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***321** MANAGING THE CUMULATIVE EFFECTS OF COASTAL LAND DEVELOPMENT: CAN MAINE LAW MEET THE CHALLENGE?

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***322** I. INTRODUCTION

Following a period of slow economic growth for the State of Maine in the early part of this decade, improved economic conditions and new demographic trends have renewed the demand for commercial, residential, and recreational development in coastal communities across the state. For many years, Maine has tried to stimulate growth in its communities. Now, many of its coastal towns face a huge development boom, particularly in the southern and midcoast areas, in communities such as York, Wells, Ogunquit, Kennebunk, Kennebunkport, Portland, Camden, and Belfast. These towns are struggling to find ways to control the increasing density of development along the coast and to prevent the associated decline in the scenic quality of these areas and their suitability for traditional maritime and public recreational activities. [FN1]

Environmental planners now recognize that a number of small-scale, unrelated land development decisions can have even greater deleterious effects on natural resources than larger-scale projects. [FN2] As a consequence, federal and state agencies are now seeking to incorporate a 'cumulative effects' criterion into environmental and land use planning programs. [FN3] Cumulative effects or impacts have ***323** been defined as the total effect on the environment of a series of related or unrelated land development activities taking place within one region and over a period of time. [FN4] Under Maine's principal environmental ***324** laws, however, only the larger, discrete projects are routinely subject to intensive review by the state's regulatory agencies. Some small-scale projects are subject to regulatory review, but they are considered only in light of their immediate impact on a specific natural resource such as a wetland. Most projects are licensed on the basis of their individual environmental characteristics, not the effect they will have in conjunction with past or future development. [FN5]

New residential construction, particularly the multi-unit project designed as second-home or retirement property, is one of the leading forms of incremental development, especially along the coast. The rapid pace and density of this development, spurred by current economic conditions, threaten with degradation some of Maine's most sensitive environmental resources. These resources include groundwater aquifers, wildlife habitat, scenic areas, and undeveloped shoreland. [FN6] Attempts to regulate such development often fail to assess accurately their full environmental impact because each project generally is examined as a distinct unit, without a consideration of the cumulative effects of a number of such projects if approved for the same area.

The 112th Legislature recognized that growth and development pose a threat to Maine's unique coastal environment and way of life. In response to that threat, the Legislature enacted a statute calling for more effective coastal growth management at the state and local levels. [FN7] The new coastal legislation, however, maintains the existing legal framework for land development control, a framework which assumes that local planning boards and town officials can effectively manage the competing demands on coastal resources. This legal ***325** framework relies on the state only for the protection of the most sensitive resources, such as sand dunes and wetlands, and for the review of large-scale developments. Local planning boards

are left with the responsibility of regulating most other development activities. Because of the complexity of many land use projects, and because of a greater susceptibility to the economic and political pressures of private developers, local governments are generally unable to deal effectively with land development pressures. In addition, the statutes that establish the powers of local government to regulate development provide too little guidance concerning the scope of authority a single community has to manage development.

Managing the cumulative effects of incremental development raises difficult legal and institutional issues regarding the nature of cumulative effects, the development tolerances of environmental resources, the type of data that should be required to support decisions about cumulative impacts, and the fairness of restricting individual developments in light of their contributions to a regional problem. [FN8] This Article begins with a discussion of the current statutory ***326** arrangements through which state agencies and local governments regulate coastal development in Maine. This discussion makes clear that although the current statutory scheme provides some room for measuring cumulative effects, Maine law at this time provides uncertain guidance on this issue to those political institutions charged with regulating development. Moreover, certain structural aspects of Maine law preclude a full review of the cumulative effects of individual land use activities.

This Article then examines briefly some of the constitutional principles that may restrict the regulation of cumulative effects in coastal development. It concludes that these constitutional principles provide no serious barriers to a well-planned legislative effort to manage cumulative effects.

This Article next reviews the experiences of two other states that have attempted to address the issue of cumulative effects in the regulation of coastal land use and development. From this review the Article concludes that success in addressing cumulative effects will depend upon a clear legislative definition of the problem and a statutory framework that provides unambiguous land management policy guidance, either through regulatory standards or comprehensive planning goals, to serve as the basis for local and state land use decisions.

Finally, this Article presents some general statutory proposals for changing Maine's approach to regulating cumulative effects. These proposals reflect the developments of the law taking place elsewhere and the evolution of environmental planning methods to incorporate a more holistic, ecosystem approach. The proposals build on the existing legal framework in Maine but suggest amendments to include a detailed definition of cumulative effects and clear guidance on how they are to be assessed. The proposals also include recommended changes in state and local land use control statutes to provide the substantive policies necessary to control the adverse cumulative effects of coastal development. Such proposals, if enacted into law, could significantly increase the ability of state and local governments to direct development in a manner that accommodates growth and development but that preserves the attributes of the Maine coastal environment that make development there desirable.

II. THE CONSIDERATION OF CUMULATIVE EFFECTS UNDER MAINE'S CURRENT COASTAL MANAGEMENT LAWS

Until 1986, none of Maine's principal environmental and land development control laws contained explicit reference to the problem ***327** of cumulative effects. [FN9] With the passage of new coastal legislation by the 112th Legislature, [FN10] however, state and local agencies now must consider the cumulative effects of development whenever they exercise their land use control authorities within the coastal regions of the state. [FN11] Unfortunately, grafting a cumulative effects criterion onto the framework of existing laws is not likely to succeed unless further amendments to these laws are made. Only when the laws are designed to ensure that decisionmakers are equipped with the guidelines, planning goals, and resource-capacity studies necessary to address the questions of development thresholds, development forecasting, and allocation of development rights, will the statutes allow effective management of incremental development.

