation of downstream areas by slowing the flow of water, decreasing its ability to erode stream banks and allowing a portion of the sediment load to settle out.

Land can be developed and used in a manner that minimizes or avoids adverse environmental impacts. The proposed development can be planned to fit the natural features of the site to the greatest extent practicable rather than altering the site indiscriminately to accomodate the development. The Model Surface Water Runoff Control Ordinance was developed by the Eastern Water Law Center to encourage a more harmonious relationship between development and the natural environment.

The Ordinance is intended to implement development standards which

protect the functioning of important environmental processes which are significantly related to the quality and flow of surface water runoff. The commentary explains more fully how the various sections of the Ordinance operate to achieve this goal, but a brief summary will aid understanding. People who propose to engage in certain activities are required to prepare a Water Management Plan and obtain approval of it prior to commencing the activity. The Water Management Plan must contain sufficient information for the local agency to accurately determine whether the proposed activity would effectively manage surface water runoff. The local agency is encouraged to make a careful evaluation of the plan and the site. Approval of Water Management Plans will depend on whether the activity is likely to meet specified environmental performance and design standards. A manual to be prepared by the local agency will be available to help people select techniques that can be used to meet the performance and design standards.

This Model Surface Water Runoff Control Ordinance was developed through three drafts over a two year period. After the completion of each draft, copies were sent to water resource agencies and local governments all over the United States for review and comment. The feedback thus received was of tremendous help in the refinement of the Ordinance. Our continuous effort to resolve the implementation problems that were recognized by the reviewers made it possible for the Eastern Water Law Center to produce a regulatory mechanism that we believe surpasses the few ordinances and statutes that have been developed so far to manage surface water runoff.

The Model Ordinance, however, could not possibly be made to fit perfectly into all of the innumerable varieties of regulatory infrastructures

that exist at the local governmental level. There are local environmental programs, for example, where a specialized department handles all regulatory matters except the final decision to issue or deny a permit, which is specifically left to the governing board of the county or municipality. In other localities, the environmental agency has full authority to take final action on permit applications. There are still other programs where this responsibility is shared by the governing body and the specialized department. The diversity of such regulatory "styles" made the task of developing a model program quite difficult.

The Model Surface Water Runoff Control Ordinance is designed to be adapted to the unique characteristics of each local government organization. It is presumed that some provisions of the Model Ordinance may be modified or possibly even rejected altogether. Other provisions may have to be added. Nevertheless, the regulatory approach and the means that were formulated to accomplish surface water runoff control in the Model Ordinance should go a long way toward facilitating the creation of effective controls in areas where no controls presently exist.

MODEL URBAN SURFACE WATER RUNOFF CONTROL ORDINANCE

developed by the

Eastern Water Law Center
University of Florida College of Law

SECTION ONE: SHORT TITLE

This ordinance shall be known as the "Surface Water Runoff Control Ordinance".

Commentary

The title uses "surface water runoff" rather than "stormwater runoff" because use of the latter term implies that problems result only from the way runoff is handled following rain storms. In fact, problems result from the manner in which all surface water is managed.

SECTION TWO: FINDINGS OF FACTS

The _____ of _____ finds that uncontrolled
(governing authority) (local unit)

drainage and development of land has a significant adverse impact upon the health, safety and welfare of the community. More specifically,

(a) Surface water runoff carries pollutants into receiving water bodies, degrading water quality;

(b) The increase in nutrients such as phosphorus and nitrogen accelerates eutrophication of receiving waters, adversely affecting flora and fauna;

(c) Improperly channeling water increases the velocity of runoff, thereby increasing erosion;

(d) Construction requiring the alteration of natural topography and removal of vegetation increases erosion;

(e) Siltation of water bodies resulting from increased erosion decreases their capacity to hold and transport water, interferes with navigation, and harms flora and fauna;

(f) Impervious surfaces increase the volume and rate of surface water runoff, allowing less water to percolate into the soil and thereby decreasing groundwater recharge;

(g) Imporperly managed surface water runoff increases the incidence of flooding and the level of floods which occur, thereby destroying property and causing loss of life.

(h) Improperly managed surface water runoff interferes with the maintenance of optimum salinity in estuarine areas.

(i) Economic losses result from these adverse impacts on community waters.

(j) Future problems can be avoided if developers provide for drainage in accordance with this ordinance.

Commentary

Regulation under the police power must be reasonably related to protection of the public health, safety or welfare. Findings of fact identify the problems which the ordinance is intended to remedy. The reviewing court or an affected citizen should be able to read the findings of fact and understand the reasonable necessity for the imposition of the ordinance's requirements. The attached bibliography contains a listing of studies which have identified or described the adverse impacts of improperly managed surface water runoff on water quality and other environmental values.

SECTION THREE: OBJECTIVES

In order to protect, maintain, and enhance both the immediate and the long term health, safety and general welfare of the citizens of _____ (local unit), this ordinance has the following objectives:

(a) To encourage productive and enjoyable harmony between humanity and nature;

(b) To protect, restore, and maintain the chemical, physical and biological integrity of community waters;

(c) To prevent individuals, business organizations and governments from causing harm to the community by activities which adversely affect water resources;

(d) To encourage the construction of drainage systems which aesthetically and functionally approximate natural systems;

(e) To encourage the protection of natural systems and the use of them in ways which do not impair their beneficial functioning;

(f) To encourage the use of drainage systems which minimize the consumption of electrical energy or petroleum fuels to move water, remove pollutants, or maintain the system;

(g) To minimize the transport of pollutants to community waters;

(h) To maintain or restore groundwater levels;

(i) To protect, maintain or restore natural salinity levels in estuarine areas;

(j) To minimize erosion and sedimentation;

(k) To discourage drainage of wetlands;

(l) To prevent damage from flooding, while recognizing that natural fluctuations in water levels are beneficial;

(m) To protect, restore, and maintain the habitat of fish and wildlife; and

(n) To ensure the attainment of these objectives by requiring the approval and implementation of water management plans for all activities which may have a significant impact upon community waters.

Commentary

A listing of objectives serves a number of purposes. Goals are clearly identified. The scope of the program and its underlying policies are outlined. Finally, the statement of objectives aids in evaluating the effective-

ness of the program after implementation and determining what changes are needed. See T. Debo, Survey and Analysis of Urban Drainage Ordinances and a Recommended Model Ordinance 29-35, 49-52 (February, 1975) (WITS No. PB-240 817).

SECTION FOUR: DEFINITIONS

Unless specifically defined below, words or phrases shall be interpreted so as to give them the meaning they have in common usage and to give this ordinance its most effective application. Words used in the singular shall include the plural and the plural the singular; words used in the present tense shall include the future tense. The word "shall" connotes mandatory and not discretionary; the word "may" is permissive.

(a) "Adverse Impacts" are any modifications, alterations or effects on a feature or characteristic of community waters or wetlands, including their quality, quantity, hydrodynamics, surface area, species composition, living resources, aesthetics or usefulness for human or natural uses which are or may potentially be harmful or injurious to human health, welfare, safety or property, to biological productivity, diversity, or stability or which unreasonably interfere with the enjoyment of life or property, including outdoor recreation.

(b) "Clearing" means the removal of trees and brush from the land but shall not include mowing.

(c) "Detention" refers to the collection and storage of surface water for subsequent discharge at a rate which is less than the rate of inflow.

(d) "Developer" means any person who engages in development either

as the owner or as the agent of an owner of property.

(e) "Development" or "Development Activity" means:

(1) the construction, installation, alteration, demolition or removal of a structure, impervious surface, or drainage facility; or

(2) clearing, scraping, grubbing, killing or otherwise removing the vegetation from a site;

(3) adding, removing, exposing, excavating, leveling, grading, digging, burrowing, dumping, piling, dredging or otherwise significantly disturbing the soil, mud, sand or rock of a site.

(f) "Drainage Facility" means any component of the drainage system.

(g) "Drainage System" is the system through which water flows from the land. It includes all watercourses, waterbodies and wetlands.

(h) "Erosion" is the wearing or washing away of soil by the action of wind or water.

(i) "Flood" is a temporary rise in the level of any waterbody, watercourse or wetland which results in the inundation of areas not ordinarily covered by water.

