CHAPTER 2

LEGAL ASPECTS

BRIDGE DEVELOPMENT

APRIL 2011

PREFACE

Some of the references in this manual to Federal and State environmental laws and regulations may be out of date. If an accurate and up-to-date reference is needed for such information, the user is encouraged to consult with the SHA Office of Environmental Policy.

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2.1 Overview

2.1.1 Introduction

Various drainage laws and rules applicable to highway facilities are discussed in this chapter. The intention is to provide information and guidance on the engineer's role in the legal aspects of highway drainage. This chapter should not in any way be treated as a manual upon which to base legal advice or make legal decisions. It is not a summary of all existing drainage laws, and is not intended as a substitute for legal counsel. General guidance regarding design considerations for complying with State and Federal laws and regulations is contained in various chapters and particularly Chapter 3, Policy and Procedures. Questions regarding specific details of the law should be referred to the Office of Counsel. The following generalizations can be made in reaching the proper conclusion regarding liability:

- A goal in the hydraulic design of a structure should be to perpetuate natural drainage patterns, insofar as practicable.

- The courts look with disfavor upon infliction of injury or damage that could reasonably have been avoided by a prudent designer, even where some alteration in flow is legally permissible.

- The laws relating to the liability of government entities are undergoing radical change, with a trend toward increased government liability.

2.1.2 Order of Authority

The descending order to law supremacy is Federal, State, and local, and, except as provided for in the statutes or constitution of the higher level of government, the superior level is not bound by laws, rules, or regulations of a lower level. State permit requirements are an example of law supremacy. Federal agencies do not secure permits issued by State agencies, except as required by Federal law. Many laws of one level of government are passed for the purpose of enabling that level to comply with or implement provisions of laws of the next higher level. In some instances, however, a lower level of government may promulgate a law, rule or regulation which would require an unreasonable or even illegal action by a higher level. An example is a local ordinance which would require an expenditure of State funds for a purpose not intended in the appropriation. Many such conflicts in the laws of different levels of government involve constitutional interpretation and must be determined case by case. Such conflicts should be referred to the Office of Counsel before any action is taken.

2.1.3 Related Publications

There are numerous publications on the legal aspects of drainage and water laws. For additional information on the legal aspects of highway drainage, the reader is referred to the following publications:

Title 08 Department of Natural Resources, Subtitle 05, Water Resources Administration, Annotated Code of Maryland.

Highway Drainage Guidelines, 4th edition, American Association of State Highway and Transportation Officials, Washington, D. C: Chapter V - The Legal Aspects of Highway Drainage, which also includes a Glossary of legal definitions.

AASHTO Model Drainage Manual , American Association of State Highway and Transportation Officials, Washington, D. C., 3rd Edition, 2005

Legal Research Digest, Transportation Research Board.

Federal Highway-Related Regulations, Title 23, Code of Federal Regulations

Federal Emergency Management Agency. 1987. National Flood Insurance Program and Related Regulations.

2.3 Navigable Waters Regulations

2.3.1 Constitutional Power

The Congress of the United States is granted constitutional power to regulate "commerce among the several states". A part of that power is the right to legislate on matters concerning the instrumentalities of interstate commerce such as navigable waters. The definition of navigable waters expands and contracts depending upon the breadth required to adequately carry out the Federal purpose. The result is the Congress can properly assert regulatory authority over at least some aspects of waterways that are not in themselves subject to navigation.

2.3.2 Federal Agencies

Basically four Federal agencies carry out existing Federal regulations.

- Coast Guard - the Coast Guard (USCG) has regulatory authority under Section 9 of the Rivers and Harbors Act of 1899, 33 U.S.C. 401 (delegated through the

Secretary of Transportation in accordance with 49 U.S.C. 1655 (g)) to approve plans and issue permits for bridges and causeways across navigable rivers. As outlined in 23 CFR 650 the area of jurisdiction of the USCG and FHWA is established as follows:

The FHWA has the responsibility under 23 U.S.C. 144(h) to determine that a USCG permit is not required. This determination shall be made at an early stage of project development so that any necessary coordination can be accomplished during environmental processing.

The USCG has the responsibility:

(1) to determine whether or not a USCG permit is required for the improvement or construction of a bridge over navigable waters except for the exemption exercised by FHWA as stated above, and

(2) to approve the bridge location, alignment and appropriate navigational clearances in all bridge permit applications.

•Corps of Engineers - the Corps of Engineers has regulatory authority over the construction of dams, dikes or other obstructions (which are not bridges and causeways) under Section 9 (33 U.S.C. 401). The Corps also has authority to regulate Section 10 of the River and Harbor Act of 1899(33 U.S.C. 403) which prohibits the alteration or obstruction of any navigable waterway with the excavation or deposition of fill material in such waterway. Section 11 of the River and Harbor Act of 1899 (33 U.S.C. 404) authorizes the Secretary of the Army to establish harbor lines. Work channelward of those lines requires separate approval of the Secretary of the Army and work shoreward requires Section 10 permits.