A. Maine's Cumulative Impacts Statute

Recognition of the cumulative effects problem is not new in Maine. In 1977, the Governor's Advisory Committee on Coastal Development and Conservation commissioned, through the Department of Environmental Protection (DEP), an examination of the problem of cumulative impacts of incremental development on coastal resources. The consultant's report emphasized the need for adequate data and analytical techniques to identify potential cumulative effects and to amend state and local laws to address them. [FN12] The report specifically recommended that towns undertake more thorough comprehensive planning, zoning, and development review procedures, and that the state provide research and technical assistance to support this task. [FN13]

In addition, the Governor's Committee recognized that state laws 'do not generally consider circumstances where the individual impact of the proposed action would add to impacts of existing activities' and either harm valuable natural resources or exceed the capacity of public services. [FN14] The Committee recommended that Maine's Zoning Enabling Act, [FN15] Site Location of Development Act, [FN16] ***328** and Mandatory Shoreland Zoning Act [FN17] be modified to require consideration of cumulative impacts. [FN18] Despite the Committee's recommendations, the Legislature failed for almost a decade to enact any requirement that cumulative impacts of development plans be assessed prior to approval of the plans. [FN19]

In 1986, however, the 112th Legislature attempted to address the cumulative impacts problem when it enacted 'An Act to Enhance the Sound Use and Management of Maine's Coastal Resources.' [FN20] In passing the Act, the Legislature expressed its concern with the rapid pace of development in Maine's coastal communities:

The Legislature finds that the Maine coast is an asset of immeasurable value to the people of the State and the nation, and there is a state interest in the conservation, beneficial use and effective management of the coast's resources; that development of the coastal area is increasing rapidly and that this development poses a significant threat to the resources of the coast and to the traditional livelihoods of its residents . . .. [FN21]

The most important aspect of the new legislation is its articulation of a set of explicit coastal management policies. These policies address port and harbor development, marine resource management, shoreline management and access, hazard area development, state and local cooperative management, scenic and natural areas protection, recreation and tourism, coastal water quality, and coastal air quality. [FN22] Significantly, the shoreline management policy requires ***329** state agencies and local governments to conduct their coastal regulatory and planning functions in a manner that considers the cumulative effects of development on coastal resources. [FN23]

The 1986 Act thus provides the first explicit statutory notice of the problem of cumulative effects in the context of coastal land development. By providing clear legislative authority to consider and manage these effects, the law should have a salutary effect on the regulation of coastal development. The absence of a specific statutory mandate to consider cumulative effects, however, was only one factor that had been inhibiting Maine agencies from tackling the problem of cumulative impacts. In addition, the jurisdictional scope of the statutes has always been too limited, in both the size and types of activities regulated, to permit adequate review of the effects of development plans. The DEP can review only large subdivisions of land, major building projects, and construction proposals for coastal wetland and sand dune areas. Local governments may review smaller-scale projects, but their scope of review is limited to development within their boundaries, even though development outside their borders can significantly alter conditions in their towns. Moreover, the 1986 Act continues to rely upon case-by-case review of projects without providing an adequate procedure for the review of each project's potential effects. Even if individual projects are to be considered in light of the collective effects of other past and future projects, there will be no effective control of these effects if agencies have no information about the capacity of the natural or engineered environments to absorb them. That information provides a basis for ***330** judging the acceptability of

the projected effects. In order for agencies to have the information necessary to support these judgments, the existing legal framework that the cumulative impact statute builds upon must be amended to broaden the scope of review, to articulate substantive land use policies and goals, and to bring to the decisionmaking process a plan to channel development into locations where the natural resources have the capacity to sustain it.

This Article next examines Maine's statutory scheme for the regulation of coastal development, onto which the 1986 Act was grafted. This examination reveals the limited suitability of these laws for controlling the cumulative effects of development on both the natural resources of the coastal region and the public facilities of coastal communities.

B. Maine's Legal Framework for Controlling Coastal Development

Maine has eleven separate laws that together constitute its coastal management program. [FN24] Maine law approaches land development through regulatory programs designed to minimize the negative effects of projects according to a basic set of environmental criteria. The statutes vest most responsibility for controlling land use in local ***331** governments, acting through their citizen planning boards and zoning boards of appeals. In general, these legal bodies apply the laws by responding to private development initiatives rather than by anticipating and guiding them to appropriate locations. [FN25] For the purpose of controlling coastal land uses the most important of these laws are the Mandatory Shoreland Zoning Act, [FN26] the Site Location of Development Act, [FN27] the Alteration of Coastal Wetlands Act, [FN28] and the laws authorizing municipal land use controls: the Zoning Enabling Act, [FN29] the Comprehensive Planning Enabling Act, [FN30] and the Subdivision Review Enabling Act. [FN31] This section discusses the structure and limits of each of these laws as they relate to the regulation of cumulative impacts.

1. Alteration of Coastal Wetlands Act.

Maine's first coastal regulatory law was the Wetlands Control Act ***332** of 1967, now entitled the Alteration of Coastal Wetlands Act. [FN32] Similar to the federal wetlands regulatory program under the Federal Clean Water Act [FN33] and the Rivers and Harbors Act of 1899, [FN34] Maine's Alteration of Coastal Wetlands Act requires a permit from the Board of Environmental Protection (BEP) or an authorized municipality [FN35] before coastal wetlands may be dredged, drained, or filled, or before causeways, bridges, marinas, wharves, docks, and other permanent structures may be constructed on tidal or subtidal lands or on coastal sand dunes. [FN36]

The principal purpose of the Act is to protect the natural functions of wetlands, including their capacity to absorb storm water; their ecological role as wildlife habitat, nursery grounds, and food source for fisheries; and their value as recreational and open space areas. [FN37] The BEP may grant a permit to alter a wetland only if the applicant demonstrates that the proposed activity 'will not unreasonably interfere with existing recreational and navigational uses; nor cause unreasonable soil erosion; nor unreasonably interfere with the natural flow of any waters; nor unreasonably harm wildlife or . . . ***333** fisheries; nor lower the quality of any waters . . ..' [FN38] The applicant for a sand dune permit must likewise demonstrate that the proposed activity

will not unreasonably interfere with existing recreational or wildlife uses; unreasonably interfere with the natural supply or movement of sand within or to the sand dune system; unreasonably increase the erosion hazard to the sand dune system; or cause an unreasonable flood hazard to structures built in, on or over any coastal sand dune or neighboring property . . .. [FN39]

Although the wetlands statute does not explicitly mention cumulative effects, its implementing regulations require the BEP to 'consider the location and nature of the proposed activity in relation to the primary, secondary and cumulative impacts on the areas of concern articulated in the standards for granting permits' issued under the statute and as interpreted by the

regulations. [FN40] Despite the reference to cumulative impacts in the Act's implementing regulations, these regulations do not themselves define cumulative impacts. Nevertheless, the DEP has provided a definition of such impacts in the explanatory notes to the regulations enacted under Maine's Site Location of Development Act. [FN41] In these notes, the DEP defines cumulative impacts as 'those impacts that are realized when the incremental effects of individual developments add up to the point where certain thresholds of tolerance are exceeded.' [FN42]