(j) "Impervious Surface" means a surface which has been compacted or covered with a layer of material so that it is highly resistant to infiltration by water. It includes semi-impervious surfaces such as compacted clay, as well as most conventionally surfaced streets, roofs, sidewalks, parking lots and other similar structures.

(k) "Natural Systems" means systems which predominantly consist of or use those communities of plants, animals, bacteria and other flora and fauna which occur indigenously on the land, in the soil or in the water.

(l) "Owner" is the person in whom is vested the fee ownership,

dominion, or title of property, i.e., the proprietor. This term may also include a tenant, if chargeable under his lease for the maintenance of the property, and any agent of the owner or tenant including a developer.

(m) "Person" means any and all persons, natural or artificial and includes any individual, firm, corporation, government agency, business trust, estate, trust, partnership, association, two or more persons having a joint or common interest, or any other legal entity.

(n) "Predevelopment Conditions" are those conditions which existed before alteration, resulting from human activity, of the natural topography, vegetation and rate, volume or direction of surface or ground water flow, as indicated by the best available historical data.

(o) "Receiving Bodies of Water" shall mean any waterbodies, watercourses or wetlands into which surface waters flow.

(p) "Retention" refers to the collection and storage of runoff without subsequent discharge to surface waters.

(q) "Sediment" is fine particulate material, whether mineral or organic, that is in suspension or has settled in a waterbody.

(r) "Sedimentation Facility" means any structure or area which is designed to hold runoff water until suspended sediments have settled.

(s) "Site" means any tract, lot or parcel of land or combination of tracts, lots or parcels of land which are in one ownership, or are contiguous and in diverse ownership where development is to be performed as part of a unit, subdivision, or project.

(t) "Structure" means that which is built or constructed, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner but shall not include fences or signs.

(u) "Subdivide" means to divide a parcel of land, whether improved or unimproved, into three or more contiguous lots or parcels of land, whether by reference to a plat, by metes and bounds or otherwise, or, if the establishment of a new street is involved, any division of a parcel of land. Subdivision includes a resubdivision and, when appropriate to the context, relates to the process of subdividing or to the land subdivided.

(v) "Vegetation" means all plant growth, especially trees, shrubs, vines, ferns, mosses and grasses.

(w) "Water or Community Waters" means any and all water on or beneath the surface of the ground or in the atmosphere. It includes the water in any watercourse, waterbody or drainage system. It also includes diffused surface water and water percolating, standing or flowing beneath the surface of the ground, as well as coastal waters.

(x) "Water Management Plan" refers to the detailed analysis required by Section Six for each activity described in Section Five of this ordinance.

(y) "Watercourse" means any natural or artificial stream, river, creek, channel, ditch, canal, conduit, culvert, drain, waterway, gully, ravine, street, roadway, swale, or wash in which water flows in a definite direction, either continuously or intermittently, and which has a definite channel, bed or banks.

(z) "Waterbody" means any natural or artificial pond, lake, reservoir or other area which ordinarily or intermittently contains water and which has a discernible shoreline.

(aa) "Watershed" means a drainage area or drainage basin(s) contributing

SECTION FOUR: DEFINITIONS (cont.)

to the flow of water in a receiving body of water.

(bb) "Wetlands" means those areas where

(1) the soil is ordinarily saturated with water; or

(2) the dominant plant community is one or more of those species designated by the Florida Department of Environmental Regulation as identifying submerged lands or the transitional zone of submerged lands.

Commentary

Some of the definitions have been adapted from F. Maloney and D. Fernandez, Development of County and Local Ordinances Designed to Protect the Public Interest in Florida's Coastal Beaches, Florida Sea Grant Program Technical Paper (Grant no. 04-6-158-44055), July, 1977; Model Ordinances for Use by Local Governments, Metropolitan Council of the Twin Cities Area, St. Paul, Minn. (March, 1977); Environmental Policy Standards, Dekalb County Ga. Code, Ch. 6-A (1974); and Grading, Soil Erosion and Sedimentation Control Regulations, Knox County, Tenn; The Florida Coastal Management Program (Threshold Draft) prepared by the Florida Department of Environmental Regulation (Oct., 1978); Drainage Ordinance, Title XXIV Subdivision County Washington (1979); Ordinance No. 78-32, Volusia County, Florida (1978).

SECTION FIVE: APPLICABILITY

(a) Unless exempted pursuant to subsections (b) or (c) or waived pursuant to subsection (d), a Water Management Plan must be submitted and approved before:

(1) a plat is recorded or land is subdivided; or

(2) an existing drainage system is altered, rerouted, deepened, widened, enlarged or obstructed; or

(3) development is commenced.

(b) Exemptions. The following development activities are exempt from the Water Management Plan requirement:

(1) the development of less than 5 single family or duplex residential structures and their accessory structures

SECTION FIVE: APPLICABILITY (cont.)

(such as fences, storage sheds and septic tanks) in an existing subdivision;

(2) the development of one single family or duplex residential sturcture not in an existing subdivision;

(3) agricultural activity not involving the artificial drainage of land;

(4) any maintenance, alteration, use or improvement to an existing structure not changing or affecting quality, rate, volume or location of surface water discharge.

(c) Emergency Exemption. This ordinance shall not be construed to prevent the doing of any act necessary to prevent material harm to or destruction of real or personal property as a result of a present emergency, including but not limited to fire and hazards resulting from violent storms or hurricanes or when the property is in imminent peril and obtaining a permit is impractical. A report of any emergency action shall be made to the _____ by the owner or person in control of the property (local agency) which the emergency action was taken as soon as practicable, but no more than ten (10) days following such action. Remedial action may be required by the _____ subject to appeal to the _____ (local agency) (governing agency) in the event of dispute.

(d) Waivers.

(1) A waiver of the Water Management Plan requirement may be obtained by submitting an application on forms supplied by _____. The application shall contain: (local agency)

(i) the name, address and telephone number of the developer and owner; and

(ii) a description and a drawing of the proposed develop-

ment; and

(iii) the location of the development; and

(iv) any other information requested by _____ (local agency) that is reasonably necessary to evaluate the proposed development.

(2) The _____ (local agency) may grant a waiver if the application demonstrates the development is not likely to:

(i) significantly increase or decrease the rate or volume of surface water runoff;

(ii) have a significant adverse impact on a wetland, watercourse or waterbody;

(iii) significantly contribute to the degradation of water quality.

(3) The following types of development shall not be eligible to receive a waiver:

(i) shopping centers;

(ii) industrial or commercial facilities;

(iii) subdivisions;

(iv) roads;

(v) impervious surfaces greater than 10,000 square feet.

(e) Variances.

The _____ (local agency) may grant a written variance from any requirement of this ordinance using the following criteria:

(1) there are special circumstances applicable to the subject property or its intended use; and,

(2) the granting of the variance will not:

(i) significantly increase or decrease the rate or volume

of surface water runoff;

(ii) have a significant adverse impact on a wetland, watercourse or waterbody;

(iii) significantly contribute to the degradation of water quality;

(iv) otherwise significantly impair attainment of the objectives of this ordinance.

Commentary

Land should not be divided without consideration of environmental factors. For example, if there are wetlands on the property which detain and purify water, recharge groundwater and perform other valuable functions, then the land should be subdivided in a way that ensures their preservation. No lot should be created unless it contains enough dry upland area so it can be used without having to drain the wetland. Similarly, consideration must be given to reserving sufficient land for components of the drainage system, roads, utilities and other services. All of these decisions should be made with consideration of the impact on surface water runoff. Therefore, approval of a water management plan is required before recording a plat or subdividing land. Changes in existing drainage systems should be made only after careful evaluation and therefore prior approval of a water management plan is required before any such changes are made.

The ordinance is applicable to a broad range of development activities that have the potential to cause adverse impacts on water resources. It may not be possible or desirable, however, to regulate all development activity. Therefore provision is made for a system of exemptions and waivers. The difference between the two is that exemptions are granted in the ordinance, whereas waivers are granted by the local agency under the authority of the ordinance. There is no requirement for the submission of any information regarding exempted activities. The category should include only those activities that would clearly not have adverse impacts. Waivers may be used to relieve other types of development that are not likely to have significant adverse impacts from the requirement of submitting a water management plan. Unlike exemptions, however, some preliminary information regarding the proposed activity must be available to the agency for use in deciding whether a waiver is appropriate. Because certain types of development have such a high potential for causing significant adverse impacts, the local agency has no discretion to waive the requirement of submitting a water management plan with regard to them.