Section 404 of the Clean Water Act (33 U.S.C. 1344), prohibits the unauthorized discharge of dredged or fill material into waters of the United States, including navigable waters. Such discharges require a Permit. The term "discharges of fill material" means the addition of rock, sand, dirt, concrete or other material into the waters of the United States incidental to construction of any structure. The Corps of Engineers has granted Nationwide General Permit for twenty-six categories of certain minor activities involving discharge of fill material. Under the provisions of 33 CFR 330.5(a)(15), fill associated with construction of bridges across navigable waters of the United States, including cofferdams, abutments, foundation seals, piers, temporary construction and access fills are authorized under the Nationwide Section 404 Permit providing such fill has been permitted by the U. S. Coast Guard under Section 9 of the River and

Harbor Act of 1899 as part of the bridge permit. Therefore, formal application of the Corps of Engineers for a Section 404 Permit is not required unless bridge approach embankment is located in a wetland area contiguous to said navigable stream. The Corps of Engineers has Section 404 regulatory authority over streams the Coast Guard has placed in the "advance approval" category. This category of navigable streams is defined as navigable in law but not actually navigated other than by logs, log rafts, rowboats, canoes and motorboats. Notably this regulation does not apply to the actual excavation of "dredging of material" provided this material is not reintroduced into any regulated waterway including the one from which it was removed.

Section 404 of the Clean Water Act (33 U.S.C. 1344) requires any applicant for a Federal Permit for any activity that may affect the quality of waters of the United States to obtain water quality certification from the Water Resources Administration •Federal Highway Administration - the Federal Highway Administration has the authority to implement the Section 404 Permit Program (Clean Water Act of 1977) for Federal-aid highway projects processed under 23 CFR 771.115 (b) categorical exclusions. This authority was delegated to the Federal Highway Administration by the Corps of Engineers to reduce unnecessary Federal regulatory controls over activities adequately regulated by another agency. This permit is granted for projects where the activity, work or discharge is categorically excluded from environmental documentation because such activity does not have individual or cumulative significant effect on the human environment.

•Environmental Protection Agency (EPA) - the EPA is authorized to prohibit the use of any area as a disposal site when it is determined that the discharge of materials at the site will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas, wildlife, or recreational areas (Section 404 (c), Clean Water Act (33 U.S.C. 1344)). Also EPA is authorized under the Section 402 of the Clean Water Act (33 U.S.C. 1344) to administer and issue a "National Pollutant Discharge Elimination System" (NPDES) Permit for point source discharges, provided prescribed conditions are met.

•National Pollutant Discharge Elimination System (NPDES)- the regulatory permit program that controls the quality of treated sewage discharge from sewage treatment plants as established in 40 CFR Part 125 pursuant to the Clean Water Act, 33 U.S.C. 1342 (23 CFR 650). SHA procedures for complying with this regulation are set forth in the appendices to this chapter.

A designer involved in obtaining approvals from Federal agencies should be aware

that these agencies do not always work in concert. Quite often they will not be in agreement with each other. This can result in significant project delays unless early coordination is initiated and diligently pursued. These conflicts between Federal agencies occur as a result of their having different rules; some are "regulators" while others are "resource" motivated. For this reason they will have different goals and, in some instances, definitions of such things as wetlands. When conflicts occur, it is best to quickly determine which agency has primary responsibility and attempt to satisfy their needs.

2.4 Fish And Wildlife Service

2.4.1 Requirements

The Fish and Wildlife Act of 1956 (16 U.S.C. 742 et seq.), the Migratory Game-Fish Act (16 U.S.C. 760c-760g), and the Fish and Wildlife Coordination Act (16 U.S.C. 611-666c) express the concern of Congress with the quality of the aquatic environment as it affects the conservation, improvement and enjoyment of fish and wildlife resources. The Fish and Wildlife Coordination Act requires that "whenever the waters of any stream or body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the United States, or by any public or private agency under Federal permit or license, such department or agency shall first consult with the United States Fish and Wildlife Service, Department of the Interior, and with the head of the agency exercising administration over the wildlife resources of the particular state with a view to the conservation of wildlife resources by preventing loss of and damage to such resources as well as providing for the development and improvement thereof."

2.4.2 Service's Role

The Fish and Wildlife Service's role in the permit review process is to review and comment on the effects of a proposal on fish and wildlife resources. It is the function of the regulatory agency (e.g., Corps of Engineers, U. S. Coast Guard) to consider and balance all factors, including anticipated benefits and costs in accordance with NEPA, in deciding whether to issue the permit (40 FR 55810, December 1, 1975).

2.5 National Flood Insurance Program

2.5.1 Flood Disaster Protection

The Flood Disaster Protection Act of 1973 (Pl 93-234, 87 Stat. 975) denies Federal financial assistance to flood-prone communities that fail to qualify for flood insurance. Formula grants to States are excluded from the definition of financial assistance, and the definition of construction in the Act does not include highway construction; therefore, Federal aid for highways is not affected by the Act. The Act does require communities to adopt certain land use controls in order to qualify for flood insurance. These land use requirements could impose restrictions on the construction of highways in floodplains and floodways in communities which have qualified for flood insurance. A floodway, as used here and as used in connection with the National Flood Insurance Program, is that portion of the floodplain required to pass a flood that has a 1-percent chance of being equaled or exceeded in any given year without cumulatively increasing the water surface elevation by more than one foot.

2.5.2 Flood Insurance

The National Flood Insurance Act of 1968 (42 U.S.C. 4001-4127), as amended, requires that communities adopt adequate land use and control measures to qualify for insurance. Federal criteria promulgated to implement this provision contain the following requirements which can affect certain highways.