Even with this reference to cumulative impacts, the Alteration of Coastal Wetlands Act inadequately addresses the problem for two reasons. First, the definition of cumulative impacts is incomplete. Second, the statute itself does not provide the BEP with sufficient jurisdictional scope to address cumulative impacts. The inadequacy of the definition is made clear as follows: Under the wetlands law, when the BEP receives a permit application, for example, to fill one-half acre of a salt marsh, it will examine the information accompanying the application as well as the comments of the reviewing agencies and of interested parties. The BEP then determines, inter alia, whether there is substantial evidence in the record to conclude that the filling will not unreasonably harm wildlife or fisheries. Application ***334** of a cumulative effects standard should involve considering not only the loss of the one-half acre but its loss in conjunction with past losses of wetlands and the future loss that could be anticipated if the precedent were set by approving this application. The definition in the Department's regulations does not mandate this type of review, however. The definition is, at best, ambiguous, leaving the Board without effective guidance on where to draw the line to prohibit further losses of marshland. The definition apparently requires an a priori determination of the thresholds beyond which additional development will be harmful. [FN43] Moreover, the definition does not indicate whether the Board may also consider, as part of its assessment of cumulative impacts, the activities outside the jurisdictional boundaries of the Act that may contribute to the secondary effects of the proposed wetlands project, and if so, how the BEP can regulate those effects beyond the Act's scope. [FN44]

Beyond this poor definition of cumulative impacts, the primary weakness of the Alteration of Coastal Wetlands Act for regulating cumulative effects is the limited jurisdictional scope of the statute. The law authorizes review of development proposals only if they are within the geographic area defined as 'coastal wetlands.' [FN45] Activities occurring landward of the salt-tolerant vegetation zone, [FN46] for example, may have a significant effect on a marsh, but the Act does not give the Board authority to review activities on adjacent uplands. [FN47] One of the major threats to wetlands is the encroachment of development ***335** along the fringe of the protected area. Such development damages the marsh's suitability as wildlife habitat, [FN48] and can also destroy the aesthetic benefits that are derived from open, natural areas. [FN49] The DEP has no authority over developments adjacent to, but not in, wetlands, unless they are subject to the Site Location of Development Act by virtue of their large size. [FN50]

2. Site Location of Development Act.

The Maine Legislature adopted the state's major land use control law, the Site Location of Development Act, [FN51] at a time when large-scale industrial projects were seen as one of the principal threats to Maine's environment. [FN52] The major factors leading to passage of the site location law were the new interstate highways, which brought the major population centers of New York and New Jersey to within a day's drive of the state; the affluence of the late 1960's resulting in second-home purchases, especially on Maine's inland lakes where waterfront land affordable by the middle class was still available; and the increasing energy needs of the northeastern states, which looked upon Maine's natural deepwater ports as capable of berthing the new oil supertankers. [FN53] Primarily, the Legislature was motivated ***336** in 1970 by fear of despoliation of the coast by industrial pollution or by an oil spill. [FN54]

Under the site location law, developers must obtain state approval by the BEP for commercial and industrial developments, including residential subdivisions of greater than twenty acres, [FN55] and for structures occupying more than 60,000 square

feet. [FN56] The statutory criteria guiding the issuance of permits include assessments of the developer's financial and technical capacity to meet pollution control requirements, the adequacy of provisions for traffic movement, the development's effects on the environment, the suitability of the soil, and the absence of discharges to ground water. [FN57] The criterion in the ***337** site location law for measuring environmental impact requires a finding that: 'The developer has made adequate provision for fitting the development harmoniously into the existing natural environment and that the development will not adversely affect existing uses, scenic character, or natural resources in the municipality or in neighboring municipalities.' [FN58] In addition, the general regulations under the law require the BEP to
consider the size, location, and nature of the proposed development in relation to:
A. The potential primary, secondary and cumulative impacts of the development on the character, quality, and uses of land, air, and water on the development site and on the area likely to be affected by the proposed development; and
B. The potential effects on the protection and preservation of the public's health, safety, and general welfare. [FN59]

The regulations explicating the statute's standard that a proposed project not adversely affect the uses and character of the environment also require the applicant to submit much of the information that will form the basis for the Board's determination whether the proposed development meets the standard. [FN60] Generally, the regulations specify design and performance standards that are intended to minimize the direct, or primary, effects of the proposed project on the immediately surrounding environment. [FN61] The regulations do include ***338** certain provisions, though, that require an assessment of the potential indirect, or secondary, effects of the proposal. For example, the applicant is required to supply evidence that the traffic 'generated by the development will not significantly affect the ambient air quality.' [FN62] To determine the effect on surface water quality, the BEP will look for evidence that the 'development or reasonably foreseeable consequences of the development will not discharge any water pollutants' affecting state water quality classifications. [FN63] To prevent salt water intrusion into ground water supplies the Board may require special analyses ' i n areas where salt water intrusion, the lowering of the ground water level, or land subsidence have been or can reasonably be expected to be a problem.' [FN64] In addition, the Board requires that all planned phases of a development be described in the initial application. [FN65]

The site location review process was intended to provide a comprehensive analysis of a single development's effect on a broad range of environmental parameters. Although the policies of the site location law seek to prevent the overall degradation of the environment, [FN66] structural aspects of the law prevent the achievement of this goal. The review process only applies to proposed developments that are significant in size. [FN67] Yet, in many land areas adjacent to coastal waters, large-scale projects are less likely to be proposed because sizeable tracts of undeveloped land are in short supply. These areas are, nonetheless, subject to the same scale of development by multiple projects. Moreover, a developer can easily evade application of the site location law simply by designing the project to be just under the threshold sizes established under the law. [FN68]

***339** Despite the reference in the site location law regulations to the problem of cumulative effects, the review process established by the statute focuses on the development's direct effects on the site or within the immediately surrounding area. The statute requires approval if the BEP finds that the developer has made 'adequate provision' to minimize the development's potential direct effects. [FN69] As with the wetlands criteria, the emphasis of the site location criteria is on mitigating the immediate impacts. Only the statute's traffic and water quality impact criteria require consideration of the proposed project's effects in light of other, existing or future developments in the same area. [FN70] The cumulative effects of several individual projects can be significant, even if each project's impacts have been minimized through changes in design or size. Yet the Act and its regulations take no account of this possibility. [FN71]

***340** 3. Problems in Implementing State Regulatory Statutes.

The BEP has rarely based its decisions to issue or deny permits upon the likely cumulative effects of a development project, relying instead upon an assessment of the direct impacts of the project itself. [FN72] One possible explanation for the Board's hesitance to base its decisions on cumulative effects is the difficulty of applying a cumulative impacts standard under the statutes as currently written. The following case study makes clear the difficulty the BEP has had in addressing cumulative effects under the regulatory laws as they apply to Maine's undeveloped natural areas.