The specific listings in this section are only illustrative of the types of development that might be exempted or made ineligible to receive

a waiver. The problems, needs and regulatory capabilities of each local government vary greatly. This structure may be adapted to fit many diverse situations and to incorporate the experience of the local government.

Some examples were found in Drainage Ordinance, Title XXIV, Snohmish County, Washington (1979) and Ordinance No. 78-32, Volusia County, Florida (1978). An excellent review and commentary from the Florida Department of Environmental Regulation was of considerable help in developing this section.

SECTION SIX: CONTENTS OF THE WATER MANAGEMENT PLAN

(a) It is the responsibility of an applicant to include in the Water Management Plan sufficient information for the _____ (local agency) to evaluate the environmental characteristics of the affected ares, the potential and predicted impacts of the proposed activity on community waters, and the effectiveness and acceptability of those measures proposed by the applicant for reducing adverse impacts. The Water Management Plan shall contain maps, charts, graphs, tables, photographs, narrative descriptions and explanations and citations to supporting references, as appropriate to communicate the information required by this section.

(b) The Water Management Plan shall contain the name, address and telephone number of the owner and the developer. In addition, the legal description of the property shall be provided, and its location with reference to such landmarks as major waterbodies, adjoining roads, railroads, subdivisions, or towns shall be clearly identified by a map.

(c) The existing environmental and hydrologic conditions of the site and of receiving waters and wetlands shall be described in detail, including the following:

(1) the direction, flow rate, and volume of surface water runoff under existing conditions and, to the extent practicable, predevelopment conditions;

(2) the location of areas on the site where surface water collects or percolates into the ground;

(3) a description of all watercourses, waterbodies and wetlands on or adjacent to the site or into which surface waters flow. Information regarding their water quality and the current water quality classification, if any, given them by the Florida Department of Environmental Regulation shall be included;

(4) groundwater levels, including seasonal fluctuations;

(5) location of floodplains;

(6) vegetation;

(7) topography;

(8) soils.

(d) Proposed alterations of the site shall be described in detail, including:

(1) changes in topography;

(2) areas where vegetation will be cleared or otherwise killed;

(3) areas that will be covered with an impervious surface and a description of the surfacing material;

(4) the size and location of any buildings or other structures.

(e) Predicted impacts of the proposed development on existing conditions shall be described in detail, including:

(1) changes in water quality;

(2) changes in groundwater levels;

(3) changes in the incidence and duration of flooding on the site and upstream and downstream from it;

(4) impacts on wetlands; and

(5) impacts on vegetation.

(f) All components of the drainage system and any measure for the detention, retention, or infiltration of water or for the protection of water quality shall be described in detail, including:

(1) the channel, direction, flow rate, volume and quality of surface water that will be conveyed from the site, with a comparison to existing conditions and, to the extent practicable, predevelopment conditions;

(2) detention and retention areas, including plans for the discharge of contained waters, maintenance plans, and predictions of water quality in those areas;

(3) areas of the site to be used or reserved for percolating, including a prediction of the impact on groundwater quality;

(4) a plan for the control of erosion and sedimentation which describes in detail the type and location of control measures, the stage of development at which they will be put into place or used, and provisions for their maintenance;

(5) any other information which the developer or the _____ (local agency) believes is reasonably necessary for an evaluation of the development.

Commentary

This section specifies the information that must be provided to the local agency. The complexity and depth of information that is necessary for proper evaluation will depend on the nature of the site and the extent to which it will be altered. The Manual of Surface Water Management Practices discussed in Section Eleven should describe more specific techniques for obtaining and calculating the data required in the Water Management Plan. For example, a hydrologic accounting under predevelopment conditions is required by Section Six, subsection (c)(1).

The Manual should tell an applicant what conditions must be accounted

SECTION SIX: CONTENTS OF THE WATER MANAGEMENT PLAN (cont.)

for - drought, the 10 year storm, the 25 year storm, etc. The Water Management Plan is similar to an environmental impact assessment. The Water Management Plan contents were adapted in part from the Model Ordinances for Use by Local Governments, Metropolitan Council of the Twin Cities Area, St. Paul, Minn. (March 1977). See the commentary following Section Eleven for more information regarding the use of a practices manual.

SECTION SEVEN: PROCEDURES AND FEES

(a) Any person planning a development as defined in this ordinance, unless exempted, shall submit a Water Management Plan or an application for waiver to the _____ (local agency).

(b) Within ten (10) working days after submission of the completed waiver application, the _____ (local agency) shall notify the applicant that the waiver has been approved or denied and whether a Water Management Plan must be submitted by the applicant.

(c) A permit fee will be collected at the time the Water Management Plan or application for waiver are submitted and will reflect the cost of administration and management of the permitting process. The _____ (governing authority) shall establish, by resolution, a prorated fee schedule based upon the relative complexity of the project and it will be attached to this ordinance as Appendix A. The fee schedule may be amended from time to time by the _____ (governing authority) by resolution. Notice of such resolution shall be published no less than fifteen (15) days prior to adoption.

(d) Within forty-five (45) days after submission of the completed Water Management Plan, the _____ (local agency) shall approve, with or without specified conditions or modifications, or reject the Plan and shall notify the applicant accordingly. If the _____ (local agency) has

not rendered a decision within forty-five (45) days after Plan submission, it shall inform the applicant of the status of the review process and the anticipated completion date. If the Plan is rejected or modified, the _____ (local agency) shall state its reasons.

(e) The Water Management Plan shall not be approved unless it clearly indicates that the proposed development will meet the Performance Standards described in Section Eight and the Design Standards described in Section Nine, except where a variance has been granted pursuant to Section Five, Subsection (e), or where off-site management is granted pursuant to Section Ten.

(f) Inspections. No Water Management Plan may be approved without adequate provision for inspection of the property before development activity commences. The applicant shall arrange with the _____ (local agency) for scheduling the following inspections:

(1) Initial Inspection: prior to approval of the Water Management Plan;

(2) Bury Inspection: prior to burial of any underground drainage structure;

(3) Erosion Control Inspection: as necessary to ensure effective control of erosion and sedimentation;

(4) Finish Inspection: when all work including installation of all drainage facilities has been completed.

The _____ (local agency) shall inspect the work and shall either approve it or notify the applicant in writing in what respects there has been a failure to comply with the requirements of the approved Water Management Plan. Any portion of the work which does not comply

shall be promptly corrected by the applicant or the applicant will be subject to the penalty provisions of Section Thirteen.

(g) Appeals. An aggrieved applicant may appeal any final decision or determination of the _____ (local agency) under this ordinance to the _____ (special hearing examiner). The appeal shall be filed in writing within twenty (20) days of the date of official transmittal of the final decision or determination to the applicant, shall state clearly the grounds on which the appeal is based, and shall be processed in the manner prescribed for hearing administrative appeals under _____ (local or state code provision).

Commentary

The procedures involved in the Model Ordinance are straightforward. A proposed development is either exempted from the requirements of the ordinance, is granted a waiver from its requirements after a review of a written request for waiver, or requires the submission of a Water Management Plan. The fee structure will provide funds to pay the cost of administration, including costs of review and inspection.

If the Plan is not approved, the applicant will be told why and will know what he can do to meet the requirements of the ordinance. Even if the Plan is otherwise in good order, an initial site inspection will be necessary to determine whether the predevelopment conditions are actually as they have been described in the Plan and whether any considerations have been omitted. After approval of the Plan and commencement of the development, it will be important to inspect the progress and completion of the project to make certain that the approved Water Management Plan is followed.

The appeals procedure is admittedly sketchy because this area is one where differences between existing systems are great. It is contemplated that the procedure for hearing appeals will conform to an existing procedure for hearing appeals from building permit denials, for example. Some counties have a hearing examiner for these purposes and this type of appellate process seems to be a good one.

Some of the language in this section was adopted from Drainage Ordinance, Title XXIV, Snohomish County, Washington (1979); and Ordinance No. 78-32, Volusia County, Florida (1978).