- In riverine situations, when the Administrator of the Federal Insurance Administration has identified the flood prone area, the community must require that, until a floodway has been designated, no use, including land fill, be permitted within the floodplain area having special flood hazards for which base (100 year) flood elevations have been provided, unless it is demonstrated that the cumulative effect of the proposed use, when combined with all other existing and reasonably anticipated uses of a similar nature, will not increase the water surface elevation of the 100-year flood more than one foot at any point within the community.

- After the floodplain area having special flood hazards has been identified and the water surface elevation for the 100-year flood and floodway data have been provided, the community must designate a floodway which will convey the 100-year flood without increasing the water surface elevation of the flood more than one foot at any point and prohibit, within the designated floodway, fill, encroachments, and new construction and substantial improvements of existing structures which would result in any increase in flood heights within the community during the occurrence of the 100-year flood discharge.

- The participating cities and/or counties agree to regulate new development in

the designated floodplain and floodway through regulations adopted in a floodplain ordinance. The ordinance requires that development in the designated floodplain be consistent with the intent, standards and criteria set by the National Flood Insurance Program.

2.5.3 Local Community

The local community with land use jurisdiction, whether it is a city, county, or State, has the responsibility for enforcing National Flood Insurance Program (NFIP) regulations in that community if the community is participating in the NFIP. Consistency with NFIP standards is a requirement for Federal-aid highway actions involving regulatory floodways. The community, by necessity, is the one who must submit proposals to Federal Emergency Management Agency (FEMA) for amendments to NFIP ordinances and maps in that community should it be necessary. The highway agency should deal directly with the community and, through them, deal with FEMA. Determination of the status of a community's participation in the NFIP and review of applicable NFIP maps and ordinances are, therefore, essential first steps in conducting location hydraulic studies and preparing environmental documents.

2.5.4 NFIP Maps

Where NFIP maps are available, their use is mandatory in determining whether a highway location alternative will include an encroachment on the base floodplain. Three types of NFIP maps are published:

- Flood Hazard Boundary Map (FHBM),
- Flood Boundary and Floodway Map (FBFM), and
- Flood Insurance Rate Map (FIRM).

A FHBM is generally not based on a detailed hydraulic study and, therefore, the floodplain boundaries shown are approximate. A FBFM, on the other hand, is generally derived from a detailed hydraulic study and should provide reasonably accurate information. The hydraulic data from which the FBFM was derived are available through the regional office of FEMA. This is normally in the form of computer input data records for calculating water surface profiles. The FIRM is generally produced at the same time using the same hydraulic model and has appropriate rate zones and base flood elevations added.

Communities may or may not have published one or more of the above maps depending on their level of participation in the NFIP. Information on community participation in the NFIP is provided in the "National Flood Insurance Program Community Status Book" which is published semiannually for each State.

2.5.5 Coordination with FEMA

The State Highway Administration will initiate coordination with FEMA in situations where administrative determinations are needed involving a regulatory floodway or where flood risks in NFIP communities are significantly impacted. The circumstances which would ordinarily require coordination with FEMA are discussed in Appendix 5B.

The draft Environmental Impact Statement or Environmental Assessment (EIS/EA) should indicate the NFIP status of affected communities, the encroachments anticipated and the need for floodway or floodplain ordinance amendments. Coordination means furnishing to FEMA the draft EIS/EA and, upon selection of an alternative, furnishing to FEMA, through the community, a preliminary site plan and water surface elevation information and technical data in support of a floodway revision request as required. If a determination by FEMA would influence the selection of an alternative, a commitment from FEMA should be obtained prior to the final environmental impact statement (FEIS) or a finding of no significant impact (FONSI). Otherwise this later coordination may be postponed until the design phase.

For projects that will be processed with a categorical exclusion, coordination may be carried out during design. However, the outcome of the coordination at this time could change the level of environmental processing.

2.5.6 Consistent With Floodways

In many situations it is possible to design and construct highways in a cost-effective manner such that their components are excluded from the floodway. This is the simplest way to be consistent with the standards and should be the initial alternative evaluated. If a project element encroaches on the floodway but has a very minor effect on the floodway water surface elevation (such as piers in the floodway), the project may normally be considered as being consistent with the standards, if hydraulic conditions can be improved so that no water surface elevation increase is reflected in the computer printout for the new conditions.

2.5.7 Revision Of Floodway

Where it is not cost-effective to design a highway crossing to avoid encroachment on an established floodway, a second alternative would be a modification of the

floodway itself. Often, the community will be willing to accept an alternative floodway configuration to accommodate a proposed crossing provided NFIP limitations on increases in the base flood elevation are not exceeded. This approach is useful where the highway crossing does not cause more than a one foot rise in the base flood elevation. In some cases, it may be possible to enlarge the floodway or otherwise increase conveyance in the floodway above and below the crossing in order to allow greater encroachment. Such planning is best accomplished when the floodway is first established. However, where the community is willing to amend an established floodway to support this option, the floodway may be revised.

The responsibility for demonstrating that an alternative floodway configuration meets NFIP requirements rests with the community. However, this responsibility may be borne by the agency proposing to construct the highway crossing. Floodway revisions must be based on the hydraulic model which was used to develop the currently effective floodway but updated to reflect existing encroachment conditions. This will allow determination of the increase in the base flood elevation that has been caused by encroachments since the original floodway was established. Alternate floodway configurations may then be analyzed.

Base flood elevations increases are referenced to the profile obtained for existing conditions when the floodway was first established.

2.5.8 Data For Revisions

Data submitted to FEMA, through the community, in support of a floodway revision request should include the following:

- Copy of current regulatory Flood Boundary Floodway Map, showing existing conditions, proposed highway crossing and revised floodway limits.