Crescent Surf Beach has been recognized by both the federal and state governments as a unique natural resource. [FN73] The beach was ***341** listed on the 1978 Register of Maine Critical Areas [FN74] because it is 'the best remaining natural example in Maine of sandy double barrier spits'; is habitat to a number of plant species that are rare to Maine; and is one of the few remaining nesting areas for Least Terns and Piping Plovers in Maine. [FN75] The incremental transformation of Crescent Surf Beach began with the BEP's approval of two sand dune permits for residential homes in 1982. [FN76] Located on the eastern end of the beach, each project included a house, a gravel access road, a parking area, and a septic system. [FN77] At that time, the Board expressed concern over the impact of future developments along the beach, but because of the mitigation plan offered by the developers to prevent the direct disturbance of the shorebird nesting colony, the Board concluded that the projects did not cause 'unreasonable' harm and approved them. [FN78] In 1983, the BEP received a third application for construction of a dwelling on the beach. [FN79] The Maine Audubon Society recommended that the Board 'consider the cumulative impacts of this and past projects, as well as future developments, on the natural processes and wildlife of Crescent Surf Beach,' and noted:

As was predicted by some members of the Board last year . . . a 'domino' development pattern has emerged at Crescent Surf. If not stopped now, there will be a 'hardening' of Crescent Surf Beach by a gravel road down its spine; gravel parking lots; septic systems; and houses. Its ability to act as a barrier spit will be diminished as will its undeveloped character. [FN80]

***342** The cumulative impacts of the houses on Crescent Surf posed threats to the dune system itself and to the shorebird nesting colony. Nevertheless, the BEP approved each of the projects, conditioned by a formal agreement between the landowners and the Maine Audubon Society for the protection of the nesting colony. [FN81] The Board concluded 'that if the Least Tern protection program is carried out as proposed, then the project will pose no unreasonable adverse impact on potential Least Tern nesting colonies.' [FN82]

The development at Crescent Surf Beach illustrates the danger of failing to address the cumulative effects of all potential development when the first development application in an undeveloped area is considered. Once one house lot is approved, it is very likely that proposals to develop the remaining lots will be submitted. [FN83] Crescent Surf Beach is being transformed from a natural, dynamic beach system to a residential neighborhood, house by house. Each individual project may have a minimal effect, especially when mitigated by conditions and special protection plans; but when several projects are taken together, the natural thresholds may be exceeded. In the case of Crescent Surf Beach, the individual homes were found 'reasonable' and consequently approved. Yet, the cumulative effect of these and future homes may result in unreasonable interference with existing wildlife uses and the movement of sand, in violation of the Coastal Wetlands Act. [FN84]

***343** C. Local Land Use Controls

Maine's current legal framework for controlling land development relies heavily on the authority exercised by local governments through land use ordinances and regulations. Municipalities receive authority to enact these ordinances and regulations from the state's delegation of police powers through the home rule law, [FN85] through ***344** zoning, comprehensive planning, and subdivision review enabling statutes; [FN86] and through the Mandatory Shoreland Zoning Act. [FN87] Because of the broad authority of local governments under these statutes to regulate small-scale residential and commercial projects, these governments have the greatest potential to control the cumulative effects of incremental

development. The vast majority of land developed in this state comes under municipal review and is not subject to state oversight. [FN88] Unfortunately, as with the state-level laws, the jurisdictional scope and standards of local government enabling statutes make difficult the consideration of cumulative effects of coastal development. A discussion of the statutes empowering local authorities to regulate development makes clear the sharp jurisdictional ***345** constraints within which these authorities must act when attempting to regulate cumulative impacts. This discussion also suggests profitable ways in which statutory changes could make this regulation more effective.

1. Municipal Zoning, Comprehensive Planning, and Subdivision Review Laws.

The basic form of land use control is zoning, whereby the town divides itself into separate districts and adopts regulations specifying the various purposes for which the land and buildings in the districts may be used. [FN89] Through zoning, the town may specify permitted uses, uses allowed subject to conditions, performance standards for permitted or conditional uses, and general dimensional requirements, such as mimimum setbacks, development density, and height restrictions. [FN90] Zoning is designed primarily to maintain harmony among land uses within a community and does not generally include environmental considerations. [FN91] A town could, however, employ zoning effectively to prevent the incremental loss of resources and local character, if uses likely to generate cumulative problems are carefully located and performance standards are carefully defined. The local authority could require applications for conditional use permits to include information on the capacity of local resources and facilities to absorb the development's effects. [FN92] Further, the planning board's standards for approval could identify the adverse effects to be avoided and require that proposed projects be considered in light of existing and future developments.

The zoning enabling statute, however, contains a potential limitation on a cumulative effects scope of review. Conditional or contract zoning can only impose conditions 'which relate to the physical development ***346** or operation of the property.' [FN93] As a consequence, municipalities may not be able to incorporate conditions requiring off-site mitigation, for example, conditions designed to alleviate traffic congestion caused in adjacent neighborhoods by the rezoned use.

Maine communities may guide their local land use decisions, including zoning and subdivision reviews, through community comprehensive plans. A community comprehensive plan is prepared by local planning boards and adopted by the municipal legislative bodies. The purpose of such plans is to guide public and private development activities toward a common set of goals. The plans represent a 'compilation of policy statements, goals, standards, maps and pertinent data relative to the past, present and future trends of the municipality with respect to its population, housing, economics, social patterns, land use, water resources and their use, transportation facilities and public facilities . . ..' [FN94] Such comprehensive planning is mandatory in Maine only for municipalities that have adopted a zoning ordinance, [FN95] and for those communities obligated to adopt is shoreland zoning ordinance because they border on ponds, rivers, or tidal waters. [FN96] A comprehensive plan could be an important vehicle for addressing the cumulative effects of development, at least within the boundaries of the community itself. Through its plan, a city or town may articulate its vision of how to develop its natural and community resources. The plan may then serve as the basis for regulatory decisions about specific proposed land use activities. [FN97] The planning statute specifically authorizes the use of certain planning techniques that can help combat the cumulative effects of development, including planned unit development, site plan approval, the transfer of development rights, open space zoning, and clustered development. [FN98] The major deficiency of the planning statute with respect ***347** to the control of cumulative impacts is that single-community planning, no matter how comprehensive, cannot take full account of the impact that development permitted in a neighboring community may have on resources of regional importance. As long as community development planning is discretionary, municipalities are still likely to be affected by the cumulative effects of development permitted in adjacent communities.