SECTION EIGHT: PERFORMANCE STANDARDS FOR WATER MANAGEMENT PLANS

Water Management Plans must demonstrate that the proposed development or activity has been planned and designed and will be constructed and maintained to meet each of the following standards:

(a) Ensure that after development, runoff from the site resulting from rainfall approximates the rate of flow, volume and timing of runoff that would have occurred following the same rainfall under existing conditions and, to the extent practicable, predevelopment conditions, unless runoff is discharged into a Regional Drainage Facility as provided in _____;

(b) Maintain the natural hydrodynamic characteristics of the watershed;

(c) Protect or restore the quality of ground and surface waters;

(d) Ensure that erosion during and after development is minimized;

(e) Protect groundwater levels;

(f) Protect the beneficial functioning of wetlands as areas for the natural storage of surface waters and the chemical reduction and assimilation of pollutants;

(g) Prevent increased flooding and damage that results from improper location, construction and design of structures in areas which are presently subject to an unacceptable danger of flooding;

(h) Prevent or reverse salt water intrusion;

(i) Protect the natural fluctuating levels of salinity in estuarine areas;

(j) Minimize injury to flora and fauna and adverse impacts to fish and wildlife habitat;

(k) Otherwise further the objectives of this ordinance.

SECTION EIGHT: PERFORMANCE STANDARDS FOR WATER MANAGEMENT PLANS (cont.)

Commentary

The basic objective of the ordinance is to prevent development from adversely affecting certain characteristics and functions of the natural environment. The primary basis for evaluating a developer's proposal is to ascertain whether it is likely to meet that objective. A set of performance standards has been developed which incorporates the environmental processes that should be maintained. The local policy making body needs to determine what will be an acceptable danger in flooding for different types of uses. For example, it might be acceptable to build roads in areas that flood more frequently than sites which would be acceptable for hospitals.

SECTION NINE: DESIGN STANDARDS FOR WATER MANAGEMENT PLANS

To ensure attainment of the objectives of this ordinance and to ensure that performance standards will be met, the design, construction and maintenance of drainage systems shall be consistent with the following standards:

(a) Channeling runoff directly into waterbodies shall be prohibited. Instead, runoff shall be routed through swales and other systems designed to increase time of concentration, decrease velocity, increase infiltration, allow suspended solids to settle, and remove pollutants;

(b) Natural watercourses shall not be dredged, cleared of vegetation, deepened, widened, straightened, stabilized or otherwise altered. Water shall be retained or detained before it enters any natural watercourse in order to preserve the natural hydrodynamic of the watercourse and to prevent siltation or other pollution;

(c) The area of land disturbed by development shall be as small as practicable. Those areas which are not to be disturbed shall be protected by an adequate barrier from construction activity. Whenever possible, natural vegetation shall be retained and protected;

(d) No grading, cutting or filling shall be commenced until erosion and sedimentation control devices have been installed between the disturbed

area and waterbodies, watercourses and wetlands;

(e) Land which has been cleared for development and upon which construction has not commenced shall be protected from erosion by appropriate techniques designed to revegetate the area;

(f) Sediment shall be retained on the site of the development;

(g) Wetlands and other waterbodies shall not be used as primary sediment traps during development;

(h) Erosion and sedimentation facilities shall receive regular maintenance to insure that they continue to function properly;

(i) Artificial watercourses shall be designed, considering soil type, so that the velocity of flow is low enough to prevent erosion;

(j) Vegetated buffer strips shall be created or, where practicable, retained in their natural state along the banks of all watercourses, waterbodies or wetlands. The width of the buffer shall be sufficient to prevent erosion, trap the sediment in overland runoff, provide access to the waterbody and allow for periodic flooding without damage to structures;

(k) Intermittent watercourses, such as swales, should be vegetated;

(l) Retention and detention ponds shall be used to retain and detain the increased and accelerated runoff which the development generates. Water shall be released from detention ponds into watercourses or wetlands at a rate and in a manner approximating the natural flow which would have occurred before development;

(m) Although the use of wetlands for storing and purifying water is encouraged, care must be taken not to overload their capacity, thereby harming the wetlands and transitional vegetation. Wetlands should not be damaged by the construction of detention ponds;

SECTION NINE: DESIGN STANDARDS FOR WATER MANAGEMENT PLANS (cont.)

(n) The first one inch of runoff from impervious surfaces shall be retained on the site of the development;

(o) Runoff from parking lots shall be treated to remove oil and sediment before it enters receiving waters;

(p) Detention and retention areas shall be designed so that shorelines are sinuous rather than straight and so that the length of shoreline is increased, thus offering more space for the growth of littoral vegetation;

(q) The banks of detention and retention areas shall slope at a gentle grade into the water as a safeguard against drowning, personal injury or other accidents, to encourage the growth of vegetation and to allow the alternate flooding and exposure of areas along the shore as water levels periodically rise and fall;

(r) The use of drainage facilities and vegetated buffer zones as open space, recreation and conservation areas shall be encouraged.

Commentary

Design standards create limitations on the specific methods that can be utilized to achieve the performance standards of Section Eight. For example, the performance standard that requires runoff after development to approximate the rate, quantity and timing of runoff under natural, predevelopment conditions could be met by constructing a deep, rectangular pit to trap runoff which could then be pumped out on a schedule that approximates the natural, predevelopment hydroperiod. Obviously, that solution would not be desirable because the pit would be unsightly, usable for only that limited purpose and the use of the energy to run the pumps would be wasteful. Design standards constrain such undesirable solutions. The list of design standards included in the ordinance should be augmented when appropriate to meet the needs of a community.

One of the most common infirmities of local regulatory programs, and one which prompts many lawsuits, is the lack of clear guidelines to a regulatory board in its decision-making. The performance and design standards in the Model Ordinance create the necessary objective guidelines to guide decision-making. Some design standards were adapted or modified in part from Model Ordinances for Use by Local

Governments, Metropolitan Council of the Twin Cities Area, St. Paul, Minn. (March 1977); and Environmental Policy Standards, Dekalb Co. Ga. Code, Ch. 6-A (1974).

SECTION TEN: OFF-SITE DRAINAGE FACILITIES

The _____ (local agency) may allow surface water runoff that is otherwise of unacceptable quality or which would be discharged in volumes or at rates in excess of those otherwise allowed by this ordinance, to be discharged into drainage facilities off the site of development if each of the following conditions is met:

(a) It is not practicable to completely manage runoff on the site in a manner that meets the Performance Standards and Design Standards;

(b) The off-site drainage facilities and channels leading to them are designed, constructed and maintained in accordance with the requirements of this ordinance;

(c) Adequate provision is made for the sharing of construction and operating costs of the facilities. The developer may be required to pay a portion of the cost of constructing the facilities as a condition to receiving approval of the drainage plan;

(d) Adverse environmental impacts on the site of development will be minimized.

Commentary

The Model Ordinance was initially designed to regulate the land activities that affect runoff by requiring on-site management in every instance. However, it was later recognized that not only are there cases where on-site management is impracticable but it is often much less cost-effective for the developer and the local government for costs of drainage facilities and their subsequent maintenance. Therefore, Section Ten was drafted to provide a mechanism for providing off-site management as an alternative where it can be demonstrated to otherwise meet the objectives of the Model Ordinance.

SECTION ELEVEN: MANUAL OF SURFACE WATER MANAGEMENT PRACTICES

(a) The _____ shall compile a manual of Surface Water Management Practices for the guidance of persons preparing Water Management Plans, and designing or operating drainage systems. The Manual shall be updated periodically to reflect the most current and effective practices and shall be made available to the public;
(local agency)

(b) The Manual shall include guidance and specifications for the preparation of water management plans. Acceptable techniques for obtaining, calculating and presenting the information required in the water management plans shall be described;

(c) The Manual shall include guidance in the selection of environmentally sound practices for the management of surface water and the control of erosion and sediment. Specific techniques and practices shall be described in detail. However, the development and use of innovative techniques which emphasize the use of natural systems and implement the objectives of this ordinance shall be encouraged whether or not they are specifically listed in the Manual;

(d) The Manual shall also establish minimum specifications for the construction of drainage facilities. Construction Specifications shall be established in accordance with current good engineering practices;

(e) The _____ shall submit the Manual and subsequent revisions of it to the _____ for review and approval.
(local agency) (local authority)

Commentary

There are numerous effective techniques that have been developed for managing surface water runoff in an environmentally acceptable manner. Many local developers will be unfamiliar with these techniques, however. The local agency, therefore, should compile a manual to guide persons in the selection of appropriate techniques.