- Copy of computer printouts (input, computation, and output) for the current 100-year model and current 100-year floodway model.

- Copy of computer printouts (input, computation, and output) for the revised 100-year floodway model. Any fill or development that has occurred in the existing flood fringe area must be incorporated into the revised 100-year floodway model.

- Copy of engineering certification is required for work performed by private subcontractors.

The revised and current computer data required above should extend far enough upstream and downstream of the floodway revision area in order to tie back into

the original floodway and profiles using sound hydraulic engineering practices. This distance will vary depending on the magnitude of the requested floodway revision and the hydraulic characteristics of the stream.

If input data representing the original hydraulic model are unavailable, an approximation should be developed. A new model should be established using the original cross-section topographic information, where possible, and the discharges contained in the Flood Insurance Study which established the original floodway. The model should then be run confining the effective flow area to the currently established floodway and calibrate to reproduce within 0.10 foot, the "With Floodway" elevations provided in the Floodway Data Table for the current floodway. Floodway revisions may then be evaluated using the procedures outlined above.

2.5.9 Allowable Floodway Encroachment

When it would be demonstrably inappropriate to design a highway crossing to avoid encroachment on the floodway and where the floodway cannot be modified such that the structure could be excluded, FEMA will approve an alternate floodway with backwater in excess of the one foot maximum only when the following conditions have been met.

- A location hydraulic study has been performed in accordance with the section entitled "Location and Hydraulic Design of Encroachments on Floodplains" (23 CFR 650, Subpart A) and a finding is made that the encroachment is the only practicable alternative.

- The constructing agency has made appropriate arrangements with affected property owners and the community to obtain flooding easements or otherwise compensate them for future flood losses in accordance with applicable floodplain management requirements.

- The constructing agency has made appropriate arrangements to assure that the National Flood Insurance Program and Flood Insurance Fund will not incur any liability for additional future flood losses to existing structures which are insured under the Program and grandfathered in under the risk status existing prior to the construction of the structure.

- Prior to initiating construction, the constructing agency provides FEMA with revised flood profiles, floodway and floodplain mapping, and background technical data necessary for FEMA to issue revised Flood Insurance Rate Maps and Flood Boundary and Floodway Maps for the affected area, upon completion of the structure.

Highway Encroachment On A Floodplain With A Detailed Study (FIRM)

In communities where a detailed flood insurance study has been performed but no regulatory floodway designated, the highway crossing should be designed to allow no more than one foot increase in the base flood elevation based on technical data from the flood insurance study. Technical data supporting the increased flood elevation shall be submitted to the local community and through them to FEMA for their files.

Highway Encroachment On A Floodplain Indicated On An FHBM

In communities where detailed flood insurance studies have not been performed, the highway agency must generate its own technical data to determine the base floodplain elevation and design encroachments in accordance with 23 CFR 650, Subpart A. Base floodplain elevations shall be furnished to the community, and coordination carried out with FEMA as outlined previously where the increase in base flood elevations in the vicinity of insurable buildings exceeds one foot.

Highway Encroachment on Unidentified Floodplains

Encroachments which are outside of NFIP communities or NFIP identified flood hazard areas should be designed in accordance with 23 CFR 650, Subpart A of the Federal Highway Administration.

2.5.10 Levee Systems

For purposes of the National Flood Insurance Program (NFIP), FEMA will only recognize in its flood hazard and risk mapping effort those levee systems that meet, and continue to meet, minimum design operation, and maintenance standards that are consistent with the level of protection sought through the comprehensive floodplain management criteria as outlined in the NFIP. The levee system must provide adequate protection from the base flood. Information supporting this must be supplied to FEMA by the community or other party seeking recognition of such a levee system at the time a flood risk study or restudy is conducted, when a map revision is sought based on a levee system, and upon request by the Administrator during the review of previously recognized structures. The FEMA review will be for the sole purpose of establishing appropriate risk zone determinations for NFIP maps and shall not constitute a determination by FEMA as to how a structure or system will perform in a flood event. For more information on the requirements related to levee systems see "National Flood Insurance Program and Related Regulations", Federal Emergency Management Agency, Revised October 1, 1986 and Amended June 30, 1987 (44 CFR 65.10).

2.6 Executive Orders

2.6.1 Background

Presidential Executive Orders (E.O.) have the effect of law in the administration of programs by Federal agencies. While executive orders do not directly apply to State highway department, these requirements are usually implemented through general regulations.

2.6.2 E.O.11988

Executive Order 11988, May 24, 1977, requires each Federal agency, in carrying out its activities, to take the following actions:

- to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains; and

- to evaluate the potential effect of any actions it may take in a floodplain, to ensure its planning programs reflect consideration of flood hazards and floodplain management.

These requirements are contained in 23 CFR 650, Subpart A.

2.6.3 E.O.11990

Executive Order 11990, May 24, 1977, orders each Federal agency to:

- take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values to wetlands;

- avoid undertaking or providing assistance for new construction in wetlands unless the head of the agency finds that there is no practicable alternative and all practicable measures are taken to minimize harm which may result from the action; and

- to consider factors relevant to the proposal's effects on the survival and quality of the wetlands.

These requirements are contained in 23 CFR 771.

2.7 State Drainage Law

2.7.1 Derived from

State drainage law is derived mainly from two sources: (1) common law and (2) statutory law.