As another regulatory mechanism, the subdivision of land into three or more lots within five years is subject to municipal approval pursuant to the Subdivision Review Enabling Act. [FN99] Under this law, any proposed subdivision must be reviewed by either the town planning board, if one exists, or by the municipal officers [FN100] to assess the subdivision's effects upon air and water quality, water availability, soil erosion, traffic, sewage and solid waste disposal, scenic quality, historic and natural areas, and shorelines. [FN101] The subdivision review criteria go beyond the traditional use and dimensional requirements of zoning and allow consideration of the development's likely demands upon municipal services and its environmental effects. None of the criteria, however, specifically refers to the cumulative effects of a proposed subdivision in combination with the demands already being placed on services and resources by prior subdivisions, or those likely to be made by future development. [FN102]

***348** There is, moreover, one provision in the subdivision law that goes against the philosophy underlying the management of cumulative effects. The statute defines a tract or parcel of land 'as all contiguous land in the same ownership, provided that lands located on opposite sides of a public or private road shall be considered each a separate tract or parcel of land unless such road was established by the owner of land on both sides thereof.' [FN103] A man-made boundary such as a roadway has little bearing on the environmental effect of a given development project. The effect of this definition is to exclude from subdivision review developments that can have significant effects upon resources.

Another major problem with the subdivision review statute is its failure to account for the condominium development that is proliferating in certain communities of the state, especially along the southern coast. [FN104] In a pair of decisions dealing with seasonal campsite developments, the Law Court has identified the essential element of a subdivision as 'the splitting off of an interest in land and the creation, by means of one of the various disposition modes recited in § 4956, of an interest in another.' [FN105] This interpretation limits municipal subdivision review to developments where the land is actually divided into lots with separate ownership. Condominium projects frequently maintain ownership of the underlying land in an association, ***349** with the individual dwelling units being owned separately. [FN106] Under the statute's apparently narrow definition of subdivisions such condominium developments would escape municipal subdivision review. [FN107]

2. Mandatory Shoreland Zoning and Subdivision Control Act.

Municipalities generally have the option to regulate local land uses through the adoption of zoning ordinances. [FN108] This option does not exist for land uses occurring in shoreland areas. These land areas are singled out for special treatment under the Mandatory Shoreland Zoning and Subdivision Control Act (hereinafter Shoreland Zoning Act), which requires municipal zoning and subdivision control of land within 250 feet of the normal high water mark. [FN109] These controls must address the following objectives: the prevention ***350** of water pollution; the protection of fish and wildlife, including their habitat and spawning grounds; the control of construction and land uses; and the conservation of shore vegetation, visual and physical points of access, and natural beauty. [FN110]

The statement of fact accompanying the bill enacted as the Shoreland Zoning Act identified the goals of local zoning of shoreland areas, and expressed a concern for the incremental degradation of the shoreline by unplanned development:
This proposed legislation . . . is designed to protect a highly sensitive environmental zone where land and water meet. . . . Once the [water] pollution is abated, once the waters become attractive again, unplanned resort sprawl, motels and commercial developments may block public access to the water and impair the aesthetic quality of the shores and natural setting. [FN111]

There are a number of deficiencies in the shoreland zoning program that have severely limited its utility in the fight against the cumulative effects of incremental development. Some of these deficiencies are due to limitations in the statute, and others

are the result of inadequate administration of the program by the state agencies responsible for it. First, the jurisdictional scope of the shoreland zoning statute is very limited. Shoreland zoning ordinances are required to control only development within 250 feet of the normal high water on the shoreline. [FN112] Beyond that distance, the municipality must rely on other municipal controls or state legislation, such as the site location law, to control the environmental effects of development. Yet land development activities just outside the shoreland area can result in the same negative effects that the program was intended to prevent. [FN113] For example, the shoreland boundary does not bring within the Act's purview development activities immediately upland of coastal wetlands, which are defined under the Alteration of Coastal Wetlands Act based upon the presence of salt-tolerant vegetation or the influence of tidal action. [FN114] Activities in the area immediately adjacent to wetlands can seriously undermine ***351** their water quality and suitability as wildlife habitat. [FN115]

Second, the state has required local governments to adopt only minimal restrictions on shoreland development in order to meet the Act's requirements. The Shoreland Zoning Act requires the State Planning Office and the Land Use Regulation Commission (LURC) to adopt minimum guidelines for the protection of shoreland areas. [FN116] The statute provides that if a municipality incorporates these minimum guidelines into its ordinance it would meet the Act's requirements. [FN117] The guidelines, however, simply set minimum dimensional standards for individual developments in terms of setbacks from the high water mark, lot size, and shore frontage. [FN118] The State Planning Office published the minimum guidelines in the form of a model zoning ordinance, [FN119] and did not provide direction to municipalities on the planning activities that would be necessary for effective shoreland protection. [FN120] As a consequence, municipalities have not adopted local shoreland plans that might have included more comprehensive controls on shoreline development or served as the basis for assessing the cumulative effects of development. [FN121]

Another critical deficiency in the Shoreland Zoning Act is the lack of effective state oversight of municipal administration of shoreland ordinances. Although the state may adopt suitable shoreland ordinances ***352** for municipalities that fail to do so, [FN122] the state agencies have no systematic method for reviewing the adequacy of municipal shoreland administration, and their power to compel municipal compliance is extremely limited. [FN123] For example, municipalities are not required to submit copies of their zoning amendments on a regular basis. Local decisions under the Act's variance provision that excuse applicants from compliance with dimensional requirements such as the shoreline setback or building height restrictions can undermine the purposes of the Shoreland Zoning Act if the variance criteria are too liberally construed. [FN124] According to the Minimum Shoreland Zoning Ordinance, [FN125] copies of all variances granted by local boards of appeals are to be submitted to the state oversight agency; but the state has no recourse if it believes that the variance criteria have not been met except to seek a mandamus order to the town that it 'administer' its ordinance. [FN126] In addition to being a time-consuming process, the mandamus order would have little effect since the town is already administering its ordinance, albeit permissively. [FN127]

***353** Finally, the Shoreland Zoning Act embodies the case-by-case regulatory approach to shoreline development and makes no reference to the potential adverse, cumulative consequences of numerous shoreline developments. Municipalities are not required to consider the cumulative effect of developments permitted under their shoreland ordinances; nor must they assess the effect of their permit actions on those resources--whether in neighboring communities or within their own boundaries--that have regional importance, for example, ground water resources or productive shellfish flats.