"The manual should not be a limiting document forcing the

> engineer to use standard designs and procedures. Several design examples should be given ... with latitude for the design engineer to use his imagination and engineering judgment. The manual should have the connotation of a document that suggests and informs rather than limiting or prescribing. In addition, the manual would give more complete definitions of some of the concepts included in the ordinance ...." (T. Debo, page 123, supra, at 38-39).

The use of innovative techniques should be encouraged, subject always to the review of the local agency as to whether they will be effective.

Construction Specifications are also required by the ordinance. These specifications would serve the same function with regard to the drainage system as a building code serves with regard to construction of a house. The requirements of construction specifications should ensure that the various components of the drainage system are constructed in a safe and dependable manner. The manual could draw largely from similar guides that have already been written. E.g., J. Tourbier and R. Westmacott, Water Resources Protection Measures in Land Development--A Handbook (April 1974), Water Resources Center, University of Delaware, Newark, Delaware 19711. The U.S. Department of Agriculture, Soil Conservation Service's Technical Release No. 55 entitled, "Urban Hydrology for Small Watersheds," and SCS National Engineering Handbook, Section 4, entitled, "Hydrology" would also be helpful. In addition, many states have developed best management practice manuals or study reports in conjunction with the Clean Water Act (P.L. 92-500) Section 208 Areawide Water Quality Management Planning requirement to develop nonpoint source pollution control programs. See, e.g., Stormwater Management, Procedures and Methods, Snohomish County, Washington (1977). These manuals and reports could be adopted in whole or part by local governments in the development of their own Manual of Surface Water Management Practices.

Some helpful reference materials include, EPA, Processes, Procedures and Methods to Control Pollution Resulting From All Construction Activity, EPA-430/9-73-007; Urban Stormwater Management and Technology, An Assessment, EPA-670/2-74-040; EPA, Preventive Approaches to Stormwater Management, EPA-440/9-77-001; EPA, Nonpoint Source Control Guidance, Hydrologic Modifications, (Feb. 1977); J.T. Wildrick, K. Kuhn, W.R. Kerns, Urban Water Runoff and Water Quality Control, Virginia Water Resources Center, Blacksburg, Va. (Dec. 1976); EPA, Methods and Practices for Controlling Water Pollution from Agricultural Nonpoint Sources, EPA-430/9-73-015.

SECTION TWELVE: MAINTENANCE

(a) Drainage facilities shall be dedicated to the _____ (governing authority) where they are determined to be appropriately a part of the _____ (local unit) maintained regional system or are unlikely to be adequately maintained by

SECTION TWELVE: MAINTENANCE (cont.)

the owner.

(b) The systems maintained by the owner shall have adequate easements to permit the _____ (local agency) to inspect and, if necessary, to take corrective action should the owner fail to properly maintain the system. Before taking corrective action, the _____ (local agency) shall give the owner written notice of the nature of the existing defects. If the owner fails within thirty (30) days from the date of notice to commence corrective action or to appeal the matter to the _____ (special hearing examiner), the _____ (local agency) may take necessary corrective action, the cost of which shall become a lien on the property until paid.

Commentary

A frequent comment that was recieved in response to our request for feedback on early drafts of the Model Ordinance was that maintenance problems can be a significant headache for local governments. Section Twelve provides alternatives for allocating the maintenance responsibility between the private and public sectors. No cost sharing is provided for maintenance here as it is in Section Ten for off-site facilities. There may be particular situations, however, where a cost contribution would be justified and easily administered by the local government that assumed maintenance responsibility. Articulating those situations, however, is extremely difficult. This section was adapted from Ordinance No. 78-32, Volusia County, Florida (1978).

SECTION THIRTEEN: ENFORCEMENT

(a) Nuisance. Any development activity that is commenced without prior approval of a Water Management Plan or is conducted contrary to an approved Water Management Plan as required by this ordinance, shall be deemed a public nuisance and may be restrained by injunction or otherwise abated in a manner provided by law.

(b) Civil and Criminal Penalties. In addition to or as an alternative to any penalty provided herein or by law, any person who violates the provisions of this ordinance shall be punishable by a fine of not less

than One Hundred Dollars ($100) nor more than One Thousand Dollars ($1,000) or by imprisonment in the county jail for a period not to exceed sixty (60) days, or by both such fine and imprisonment. Such person shall be guilty of a separate offense for each day during which the violation occurs or continues.

(c) The violator may be required to restore any altered conditions to the land to their undisturbed condition. In the event that restoration is not undertaken within a reasonable time after notice, the _____ (local) _____ (agency) may take necessary corrective action, the cost of which shall become a lien upon the property until paid.

(d) Notice of Violation. When the _____ (local agency) determines that development activity is not being carried out in accordance with the requirements of this ordinance, it shall issue a written notice of violation to the owner of the property. The notice of violation shall contain:

(1) the name and address of the owner or applicant;

(2) the street address when available or a description of the building, structure, or land upon which the violation is occurring;

(3) a statement specifying the nature of the violation;

(4) a description of the remedial actions necessary to bring the development activity into compliance with this ordinance and a time schedule for completion of such remedial action;

(5) a statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed;

SECTION THIRTEEN: ENFORCEMENT (cont.)

(6) a statement that the _____ determination or
(local agency)
violation may be appealed to the _____
(special hearing examiner)
by filing a written notice of appeal within fifteen (15) days of service of notice of violation.

The notice of violation shall be served upon the person(s) to whom it is directed either personally, in the manner provided for personal service of notices in court or by mailing a copy of the notice of violation by certified mail, postage prepaid, return receipt requested, to such person at his or her last known address.

A notice of violation issued pursuant to this section constitutes a determination from which an administrative appeal may be taken to the

_____.
(special hearing examiner)

Commentary

The local government is provided with a substantial arsenal for enforcing the provisions of the Model Ordinance. A violator is provided with considerable notice of the nature of his alleged violation and related matters. This section was drawn in part from Drainage Ordinance, Title XXIV, Snohomish County, Washington (1979) and Ordinance No. 78-32, Volusia County, Florida (1978).

SECTION FOURTEEN: SEVERABILITY

Each separate provision of this ordinance is deemed independent of all other provisions herein so that if any provision or provisions of this ordinance be declared invalid, all other provisions thereof shall remain valid and enforceable.

SECTION FIFTEEN: EFFECTIVE DATE

This ordinance shall become effective on _____.

BIBLIOGRAPHY

The adverse impacts of improperly managed surface water runoff are identified and described in the following reports and the sources cited therein. Since technological knowledge is expanding rapidly in this area, reference should be made to the most current literature.

1. Amy, G., et. al., Water Quality Management Planning For Urban Runoff (1974).

2. Darnell, Impacts of Construction Activities in Wetlands of the United States, EPA-600/3-76-045 (1976).

3. EPA, Methods For Identifying and Evaluating the Nature and Extent of Nonpoint Sources of Pollutants, EPA-430/9-73-014 (1973).

4. EPA, Nonpoint Source Control Guidance, Hydrologic Modifications (Feb. 1977).

5. EPA, Preventative Approaches to Stormwater Management, EPA-440/9-77-001 (1977).

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11. MacGill, R., et. al., Final Report on the Special Project to Prevent Eutrophication of Lake Okeechobee, Florida Division of State Planning (November 1976).

12. James M. Montgomery, Consulting Engineers, Inc., Forest Harvest, Residue Treatment, Reforestation and Protection of Water Quality, EPA-910/9-76-020 (1976).

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MODEL INDIVIDUAL SEWAGE DISPOSAL FACILITY CONTROL ORDINANCE

Introduction

Regulation of the collection and disposal of human waste has evolved considerably since the widespread use of water-flushed toilets began in London over a hundred years ago. In the more populated areas during that period, central collection and disposal systems were built to transport sewage away from the city. Today, we recognize that simply sending away our waste is no solution at all. Water quality control problems associated with waste treatment systems require close examination and their control mechanisms need continuing reevaluation to assure that the most effective alternatives are implemented. The Model Individual Sewage Disposal Facility Control Ordinance is the result of the Eastern Water Law Center's reevaluation of past regulatory techniques and investigation of the latest commentary in the field of sanitary engineering. It is our belief that the Model Ordinance provides a more effective program than is possible through application of the State of Florida's regulations alone and that it can be useful in meeting the water quality management mandate of the Federal Water Pollution Control Act Amendments of 1972.