2.7.2 Common Law

Common law is that body of principles which developed from immemorial usage and custom and which receives judicial recognition and sanction through repeated application. These principles were developed without legislative action and are embodied in the decisions of the courts.

2.7.3 Statutory Law

Statutory laws of drainage are enacted by legislatures to enlarge, modify, clarify, or change the common law applicable to particular drainage conditions. This type of law is derived from constitutions, statutes, ordinances, and codes.

2.7.4 Predominates

In general, the common law rules of drainage predominate unless they have been expressly enlarged or superseded by statutory law. In most instances where statutory provisions have been enacted, it is possible to determine the intent of the law. If, however, there is a lack of clarity in the statute, the point in question may have been litigated for clarification. In case of ambiguity, statutes are generally construed with reference to the principles of the common law at the time of their passage. It is assumed that no innovation on common law, other than what has plainly been pronounced, was intended. In the absence of either clarity of the statute or litigation, a definitive statement of the law is not possible, although the factors that are likely to be controlling may be indicated.

2.7.5 Classification of Waters

State drainage laws originating from common law, or court-made law, first classified the water that was being dealt with, after which the rule that was pertinent to the particular classification was applied to obtain a decision.

The first step in the evaluation of a drainage problem is to classify the water as surface water, stream water, flood water, or groundwater. These terms are defined

below. Once the classification has been established, the rule that applies to the particular class of water determines responsibilities with respect to disposition of the water.

- Surface Waters - Surface waters are those waters which have been precipitated on the land from the sky or forced to the surface in springs, and which have then spread over the surface of the ground without being collected into a definite body or channel.

- Stream Waters - Stream waters are former surface or ground waters which have entered and now flow in a well-defined natural watercourse, together with other waters reaching the stream by direct precipitation or rising from springs in the bed or banks of the watercourse. A watercourse in the legal sense refers to a definite channel with bed and banks within which water flows either continuously or intermittently.

- Flood Waters Flood waters are former stream waters which have escaped from a watercourse (and its overflow channels) and flow or stand over adjoining lands. They remain flood waters until they disappear from the surface by infiltration or evaporation, return to a natural water-course, or are removed by other means.

- Ground Waters - In legal considerations, ground waters are divided into two classes, percolating waters and underground streams. The term "percolating waters" generally includes all waters which pass through the ground beneath the surface of the earth without a definite channel and not shown to be supplied by a definite flowing stream. The general rule is that all underground waters are presumed to be percolating and to take them out of the percolating class, the existence and course of a permanent channel must be clearly shown. Underground streams are waters passing through the ground beneath the surface in permanent, distinct, well-defined channels.

2.7 State Water Rules

2.8.1 Basic Concepts

Two major rules have been developed by the courts regarding the disposition of surface waters. One is known as the civil law rule of natural drainage. The other is referred to as the common enemy doctrine. Modification of both rules has tended to bring them somewhat closer together, and in some cases the original rule has been replaced by a compromise rule known as the reasonable use rule.

Much of the law regarding stream waters is founded on a common law maxim that states "water runs and ought to run as it is by natural law accustomed to run". Thus, as a general rule, any interference with the flow of a natural watercourse to the injury or damage of another will result in liability. This may involve augmentation, obstruction and detention, or diversion of a stream. However, there are qualifications.

In common law, flood waters are treated as a "common enemy" of all people, lands, and property attacked or threatened by them.

In ground water law, the "English Rule", which is analogous to the common enemy rule in surface water law, is based on the doctrine of absolute ownership of water beneath the property by the landowner.

2.8.2 Surface Waters

The civil law rule, as modified by the reasonableness of use rule regarding surface waters, applies in Maryland.

The civil law rule is based upon the perpetuation of natural drainage. The rule places a natural easement or servitude upon the lower land for the drainage of surface water in its natural course and the natural flow of the water cannot be obstructed by the servient owner to the detriment of the dominant owner. Most states following this rule have modified it so that the owner of upper lands has a natural easement over lower lands for drainage of surface waters and natural drainage conditions can be altered by an upper proprietor provided the water is not sent down in a manner or quantity, different from the usual and ordinary natural course of drainage.

Under the common enemy doctrine, surface water is regarded as a common enemy which each property owner may fight off or control as he will or is able, either by retention, diversion, repulsion, or altered transmission. Thus, there is not cause of action even if some injury occurs causing damage. In most jurisdictions, this doctrine has been subject to a limitation that one must use his land so as not to unreasonably or unnecessarily damage the property of others. Under the reasonable use rule, each property owner can legally make reasonable use of his land, even though the flow of surface waters is altered thereby and causes some harm to others. The application of the reasonableness of use doctrine does not change the civil law rule, but provides mitigation from harsh results which may be reached by a strict application of the general rule. However, liability attaches when his harmful interference with the flow of surface water is "unreasonable"; thus, the application of this rule depends upon the facts of each particular case. Whether a landowner's use is unreasonable is determined by a nuisance-type balancing test.

The analysis involves several questions.

- Was there reasonable necessity for the actor to alter the drainage to make use of his land?

- Was the alteration done in a reasonable manner?

- Does the utility of the actor's conduct reasonably outweigh the gravity of harm to others?