***354** III. CONSTITUTIONAL CONSIDERATIONS IN THE REGULATION OF CUMULATIVE IMPACTS

Any plan to modify state law to allow the regulation of the cumulative effects of coastal development must first address the constitutional limits on such regulation. This section examines two of the major constitutional provisions that may have caused local governments and the state to hesitate to regulate more aggressively the cumulative effects of land development:

the due process guarantee [FN128] and the prohibition against the taking of private property without just compensation. [FN129] In addition, the delegation of legislative standards doctrine [FN130] has played an important role in the judicial review [FN131] of local land use controls in Maine and may have implications for a cumulative effects control standard in a municipal land use control ordinance. [FN132]

To explore the principles underlying these potential challenges to state regulation of land use, this section sets out a hypothetical permit application and decision, and discusses how the constitutional questions arising under it would likely be resolved: [FN133] Assume that a 120-unit condominium resort has been proposed for development on a twenty-acre parcel located adjacent to a large salt marsh and wildlife ***355** preserve within a community of 2000 people. The municipality reviewed the proposed development under its site review and shoreland zoning ordinances and the BEP reviewed the project pursuant to the Site Location of Development Act and the Alteration of Coastal Wetlands Act. During the review process agency staff and local citizens expressed concerns about the project's potential effect on the scenic character and natural resources of the area, on wildlife habitat, and on water quality. These officials deemed the cumulative effects of the proposed development to be critical because two other large tracts of land adjacent to the salt marsh had already been developed and two more projects were under discussion by developers. Finally, assume that after denial of the BEP permits and the municipal conditional use permits and variances, the developer now seeks review of both decisions in the superior court. [FN134]

A. Due Process

The constitutional guarantee of due process requires that legislation***356** enacted under the police power bear a reasonable relationship to the public health, safety, morals, or welfare of the community. Such legislation must not be unreasonable, arbitrary, or capricious. [FN135] In State v. Rush [FN136] the Law Court, while considering the validity of a municipal ordinance, set forth the separate components of the due process standard under Maine law:

1. The object of the exercise must be to provide for the public welfare.
2. The legislative means employed must be appropriate to the achievement of the ends sought.
3. The manner of exercising the power must not be unduly arbitrary or capricious. [FN137]

When applying these standards, the court should apply a presumption favoring the constitutionality of state laws, and should presume that the municipal ordinance is reasonable. [FN138]

In our hypothetical lawsuit, as long as the administrative records contain evidence of the importance of the resources the cumulative effects standard is designed to protect and indicate the perceived harm to the state or community if these adverse effects are not prevented, both the state and municipal decisions to deny the permits would clearly meet the first two due process considerations noted by the Rush court. [FN139] The application of a cumulative effects standard in a development permit review process is clearly a reasonable means to achieve the goal of protecting natural resources and preventing the overburdening of municipal facilities such as roads, public parks, and water and waste disposal systems. [FN140]

The third due process challenge--the arbitrariness of the denial of the permits--would also fail, despite evidence of recent approval of two other developments adjacent to the salt marsh. Although the developers would allege that denial of their project, the size and nature of which is virtually identical to these other developments, is arbitrary and capricious, the due process clause does not require state and local agencies to approve similar development applications if the agencies determine that the proposals do not meet the regulatory ***357** criteria. [FN141] In Hall v. Board of Environmental Protection, the landowners made a challenge similar to this hypothetical claim with respect to the BEP's denial of a permit to construct a seasonal dwelling on a sand dune. [FN142] The plaintiffs argued that the BEP applied much more stringent standards to their permit application than to earlier permit applications and that the BEP's decision to deny the permit was therefore arbitrary,

capricious, and an abuse of discretion. [FN143] Evidence admitted on appeal to the superior court showed that the BEP had earlier approved fourteen other sand dune permit applications. [FN144] The superior court concluded:

The determinations of the Board being quasi-judicial in nature mandates that each determination be based upon the facts of each particular matter. The Court concludes that the Board's decision represents a rational and reasonable application of the statute and regulations to the facts presented, and was not arbitrary or capricious. Even if the Court accepts the Plaintiffs' argument that the Board's decision in their case should be measured for its consistency with other similar decisions, the limited supplemental record available suggests factual differences sufficient to distinguish each other case where a permit was granted. [FN145]

On appeal, the Law Court declined to review the other sand dune permit applications, stating that to do so would exceed the court's authorized scope of review. The court limited its review to a determination whether the administrative record of the challenged agency action contained substantial evidence to support the agency's factual findings. [FN146] Upon finding that it did, the Law Court affirmed the agency's decision. [FN147]

B. Taking Without Just Compensation

The most problematic constitutional challenge in denying a development permit premised on its cumulative effects is that the landowner has been deprived of his or her property without just compensation in violation of the taking clauses of the Maine and United ***358** States Constitutions. [FN148] In our hypothetical case, the developers would claim that the denial of their application on grounds of adverse cumulative impacts associated with other projects in the area is an unconstitutional taking of their property.

Case law on the taking issue does not provide a set of principles that are capable of exact application producing a predictable result. [FN149] Resolution of each case depends upon the particular facts, including the value of the affected property, the nature and restrictiveness of the government regulation, the total amount of property the owner has, and the other uses the land is capable of supporting. [FN150] Despite the fact-sensitive character of the taking question, it is unlikely that a court would consider the municipality's or the agency's denial of the permits based on a cumulative impact assessment an unconstitutional taking of property.

The Maine Law Court has set forth Maine's taking law by relying on federal court decisions, principally Pennsylvania Coal Co. v. Mahon. [FN151] In Seven Islands Land Company v. Maine Land Use Regulation Commission, [FN152] the Law Court described the standards for determining when a regulation of private property amounts to a taking:

[T]he principal focus of the courts in 'taking' cases has become a factual inquiry into the substantiality of the diminution in value of ***359** property involved.

. . . .