In 1970, over 28% of America's housing units, or 19.5 million households, were not served by public sewage systems.[1] This means that more than 60 million Americans must provide their own sewage disposal system to manage the three billion gallons of domestic sewage which they cumulatively generate every day.[2] Yet, only about 32% of the land in the United States is suitable for onsite treatment and disposal.[3]

By far, the most common type of individual sewage disposal facility is the septic tank-soil absorption system (ST-SA). Such systems are not appropriate in densely populated areas and are not suitable to many geomorpholo-

gical conditions. Moreover, most ST-SA systems have a short operational life, failing within three years in most instances. Factors that contribute to the short life-span of these systems include inadequate site evaluation, faulty construction and installation, overloading and inadequate inspection programs. Absent these avoidable problems, an individual ST-SA system could give 20 years or more of efficient service.

In 1972, the Federal Government made water quality problem identification and control a national goal.[4] The Government initiated what later became the largest public works program in the nation by providing funds for planning and construction of municipal wastewater treatment facilities. In addition to federal efforts, the State of Florida has also taken steps to control water quality problems associated with sewage treatment and disposal.[6] It is the policy of the State to require that all individual sewage disposal systems "connect to a public or investor-owned sewerage system within 180 days from the date that such system becomes available."[7] Notwithstanding such a policy, over 25% of Florida's housing units are not connected to a central sewage disposal system.[8] The Florida Department of Health and Rehabilitative Services, pursuant to Chapter 381 of the Florida Statutes, has promulgated regulations for installation of septic tanks which control location, design and performance criteria.[9] While the standards thus established in Chapter 10 D-6 of the Florida Administrative Code (hereinafter 10 D-6) are important, several provisions do not provide optimum protection from surface and groundwater pollution.[10] In addition, no provisions insure the proper functioning of individual systems after installation. An ordinance which combines installation requirements with an ongoing maintenance program would provide much greater environmental protection.

Communities that are either too small to afford the cost of a central collection and treatment system or too sprawling to connect all suburban residences to an existing central system, should consider the problems generated by individual sewage disposal facilities and ask such pertinent questions as:

1. "How many onsite systems are there and how many are malfunctioning?
2. What is the nature of the malfunctioning and where are these units located?
3. When was each system installed?
4. What were the results of the percolation test(s) before installation? What are they now?
5. How frequently has each unit been pumped out? How frequently inspected? Is there a garbage grinder connected into the system?
6. Describe the physical areas, including soils and groundwater characteristics, where malfunctions are occurring. What is the depth to the groundwater table?
7. Would a local commercial or municipal organization with adequate pumping vehicles and a treatment facility properly utilized eliminate most of the malfunctions of the onsite systems?
8. Would a municipal organization be able to obtain ownership of, or easements to, each onsite system?
9. What are the costs of upgrading the systems, of providing maintenance service, etc.?
10. In areas where conditions vary and only a portion of the area is suitable for septic tank service, will a limited collection and treatment system suffice?
11. What is the estimated charge to each user for the onsite treatment system service if such service would be cost-effective?"[1]

The Model Ordinance which follows is designed to protect community waters from the pollution caused by malfunctioning or inadequate individual sewage disposal facilities through a local regulatory program which incorporates and supplements Chapter 10 D-6 regulations of the Department of Health and Rehabilitation Services.

FOOTNOTES

1. Randolph, The Next Steps in Protecting the Environment, in Individual Onsite Wastewater Systems 4 (N. McClelland ed. 1977) (hereinafter McClelland).

2. Id.

3. Goddard, The Social, Economic and Political Impacts of Onlot Sewage Disposal, in McClelland 15 at 17.

4. 33 U.S.C. § 1251 et seq. (1978).

5. Dearth, U.S. EPA, Response to PL-92-500 Relative to Rural Wastewater Problems, in McClelland 37.

6. Fla. Stat. § 381 et seq. (1977).

7. Fla. Stat. § 381.272 (6) (1977).

8. E. Locognata, The Role of the States in Guiding Land-Use Decisions (1974).

9. Fla. Admin. Code, Chapter 10 D-6 et seq. (1978).

10. The need for expansion and modification of the provisions of 10 D-6 is demonstrated by the recent establishment of a Septic Tank Ad Hoc Technical Committee which drafted alterations to 10 D-6. These draft suggestions have, to date, not been adopted by either the Department of Environmental Regulation or the Department of Health and Rehabilitative Services of the State of Florida.

11. Dearth, supra note 5 at 38.

MODEL INDIVIDUAL SEWAGE DISPOSAL FACILITY CONTROL ORDINANCE

by

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SECTION ONE: GENERAL PROVISIONS

§1.1 Problem Recognition.

The _____ of _____ hereby recognizes the need
(governing body) (local unit)

to protect its surface and groundwaters from pollution by inadequately treated sewage. It is further recognized that large quantities of inadequately treated sewage are released from individual sewage disposal facilities as a result of improper design, siting, construction, or maintenance of such facilities. Inadequately treated sewage endangers the health, safety, and welfare of the citizens of _____ and requires the expenditure of public funds to cor-
(local unit)

rect deficiencies.

Commentary

By identifying the problem to be solved, both the reasonableness of the exercise of regulatory authority and the intent of the local government is made clear.

§1.2 Objective.

To protect the health, safety and welfare of the citizens of _____
(local

_____, to protect and maintain the chemical, physical and biological integrity
unit)

of surface and ground waters in and adjacent to _____, and to reduce
(local unit)

the expenditures of public funds, there is hereby established an individual sewage disposal facility control program which incorporates and supplements the minimum standards of Chapter 10D-6 of the Florida Administrative Code.

This ordinance establishes minimum standards for the design, siting, construction and maintenance of individual sewage disposal facilities within _____.
(local unit)

Commentary

The language of this subsection is modeled after language in the Federal Water Pollution Control Act, P.L. 92-500. The statement of objective aids interpretation and guides discretion. Chapter 10D-6 is expressly incorporated so that an applicant clearly understands that all of its requirements remain applicable to him.

§1.3 Effective Date.

This ordinance shall take effect on _____, 19____.

§1.4 Scope.

All individual sewage disposal facilities within the jurisdiction of _____ shall be installed, modified, and maintained in accordance with
(local unit)
the provisions of this ordinance. Where provisions of this ordinance require more stringent controls than comparable provisions in Chapter 10D-6 of the Florida Administrative Code, the provisions of this ordinance will apply.

Commentary

Chapter 10D-6 is meant to establish minimum standards only. Where provisions of the Model Ordinance impose more stringent criteria for permit approval, they must be complied with before the local permit will be issued.

§1.5 When a Sewer Connection Is Required.

(a) Every building in which plumbing fixtures are installed shall be

connected to a public or private sewage collection system unless:

(1) no such system exists; or

(2) no such system is under construction and will be located within _____ feet of the building to be connected; or
(#)

(3) the additional wastewater that would be added to the sewage collection system by connecting the building would cause the total waste load entering the system to exceed the maximum waste load for which it was designed.

(b) In no instance shall any individual sewage disposal facility be installed where the waste load to be received by that system exceeds _____ gallons per day.
(#)

(c) When connection to a sewage collection system is not required by subsection 1.5(a), no wastewater may be discharged from the building in any manner other than into an individual sewage disposal facility pursuant to the provisions of this ordinance.

Commentary

This subsection clarifies and elaborates on similar language in 10D-6.21(6), Florida Admin. Code.

§1.6 Surface and Stormwater Disposal.

Surface and stormwaters shall not be discharged into an individual sewage disposal facility nor in any manner which could interfere with the functioning of the facility.

Commentary

Discharge of stormwater into an individual sewage disposal facility is likely to exceed its design capacity and would thus contribute to the malfunctioning of the system. This section is a modification of Maine Plumbing Code Part II, §4.4 Surface Water.

SECTION TWO: DEFINITIONS

(1) "Absorption Areas"--total surface area of bottom of trenches used for absorption field.

(2) "Absorption Field"--a system of openjointed or perforated pipe or alternate distribution units of approved type to receive flow from septic tank and designed to distribute effluent for oxidation and absorption by the soil.

(3) "Automatic Dosing Device"--pumps or siphons which discharge a specific volume of wastewater into a disposal area.