2.8.3 Stream Waters

Where natural watercourses are unquestioned in fact and in permanence and stability, there is little difficulty in application of the rule. Highways cross channels on bridges or culverts, usually with some constriction of the width of the channel and obstruction by substructure within the channel, both causing backwater upstream and acceleration of flow downstream. The changes in regime must not impair the flow unnecessarily.
Surface waters from highways are often discharged into the most convenient watercourse. The right is unquestioned if those waters were naturally tributary to the watercourse and unchallenged if the watercourse has adequate capacity. However, if all or part of the surface waters have been diverted from another watershed to a small watercourse, any lower owner may complain and recover for ensuing damage.

2.8.4 Flood Waters

Considering flood waters as a common enemy permits all effected landowners including owners of highways, to act in any reasonable way to protect themselves and their property from the common enemy. They may obstruct its flow from entering their land, backing or diverting water onto lands of another without penalty, by gravity or pumping, by diverting dikes or ditches, or by any other reasonable means. Again, the test of "reasonableness" has frequently been applied, and liability can result where unnecessary damage is caused. Ordinarily, the highway designer should make provision for overflow in areas where it is foreseeable that it will occur. There is a definite risk of liability if such waters are impounded on an upper owner or, worse yet, are diverted into an area where they would not otherwise have gone. Merely to label waters as "flood waters" does not mean that they can be disregarded.

2.8.5 Ground Water

The "English Rule" has been modified by the "Reasonable Use Rule" which states in

essence that each landowner is restricted to a reasonable exercise of his own right and a reasonable use of his property in view of the similar right of his neighbors.

The key word is "reasonable." While this may be interpreted somewhat differently from case to case, it can generally be taken to mean that a landowner can utilize subsurface water on his property for the benefit of agriculture, manufacturing, irrigation, etc. pursuant to the reasonable development of his property although such action may interfere with the underground waters of neighboring proprietors. However, it does generally preclude the withdrawal of underground waters for distribution or sale for uses not connected with any beneficial ownership or enjoyment of the land from whence they were taken.

A further interpretation of "reasonable" in relation to highway construction would view the excavation of a deep "cut section" that intercepts or diverts underground water to the detriment of adjacent property owners as unreasonable. There are also cases where highway construction has permitted the introduction of surface contamination into subsurface waters and thus incurred liability for resulting damages.

2.8.6 Dams and Reservoirs

The design and construction of highway facilities affecting dams or reservoirs must comply with the provisions of COMAR 08.05.03. For such projects, coordination should be initiated early in the project development process with the Dam Safety Division of the State Water Resources Administration to ensure that the project is designed and constructed in a manner that is consistent with these regulations. In addition, the designs of any SHA structure that creates significant ponding of water shall be coordinated with the Dam Safety Division (or the Maryland Department of the Environment for certain reservoirs created by highway embankments or storm water management ponds). Significant ponding of water is defined as:

- An upstream depth of flow equal to twice the height of any culvert-type structure defined as a bridge, or

- Permanent impoundment of a volume of water exceeding fifty acre-feet.

2.8 Statutory Law

2.9.1 Introduction

The inadequacies of the common law or court-made laws of drainage led to a gradual enlargement and modification of the common law rules by legislative mandate.

In the absence of statute, the common law rules adopted by State courts determine surface water drainage rights. If the common law rules have been enlarged or superseded by statutory law, the statute prevails.

In general, statutes have been enacted that affect drainage in one way or another in the subject areas described below.

2.9.2 Eminent Domain

In the absence of an existing right, public agencies may acquire the right to discharge highway drainage across adjoining lands through the use of the right of eminent domain. Eminent domain is the power of public agencies to take private property for public use.

The State's constitution grants the State the right of eminent domain which allows the taking of property for public purposes. It is important to remember, however, that whenever any property is taken under eminent domain, the private landowner must be compensated for his or her loss.

County governments have the right of eminent domain to construct, operate, repair or maintain any floodway, reservoir spillway, levee or diversion, or other flood control improvements. Similarly, any levee or drainage district, through its Board of Directors, has eminent domain powers as long as it is declared necessary by the Chief of Engineers, United States Army, for the location, construction, operation or maintenance of any levee, channel rectification, drainage canal, floodway, reservoir, spillway or diversion to be constructed by the United States Government.

2.9.3 Water Rights

The water right which attaches to a watercourse is a right to the enjoyment of the stream in its natural flow, not ownership of the water itself. This is true under both the riparian doctrine and the appropriation doctrine. This right of use is a property right, entitled to protection to the same extent as other forms of property, and is regarded as real property.

- Riparian Doctrine - Under the riparian doctrine, an owner of lands contiguous to watercourses is entitled to a reasonable use of the water for domestic, agricultural and manufacturing purposes.

- Doctrine of Prior Appropriation - The essence of this doctrine is the exclusive right to divert water from a source when the water supply naturally available is not sufficient for the needs of all those holding rights to its use. Such exclusive right depends upon the effective date of the appropriation, the first in time being the first in right. This doctrine is primarily used in western states.

Generally, the important thing for highway designers to keep in mind in the matter of water rights is that proposed work in the vicinity of a stream should not impair either the quality or

quantity of flow of any water rights to the stream.

2.9.4 Environmental Law

In addition to the Federal laws cited earlier in this Chapter, the State of Maryland has enacted various laws promoting the maintenance and enhancement of the quality of life. The effect of these laws on the design and construction of highways is considered in Chapter 3, Policies and Procedures.