. . . Since ownership consists of a 'bundle' of property rights, the mere extinguishment of one of those rights does not necessarily amount to a taking without compensation. The question is whether the right in question constitutes 'a fundamental attribute of ownership' such that its extinguishment would render the property substantially useless. [FN153]

Although the court did not elaborate on what constitutes the fundamental attributes of ownership, it did say that the opportunity to use property for future profit is not a protected property interest requiring compensation for its diminution. [FN154] The procedure the Law Court adopted for evaluating a taking claim involves comparing the value of the property at the time of the governmental restriction with its value after the restriction is imposed, looking at the property as a whole and not merely at the portion that is immediately affected by the restriction. [FN155] If the reduction in value is so substantial that the property has lost all practical value, the court will find that an unconstitutional taking has occurred. [FN156]

The United States Supreme Court has announced standards regarding the taking issue in the context of a municipal zoning restriction that have direct relevance to a regulation designed to control the cumulative effects of development. In Agins v. City of Tiburon [FN157] the challenged zoning provisions were aimed at preventing the cumulative loss of open space by limiting the developable acreage of a single landowner. The Court stated:
The application of a general zoning law to particular property effects a taking if the ordinance does not substantially advance legitimate state interests, or denies an owner economically viable use of his land. The determination that governmental action constitutes a taking is, in essence, a determination that the public at large, rather than a single owner, must bear the burden of an exercise of state power in the public interest. Although no precise rule determines when property has been taken, the question necessarily requires a weighing of private and public interests. [FN158]

***360** In Agins, the State of California had mandated the development of local open-space plans to discourage the 'premature and unnecessary conversion of open-space land to urban uses' and thus to preserve agricultural uses, scenic beauty, recreation, and natural resources. [FN159] The Court held that such land use plans advance legitimate governmental purposes of longstanding recognition. [FN160] It also noted that the zoning ordinances benefit the landowners as well as the public by assuring orderly development and the provision of open space. The developers had not been deprived of a fundamental attribute of ownership, the Court concluded, as they were still free to submit a development plan to local officials for a lower density development of up to five houses on the five acres. [FN161]

***361** To prevail on their taking claim in our hypothetical, the developers would have to establish that their property had been rendered substantially useless by the Board and town decisions, and that the land is now stripped of all practical value. [FN162] The fact that high density residential development is the most profitable use of certain land does not render the restriction upon it invalid. [FN163] The developers would have to show instead that application of the cumulative effects standard would prevent them from obtaining approval of any form of development of their land, and that they were unfairly bearing the costs of land preservation for the public benefit. [FN164]

***362** C. Delegation of Legislative Authority

The hypothetical developers may claim that the state statutes or the local ordinance give insufficient guidance to the decisionmaking bodies and therefore constitute an unconstitutional delegation of legislative authority. [FN165] They could argue that the ordinance leaves too much discretion in the board to determine when a proposed land use would contribute unreasonably to the cumulative degradation of important natural resources or to an overburdening of municipal facilities. As the Law Court has stated, municipalities and their planning and zoning boards 'have no inherent authority to regulate the use of private property.' [FN166] This power is conferred upon them by the state and may not be delegated by the Legislature to the town or by the town to a local administrative body 'without a sufficiently detailed statement of policy' that will guide its application and prevent arbitrary decisions solely in the discretion of the administrator. [FN167] The delegation of legislative authority doctrine is a constitutional principle which applies to all state and local administrative bodies. [FN168]

In assessing the constitutionality of a delegation, the court will assess 'the feasibility of prescribing precise standards without frustrating the purposes of necessary legislation.' [FN169] The court may find that the purpose of the legislation requires the regulatory agency to ***363** have sufficient flexibility to respond to changes in technology. Procedural safeguards to protect against an abuse of discretion may then compensate for this lack of precision. [FN170]

The Maine Supreme Judicial Court has applied the delegation doctrine to municipal land use ordinances in a number of recent decisions. [FN171] In Cope v. Inhabitants of the Town of Brunswick, [FN172] developers challenged two standards in the town's zoning ordinance controlling whether an applicant is entitled to a zoning exception. Under the challenged standards, the zoning board of appeals was required to determine, before granting an exception, whether the proposed use

would 'adversely affect the health, safety or general welfare of the public,' or would 'alter the essential characteristics of the surrounding property.' [FN173] The Law Court found these standards inadequate in that they required essentially legislative judgments, which only the voters of Brunswick could make, and included the same general considerations that the town was required to address when it enacted the ordinance. 'The delegation is improper if the Board is permitted to decide the same legislative question anew, without specific guidelines which permit the Board to determine what unique or distinctive characteristics of a particular apartment building will render it detrimental or injurious to the neighborhood.' [FN174]

***364** In light of the case law on the delegation doctrine, the municipal ordinance should contain specific criteria identifying the nature of the cumulative effects that are of concern and how the planning board should determine whether a proposed development poses adverse cumulative effects.

The foregoing review indicates that any new legislative effort to regulate incremental development will need to address the following areas: First, the legislation will need to contain a clear and detailed definition of cumulative impacts and a description of the process that state and local decisionmakers must follow in order to assess the potential cumulative impacts of their land use decisions. Second, the state laws authorizing Department of Environmental Protection and municipal land use decisions should be amended to close loopholes and to decrease the minimum size of projects that are subject to state site location review. Maine's statutes regulating coastal development should be amended to include an explicit requirement that cumulative impacts be considered in all applications for wetlands and site location of development permits, for subdivision and site plan approval, and for conditional use and variance approval under the local shoreland zoning ordinance. Finally, the state should clarify the requirement for local comprehensive planning for shoreland areas and provide guidelines to municipalities on the preparation of these plans, particularly those elements that can help protect resources that are particularly susceptible to incremental degradation, such as undeveloped areas, wildlife habitat, and public access to the shoreline. State-proposed guidelines should indicate the kind of information about future development and its potential environmental effects that local plans should contain in order to be used in a cumulative impact assessment of individual land development proposals.

To meet potential constitutional challenges the cumulative impact statute should identify the legitimate state interests that the statute serves, for example, the conservation of important wildlife habitat and other natural resources and the protection of public facilities from being overburdened by poorly planned development. All forms of land use development that could contribute to the cumulative degradation of these resources should be subject to cumulative impact review. If restrictions on land use are necessary in particular areas to prevent adverse cumulative effects, landowners should have some development options left open to them or have an opportunity to transfer any development rights they may have to other property not subject to the same restrictions. The legislation should give guidance to state and local decisionmakers on how cumulative impacts are to be weighed to prevent arbitrary decisions or decisions ***365** that place the burden of the restrictions solely on one landowner. Finally, the assessment process outlined in the legislation should provide full participation by the landowners and developers and other interested parties, in order to ensure that all relevant information is brought before the decisionmakers and that all interests are considered.

With these general conclusions in mind, this Article next looks at the experience of other jurisdictions for guidance on how to address these specific needs, focusing on states where legislation requires an assessment of cumulative impacts in coastal regulation and where the courts have had an opportunity to consider efforts to implement this requirement. The purpose of this review is to identify problems that other states have encountered and ways in which Maine lawmakers can avoid these problems in implementing an effective cumulative impact approach to coastal land use management.