(4) "Domestic Water Supply"--one or more sources of potable water, including facilities for conveyance thereof, such as wells, springs and pumps, on one property, other than those serving a municipality or a group of 10 or more premises of mixed ownership.

(5) "Effluent"--liquid flowing from a septic or treatment tank.

(6) "Fill"--a disturbed soil free of foreign debris which was brought in and placed over the original soil, ledge, low areas, etc. It is characterized by having no distinct horizons or color patterns, as found in naturally developed and undisturbed soils.

(7) "Individual Sewage Disposal System"--a privately owned and maintained system of sewage treatment and disposal facilities serving a single lot.

(8) "Owner"--the person in whom is vested the fee ownership, dominion, or title of property, the proprietor; this term may also include a tenant, if chargeable under his lease for the maintenance of the property, and any agent of the owner or tenant including a developer.

(9) "Person"--any individual firm, corporation, partnership, association or other private or governmental entity.

(10) "Scum"--a mass of sewage matter which flows on the surface of sewage.

(11) "Septic Tank"--watertight tank or receptacle used as a reservoir for receiving or disposing sewage wastes.

(12) "Sewage"--liquid or solid in suspension or solution, originating from toilets.

(13) "Sludge"--the accumulated settled solids deposited from sewage and containing more or less water to form a semi-liquid mass.

(14) "Watercourses"--any natural or artificial stream, river, creek, channel, ditch, canal, conduit, culvert, drain, waterway, gully, ravine, street, roadway, or wash in which water flows in a definite direction or course, either continuously or intermittently, and which has a definite channel, bed or banks, and shall include any area adjacent thereto subject to inundation by reason of overflow of surface water.

Commentary

Many of the definitions have been taken from § 10D-6.22 Fla. Admin. Code. In addition, certain definitions have been adopted from L. Winneberger, Manual of Grey Water Treatment Practice 18 (1974); Wisconsin Adm. Code §62.02; and Maine Plumbing Code Part II, Subsurface Wastewater Disposal Regulations (1978).

SECTION THREE: PERMITS FOR NEW FACILITIES

§3.1 Permit Requirement.

No person may obtain a building or plumbing permit from _____ (local authority) unless that person obtains a sewage disposal permit.

§3.2 Permit Application.

Application for a sewage disposal permit shall be made to _____ (local authority) on forms supplied by that office. Applications shall include:

(a) the property owner's name and address;

(b) the location of the property;

(c) the existing or proposed location and size of the individual waste disposal facility;

(d) a diagram drawn to scale which clearly indicates:

(1) the location of the proposed or existing individual waste disposal facility, property lines, structures and adjacent bodies of water.

(2) the location of any public or private water well inlets or water pipelines on the property described in the application or within _____ (#) feet thereof.

(3) the groundwater level, represented by contour lines, for the wettest portion of the year.

(4) ground surface contours and slopes, showing direction and grade of all slopes.

(5) a soil profile identifying soil types to a depth of six (6) feet or the wet season water table, whichever is less, within any proposed absorption field(s) and extending _____ (#) feet in all directions from the edges of the absorption area(s).

(6) any proposed or existing drainage features affecting the property described in the application, including offsite areas.

(7) any areas containing fill or covered with any impervious material and areas where fill or impervious surfacing is proposed.

(e) A description of all existing or proposed sources of wastewater to be treated by the individual sewage disposal system(s) described in the application, including:

(1) sinks;

(2) toilets;

(3) tubs and/or showers;

(4) automatic dish or clothes washers; and

(5) garbage grinders and disposals.

(f) Any percolation test results.

(g) An application fee of $_____.

Commentary

The intent here is to require all of the data that are necessary to truly evaluate the application. Subpart (e) requires data not required by 10 D-6 but which are important to evaluate the waste load that must be treated by the proposed system. Portions of this section have been adapted from the Maine Plumbing Code, Part II §3 (1978).

§3.3 Issuance.

Upon satisfaction of all requirements of this ordinance, the _____ (local authority) shall issue a sewage disposal permit to the person named in the application. The permit shall include on its face the date of issuance and expiration, and shall state that the permit is non-transferable.

SECTION FOUR: PERMIT APPLICATION EVALUATION

§4.1 In General.

The suitability of the land or building for the use of an individual sewage treatment facility shall be determined from results of tests and investigations performed at the expense of the owner by a registered engineer and submitted to the _____ (local authority) with an application for a sewage disposal permit.

A sewage disposal permit shall be granted only if all minimum standards established by this ordinance are met. In addition, a permit shall be issued

only if, after evaluating the application, the _____ is assured
(local authority)

that with reasonable maintenance the individual sewage disposal system will function in a sanitary manner, not create a nuisance, a health hazard or contribute to the pollution of surface or groundwaters.

§4.2 Location and Installation.

(a) Individual sewage disposal facilities shall not be located:

(1) within [100] feet of any private or public water supply well;

(2) uphill or at a higher elevation than water supply wells when the land is sloped;

(3) under or within [5] feet of any building;

(4) under or within [10] feet of water supply pipelines;

(5) within [5] feet of any property line;

(6) within [50] feet of the high water line of lakes, streams, canals or other waters;

(7) in filled areas, unless thoroughly and mechanically compacted or until allowed to settle for a period of at least [6] months;

(8) in areas where the permanent, seasonal or fluctuating water table rises or is likely to rise to within _____ inches of the ground surface at any time;
(#)

(9) in areas subject to flooding.

Commentary

This provision is nearly identical to 10 D-6.24 et. seq. but is included here so that the local authority may impose stricter criteria than are required by the State. The bracketed numbers are provided to indicate what is currently required by 10 D-6.

§4.3 Septic Tank Sizing Criteria.

(a) For individual sewage disposal facilities which utilize a septic tank, the tank shall be of such size that wastewater entering the tank will be detained for at least (48) hours to insure sufficient anaerobic digestion and sedimentation of organic material.

(b) The minimum acceptable size of any septic tank shall be determined by the _____ (local authority) based upon the estimated peak waste load which will enter the septic tank. Factors to be considered in calculating the peak waste load shall include, but are not limited to:

(1) the number of persons to inhabit the dwelling described in the application;

(2) the number of bedrooms;

(3) the number, and operation specifications of wastewater-producing appliances and other wastewater sources described in the application, including:

(i) toilets and sinks,

(ii) tubs and/or showers,

(iii) automatic dish and clothes washers,

(iv) garbage grinders and disposals.

(c) If it is determined by the _____ (local authority) that one septic tank will not be adequate to insure sufficient anaerobic digestion and sedimentation of organic material because of the number and types of wastewater-producing appliances that are to be operated in the dwelling described in the application, the _____ (local authority) shall require the installation of two separate tanks.

(d) In no instance shall the minimum septic tank volume be less than [750] gallons.

Commentary

10 D-6.26 (2) (a) provides that the number of bedrooms in a building will be the controlling factor in a determination of the proper size for the septic tank. The Model Ordinance makes this factor only one of three to be considered. A more accurate estimate of wasteload is therefore possible. Subsection 4.3 (c) incorporates the current practices of the Alachua County Health Department, Gainesville, Florida, which have been proven effective to prevent overloading and malfunctioning of individual disposal facilities.

When two septic tanks are utilized, wastewater sources can be connected in a manner which facilitates effective anaerobic digestion. Kitchen and clothes washer effluent, for example, can be routed to one tank and sanitary waste to another.

§4.4 Absorption Field Sizing Criteria.

(a) For individual sewage disposal facilities which utilize an absorption field, the field shall be of such size that wastewater entering the field will receive the degree of waste stabilization that will insure it will be rendered harmless to human health and safety, not create a nuisance, and not contribute to the pollution of surface or groundwaters.

(b) The minimum acceptable size of any absorption field shall be determined by the _____ based upon the following factors:
(local authority)

(1) criteria listed in §4.3(b)(1), (2), & (3);

(2) soil characteristics of the area designated in the permit application, including:

(i) soil types;

(ii) percolation rate;

(iii) ground slope degree & direction.

(c) In no instance shall the minimum absorption field be less than _____ square feet.
(#)

(d) Automatic dosing devices shall be installed in absorption fields

which exceed 1000 square feet in area, such that septic tank effluent is delivered in a uniform manner over the entire absorption field in a pulse as opposed to a continuous flow.