2.10 Local Laws And Applications

2.10.1 Local Laws

Local governments (cities, counties, improvement districts) have ordinances and codes which require consideration during design. For example, floodplain or storm water management ordinances can have a substantial effect on the design of a highway drainage structure or system. Designers need to review applicable ordinances and determine the extent to which they will affect the highway design. Early coordination with local officials should be initiated in order to obtain up-to-date information on local requirements. In the event that an apparent conflict between local and State requirements arises during project development, the designer should consult with the Deputy Chief Engineer for the Office of Structures regarding the need for further legal advice.

Following is a discussion of the application of some of the principles and concepts of drainage law.

2.10.2 Municipal Liability

In the absence of a statutory requirement, municipalities are under no legal duty to construct drainage improvements unless public improvements necessitate drainage - as in those situations in which street grading and paving or construction accelerate or alter storm runoff. However, where a municipality undertakes to build a sewer or drain, it is bound to exercise reasonable care in the execution of the work. In addition, it is generally held that municipalities are not liable for adoption or selection of a defective plan of drainage.

Municipalities can be held liable for negligent construction of drainage improvements, for negligent maintenance and repair of drainage improvements, and if it fails to provide a proper outlet for drainage improvements.
In general, in the absence of negligence a municipality will not be held liable for increased runoff occasioned by the necessary and desirable construction of storm drains. Nor will a municipality be held liable for damages caused by overflow of

its storm drains occasioned by extraordinary, unforeseeable rains or floods. Municipal liability may attach where a municipality:

- collects surface water and casts it in a body onto private property where it did not formerly flow;

- diverts, by means of artificial drains, surface water from the course it would otherwise have taken, and casts it in a body large enough to do substantial injury on private land, where, but for the artificial storm drain, it would not go; and

- fills up, dams back, or otherwise diverts a stream of running water so that it overflows its banks and flows on the land of another.

2.10.3 Governmental and Proprietary Acts

The general rule is that a municipality is not liable for the acts of officers, agents, or employees that are governmental in nature, but is liable for negligent acts of its agents in the performance of duties relating to proprietary or private corporate purposes of the city. If the construction, maintenance and repair of drainage improvements is regarded as proprietary or corporate functions, then a municipality may be held liable for the acts of its officers, agents or employees for injuries resulting from negligent construction, maintenance, or dangerous conditions of a public facility.

2.10.4 Personal Liability

The Local Government Tort Claims Act immunizes local government employees from having judgments executed against them personally for non-malicious tortuous acts or omissions committed within the scope of employment.

2.10.5 Drainage Improvements

A municipality has no inherent police power, and when it exercises such power, it exercises a power delegated to it by the State. The Municipal Corporations Charter Act expressly grants to any municipality which adopts the Act, the power to pass ordinances for the protection and promotion of public health, safety, morals and welfare. The Act expressly allows a municipality to construct, operate and maintain a storm water management of sewers.

2.11 Legal Remedies

2.11.1 Common Actions

The most common legal actions through which a complainant may seek legal recourse include inverse condemnation, injunction, and tort claims.

2.11.2 Inverse Condemnation

The doctrine of sovereign immunity states, in effect, that the State is sovereign and immune from suit for tortuous conduct. Some states have either modified or abolished this doctrine while others have not. Maryland allows damage suits to be brought against the State where the property owner has sustained a damage that has resulted in a "taking or damaging" of property, these are "inverse or reverse condemnation" suits.

2.11.3 Injunction

Where a statutory right is violated to the landowner's material injury, courts may grant an injunction. The injunction could enjoin the highway agency from taking a certain action or require the abatement of a certain condition which it has created. This does not prevent the recoupment of compensation for damages that have occurred. As a general rule, injunctions may be granted even though the extent of the injury is incapable of being ascertained or of being computed in dollars.

2.11.4 Tort Claims

In the early development of the law, the courts recognized that whenever it was possible, compensation should be awarded to those persons harmed by the actions of another. This was the origin of the theory of tort liability. In essence then, a tort, or civil wrong, is the violation of a personal right guaranteed to the individual by law. A person has committed a tort if he has interfered with another person's safety, liberty, reputation, or private property. If the injured party can prove the defendant proximately caused him harm, the court will hold the defendant responsible for the plaintiff's injury, and the defendant will be forced to pay for the damage.

2.11.5 Claims against the State of Maryland

Appendix A contains guidance on dealing with claims against the State of Maryland.

2.12 Role Of The Designer

2.12.1 Responsibility

The designer has a two-fold responsibility for the legal aspects of hydraulic design. First, the designer should know the legal principles involved and apply this knowledge to his designs; and, secondly, he or she should work closely with the legal staff of his organization, as necessary, in the preparation and trial of drainage cases. The duties of the designer include direct legal involvement in the following areas:

- conduct investigations, advise, and provide expert testimony on the technical aspects of drainage claims involving existing structures and their highway approaches; and

- provide hydraulic design information during right-of-way acquisition to assist appraisers in evaluating damages and provide testimony in subsequent condemnation proceedings, when necessary.

2.12.2 Investigating Complaints

It is imperative that flooding complaints be dealt with promptly and in an unbiased manner. This means accepting the fact that the flooding is a serious problem for the complainer, and not accepting anyone's preconceived conclusions. All facts must be assembled and analyzed before deciding on what happened and why it happened. Also, it is well to list any other agency that could possibly have responsibility for a remedy to the flooding.

When the designer is requested to investigate a complaint, the following guidelines are recommended.

- <u>Determine Facts About The Complaint</u>

  -Show on a map the location of the problem on which the complaint is based.