Commentary

This subsection begins by making clear the objective of the absorption field sizing procedure. Dosing devices significantly enhance the effectiveness and operational life of the facility by avoiding overloading near the discharge point and thus make better use of the entire absorption field. Again 10 D-6 information requirements are supplemented to facilitate review of the application. The information regarding soil characteristics and absorption field sizing was adapted from the Maine Plumbing Code, §1 (1978).

SECTION FIVE: PERMITS FOR EXISTING FACILITIES

§5.1 Initial Notification.

(a) The owner of any property upon which there already exists an individual sewage disposal facility, as of the effective date of this ordinance, is required to make application for a sewage disposal permit within _____ (#) days from the date of notification by the _____ (local unit) that a permit is required for the continued operation of the facility.

(b) Notification shall be made by registered mail to the person whose name appears on the current tax roles as the owner of the property upon which the individual sewage disposal facility is located. Notification shall include an explanatory letter and a sewage disposal permit application form.

(c) An application for a sewage disposal permit for the existing facility shall be made in accordance with Section Three of this ordinance.

Commentary

The balance of the Model Ordinance is not covered by 10 D-6 because the State regulations control installation only--not maintenance. Because it may

not be practicable or feasible to make all existing individual sewage disposal facilities immediately subject to this Model Ordinance, the local authority could determine which areas are in greatest need of immediate regulation to prevent environmental degradation and danger to the public health. Implementation could then be undertaken step-by-step on a pre-determined time schedule until all individual sewage disposal facilities are subject to regulation under the Ordinance. The Model for Section Five was adapted from J. Gamble, O&M Costs of Wastewater Treatment Plants, in Less Costly Wastewater Treatment Systems for Small Communities at 39 (April, 1977).

§5.2 Inspection.

(a) Within _____ days of receiving an application for a sewage disposal
(#)

permit pursuant to subsection 5.1, personnel approved by _____
(local authority)

shall conduct a physical inspection of the individual sewage disposal facility described in the application.

(b) A sewage disposal permit shall not be issued for an existing facility without the inspection certificate described in Section Seven of this ordinance.

Commentary

Unlike the inspection which must be made in conjunction with a proposed facility, this inspection is to determine whether the existing system is functioning properly under actual user conditions.

SECTION SIX: PERMIT VALIDITY

§6.1 Period of Validity.

A sewage disposal permit issued pursuant to this ordinance shall be valid for a period of __(2)__ years from the date of issuance, except that all permits shall remain revocable by the _____ upon reasonable notice
(local authority)

to the holder and opportunity to be heard. A permit may be revoked only when the individual sewage disposal system no longer meets the minimum standards contained in this ordinance.

Commentary

Expiration of the permit after two years allows for re-inspection of the disposal system before it can be expected to begin malfunctioning. This is a distinct advantage of the Model Ordinance over the 10 D-6 program which provides no controls after installation. The two year period was chosen from J. Winneberger, Manual of Grey Water Treatment Practice 41 (1974).

§6.2 Transfer of Property Affecting Validity of Permit.

(a) When property upon which is located an individual sewage treatment facility is sold, devised, conveyed or title is otherwise transferred, the new owner must notify the _____ (local authority) within _____ (#) days of the date of transfer and such notification shall include the information required by subsection 4.3 (b).

(b) If the _____ (local authority) determines that no alteration of the existing individual sewage disposal facility is required to ensure its proper functioning, a sewage disposal permit shall be issued to the new owner for the duration of the period for which the previous permit was issued.

(c) If the _____ (local authority) determines that an alteration of the existing facility may be required due to increased peak loads that will enter the system, an inspection shall be conducted to ascertain what alterations are required before a sewage disposal permit will be issued and the new owner will be notified pursuant to subsection 7.2 of the required changes.

(d) A sewage disposal permit shall not be issued pursuant to this subsection without the inspection certificate described in Section Seven.

Commentary

This requirement is intended to account for changed conditions which are brought about by new ownership. The new owner's family may be larger and may

use many more wastewater-producing appliances. Such changed conditions may require a change in the sewage disposal facility to prevent malfunctioning. It is also intended that the owner be responsible for the disposal facility and, therefore, new owners must receive a sewage disposal permit in their own names. This section was adapted from J. Gamble, O&M Costs of Wastewater Treatment Plants, in Less Costly Wastewater Treatment Systems for Small Communities at 40 (April, 1977).

SECTION SEVEN: INSPECTION CERTIFICATION

§7.1 Requirement Generally.

(a) An inspection certificate is required before issuance of a sewage disposal permit when:

(1) an individual sewage disposal facility already exists on the effective date of this ordinance and a sewage disposal permit is required in accordance with subsection 5.2; or

(2) the previous sewage disposal permit has expired in accordance with subsection 6.1; or

(3) title to the property upon which the individual sewage disposal facility is located has been transferred and changed circumstances require that the facility be modified pursuant to subsection 6.2(c).

(b) It is the property owner's duty to ensure that reasonable access to the facility is available to the inspector so that a proper inspection may be performed. Failure to provide reasonable access shall constitute grounds for issuance of a deficiency notice in accordance with subsection 7.2.

(c) The inspection certificate must be signed by an inspector approved by _____ and must contain the following statement:
(local authority)

"I certify that on the ____ day of _____, 19__, I inspected the individual waste disposal facility owned by _____
(name)
and located at _____. Upon inspection, I have determined
(address)
that:

_____ All sludge and scum was pumped out of the septic tank, except for an amount of sludge appropriate for a seed culture to assure the proper performance of the tank in the future.

_____ The volume of sludge and scum was such that pumping was not required.

_____ The absorption field area is functioning adequately.

_____ All other components of the facility are adequately maintained and working properly, and there is no recognizable present or potential danger to human health or the environment.

_____ The facility was deficient for the reason(s) explained below. I further certify that corrective measures have been taken as described below, and that the facility is now working properly.

_____

_____

_____

_____

_____

_____
Signature

Commentary

The inspection certificate is the key to the maintenance program. Through periodic inspection, the potential pollution problems which arise from inadequately treated sewage entering surface and groundwaters can be substantially

eliminated. Unlike the 10 D-6 program which cannot control after-installation malfunctioning due to overloading, breakage, or any number of possible circumstances, the Model Ordinance inspection requirement for operating facilities can prevent these situations from occurring or continuing. The certificate insures that the inspector understands his responsibility and provides for a description of the action taken by him. The inspection certificate was modified from a model presented by J. Gamble, O&M Costs of Wastewater Treatment Plants, in Less Costly Wastewater Treatment Systems for Small Communities at 40 (April, 1977).

§7.2 Deficiency Notice.

(a) If for any reason the individual sewage disposal facility does not appear to be operating properly, so that an inspection certificate cannot be issued, the _____ shall issue a written deficiency notice to (local authority)

the applicant.

(b) The notice shall describe the deficiency(ies) found and shall state clearly that a sewage disposal permit will not be issued until the deficiency(ies) are corrected. The notice shall also state with particularity what remedial action(s) must be taken before a permit will be issued.

(c) Within _____ days of receiving a deficiency notice, an applicant (#)

may demand a hearing before the _____ for reconsideration of the matter. If upon review, the _____ decides that (local authority) (local authority)

a deficiency notice is warranted as originally issued or as modified, a new deficiency notice will be issued to the applicant must comply with the requirements of subsection 7.3.

§7.3 Reinspection.

Within _____ days of receiving a deficiency notice, the applicant (#)

must apply to the _____ for reinspection of the facility, (local authority)

certifying that the deficiency(ies) have been corrected. A facility for

which reapplication has not been made within _____ days will be declared
(#)

a public nuisance and a public health hazard. Upon such a declaration, in order to protect the public health, safety and welfare, the _____
(local

_____ shall either cause to be performed appropriate corrective
authority)

measures at the cost of the applicant, or assure that the deficient system receives zero waste load, either by condemnation of the premises as a threat to public health or by assuring that all wastewater sources formerly connected to the deficient system have been disconnected and connected to a separate, approved, and properly functioning waste collection and treatment system.

SECTION EIGHT: SEVERABILITY

Each separate provision of this ordinance is deemed independent of all other provisions herein so that if any provisions of this ordinance be declared invalid, all other provisions thereof shall remain valid and enforceable.

APPENDIX

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