  -Clearly determine the basis for the complaint (what was flooded, complainer's opinion as to what caused the flooding, description of the alleged damages, dates, times and durations of flooding).

  -Briefly relate the history of any other grievances that were expressed prior to the claim presently being investigated.

  -Obtain approximate dates that the damaged property and/or improvements were acquired by those claiming damages

Collect facts about the specific flood event(s) involved.

Rainfall data (dates, amounts, time periods and locations of gages). Rainfall data are often helpful regardless of the source.

-Document observed high water information at or in the vicinity of the area of concern. Locate high water marks on a map and specify datum. Always try to obtain high water marks both upstream and downstream of the highway and the time the elevations occurred.

-Determine the duration of flooding at the site of alleged damage.

-Determine the direction of flood flow at the damaged site.

-Describe the condition of the stream before, after, and during flood(s). Was the growth in the channel light, medium, heavy; were there drift jams; does the stream carry much drift in flood stage; was the flow fast or sluggish; did light, moderate, or severe erosion occur?

-Document the flood history at the site. Was highway overtopped by the flood? If so, what was the depth of overtopping; and, if possible, estimate a flow velocity across the highway.

-Obtain narratives of any eyewitnesses to the flooding.

-Obtain facts about flooding from sources outside the Administration, such as newspaper accounts, witnesses, measurements by other agencies (US Geological Survey, Corps of Engineers, Soil Conservation Service, etc) , maps, and Weather Bureau rainfall records.

-State facts about the highway crossing involved.

-Show profile of the highway across the stream valley.

-Give the date of the original highway/structure construction, the dates of any subsequent alterations to the highway or structure, and describe what the alterations were.

-Describe what existed prior to the highway, such as county road, city street, or abandoned railroad embankment, etc. Also include a description of the drainage facilities and drainage patterns that were there prior to the highway.

-Give a description of the existing drainage facilities.

-Give the original drainage design criteria, or give capacity and frequency of the existing facility based upon current criteria.

-Possible effects by others.

-Are there any other stream crossings in the vicinity of the damaged site that could have affected the flooding (pipelines, highways, streets, railroads, dams)?

-Have there been any significant man-made changes to the stream or watershed that might affect the flooding?

•Analyze The Facts

-From the facts decide what should be done to relieve the problem regardless of who has responsibility for the remedy. Could others possibly provide assistance?

•Make Conclusions And Recommendations

-What were the contributing factors leading to the alleged flood damage?

-Specify feasible remedies (This should be done without any regard for who has responsibility to effect a remedy).

The list under Determine Facts About The Complaint above is not all inclusive, nor is it intended that the entire list will be applied in each case. This outline is given as a guide to the type and scope of information desired from an investigation of a drainage complaint. It is advantageous to have available hydraulic design documentation as outlined in the Documentation Chapter of this manual. When the study report is completed, the designer should again analyze the facts, consider the conclusions and recommendations, and prepare a response to the complainer explaining the results of the investigation. Documentation of the facts and findings is important in the event there is future action.

2.12.3 Legal Opinion

Drainage matters range from the simple to the complicated. If the facts are ascertained and a plan developed before initiating a proposed improvement, the likelihood of an injury to a landowner is remote and the State should be able to

undertake such improvements relatively assured of no legal complications.

If the designer needs a legal opinion on a particular drainage problem or improvement, the requested opinion should state as a minimum whether:

- the watercourse under study has been viewed,
- there are problems involved, and what causes them (obstructions, topography, and development - present and future),
- the proposed improvements will make the situation better,
- the proposal requires that the natural drainage be modified,
- there is potential liability for doing something versus doing nothing,
- someone will benefit from the proposed improvements, and
- in general, what is proposed is "reasonable".

2.12.4 As A Witness

The designer should accept the responsibility of providing expert testimony in highway drainage litigation. Witness duty ordinarily requires considerably more time of a witness than the time spent in the courtroom. The best use of the designer's time can be arranged by consulting with legal counsel to determine what types of information and data will be needed, types of presentation needed, and when testimony will be required.

Testimony often involves presenting technical facts in layman's language so that it will be clearly understood by those in the courtroom. The designer's testimony generally describes the highway drainage system involved in the alleged injury or damage, and how that system affects the complainant. Design considerations and evidence of conditions existing prior to construction of the highway are important points.

2.12.5 Witness Conduct

The designer who is to serve as a witness should bear one fact in mind; the purpose of the court is to administer justice. Testimony should have one purpose - to bring out all known facts relevant to the case so that justice can better be served. Following are some pointers in being a witness:

- Tell the truth and do not try to color, shade or change your testimony to help either side.

- Never lose your temper or show prejudice in favor of one side that is not supported by facts.

- Do not be afraid of lawyers and give your information honestly.

- Speak clear and loud enough to be heard by everyone involved in the courtroom proceeding.

- If you do not understand a question, ask that it be explained. If you still do not understand what is being asked, explain that you cannot give an answer to that question.

- Answer all questions directly and never volunteer information the question does not ask for.

- Stick to the facts and what you personally know.

- Do not be apprehensive. Your purpose is to present the facts as you know them and that is all that will be expected.

- If you do not know the answer to a question, just admit it. It is to your credit to be honest, rather than try to have an answer for everything that is asked you.

- Do not try to memorize your story. There is no more certain way to cross yourself than to memorize your story and try to fit this story with the questions being asked.

- Work with your lawyer in preparing your testimony and stick to the facts as you know them.