IV. CUMULATIVE EFFECTS MANAGEMENT IN OTHER STATES

Other states as well as certain agencies of the federal government have wrestled with various aspects of the cumulative effects problem. This section examines the experiences of two states with cumulative impacts regulation and illustrates the difficulties that can be avoided by careful legislative development of a cumulative impact statute: first, the efforts of the State of Florida to prevent the cumulative loss of wetlands through individual dredge and fill projects, and, second, those efforts of the State of California, where cumulative impacts assessment has been incorporated into both a general environmental review statute and a coastal development review process. In light of the experiences of these two states, and in view of the deficiencies in Maine's legal framework that were outlined earlier, this Article concludes with a set of proposed changes in Maine law through which the state could achieve more comprehensive management of coastal development.

A. Florida: Wetland Protection

The Florida experience illustrates the difficulties of proceeding with a cumulative effects standard under a regulatory scheme without a statutory provision providing clear authority, definitions, and policy guidance. The Florida courts have generally supported the use of a cumulative impacts standard in coastal regulatory decisions, but because the principal agency has never based a permit decision solely upon evidence of cumulative effects, the courts have not had an opportunity to decide what constitutes substantial evidence sufficient to deny a permit on the grounds of cumulative impacts. Florida now has a statutory requirement to consider the cumulative effects of coastal development, but its new law does not provide adequate guidance on how much weight the agency should give ***366** these effects in permit decisions. Moreover, the law's legislative history creates some uncertainty on whether Florida's coastal regulatory agency must make explicit resource allocation decisions when granting or denying development permits.

Florida addresses the cumulative effects of coastal development primarily through regulatory legislation designed to protect coastal water quality and wetland areas. [FN175] The principal statute controlling the alteration of the coastal environment is the Warren S. Henderson Wetlands Protection Act (hereinafter the Henderson Act). [FN176] This Act, a wetlands dredge and fill law similar to Maine's Alteration of Coastal Wetlands Act, [FN177] does not speak directly of 'cumulative effects' but instead addresses the problem by requiring the Florida Department of Environmental Regulation (DER) to consider the following matters:

(1) The impact of the project for which the permit is sought.

(2) The impact of projects which are existing or under construction or for which permits or jurisdictional determinations have been sought.

(3) The impact of projects which are under review, approved, or vested pursuant to [Florida law], or other projects which may reasonably be expected to be located within the jurisdictional extent of waters, based upon land use restrictions and regulations. [FN178]

A similar broad standard is used in the administration of stateowned water bodies under the Aquatic Preserve Act of 1975. [FN179] Both ***367** statutes address the problem of cumulative effects through a case-by-case, regulatory approach.

The Florida Legislature enacted the Henderson Act to codify the DER's prior administrative practice of using cumulative effects as one decision criterion [FN180] and to 'assure the equitable distribution of the wetland resource.' [FN181] Before the Henderson Act was passed in 1984, the DER took the position that consideration of cumulative effects of proposed projects, despite the absence of an express statutory or regulatory mandate, was an essential element of its statutory responsibility. [FN182] Although the DER did not examine these effects routinely, it did use a cumulative effects standard in a number of cases to deny projects that posed relatively minimal adverse environmental effects if the circumstances also indicated that a number of additional permit applications were likely to be filed for similar projects. Denial of the pending application was justified by the expected impacts of these similarly situated projects. [FN183] Examination of a number of these earlier DER decisions makes clear the utility of firm legislative guidelines in providing support for a regulatory

agency's use of a cumulative impacts standard.

In Kyle Brothers Land Co., Inc. v. Florida Department of Environmental Regulation, [FN184] one of the DER's earliest uses of a cumulative effects doctrine was upheld upon administrative appeal. In Kyle Brothers, the DER denied a permit to dredge a canal because of an unacceptable potential for storm water runoff and septic waste ***368** leachate from the projected maximum number of houses that could be built. [FN185] By projecting the development potential for the area, the regulatory agency was able to discern the future cumulative environmental implications of dredging the canal and, finding these unacceptable, denied the permit. [FN186] The DER argued that its cumulative effects policy was necessary under Florida's administrative consistency doctrine, [FN187] which requires agencies to approve and deny permits in a uniform and consistent manner. The DER reasoned that if a project presented only a small adverse impact on a waterbody but its approval would set a precedent for the approval of future projects, the cumulative effect of which would be detrimental, then the DER would have to deny the first project in order to justify disapproval of subsequent projects. [FN188]

The administrative consistency rationale for a cumulative impacts doctrine was, on more than one occasion, rejected by administrative hearing officers responsible for permit appeals. In Rossetter v. Florida Department of Environmental Regulation, [FN189] for example, the DER denied an application to dredge a channel adjacent to an existing boat dock to provide deep water access to an owner's property on the grounds that it would set a precedent for the issuance of future permits and because the cumulative effects of such activities would violate the policies of the wetlands law. The hearing officer disagreed with this reasoning and concluded that even if the proposal were approved the DER would be free as a matter of law to deny subsequent permits if the area were to become degraded. [FN190] The Department Secretary overruled this conclusion, citing earlier DER permit decisions as evidence of its policy to consider cumulative adverse effects, even absent a duly promulgated rule. [FN191] The Secretary ***369** based her decision on the public interest standard of the wetlands law requiring consideration of all categories of impacts. [FN192] She rejected outright the case-by-case, individual impacts approach suggested by the hearing officer:

The problem inherent in such an approach is that the Department would be without means to prevent the adverse effects that it has predicted. Each project of a similar nature would probably have its predicted minor adverse effects until the water body was in a threatened condition. While the Department might have chosen a policy that allowed the water body to be degraded in a first come, first served basis until the natural system was on the edge of substantial degradation, the Department has chosen instead to assure a healthy natural system, more consistent with the public interests identified in [the statute]. [FN193]

Although the Secretary upheld the agency's authority to resolve permit applications based on the cumulative effects of a given project, she accepted the hearing officer's finding of fact that the possibility of cumulative effects was too speculative in this particular case and denied the permit on other grounds. [FN194]

The DER has taken exception to the views expressed by some hearing officers that the Department lacks authority to apply a cumulative effects standard. Nevertheless, while the DER continues to assert its authority to employ this broad standard, the agency has tended to avoid relying on the cumulative effects standard when denying a permit. This reluctance to make full use of the doctrine has added to the uncertainty regarding the doctrine's legal validity. [FN195]

***370** In del Campo v. Florida Department of Environmental Regulation, [FN196] however, one district court of appeals recognized the DER's authority to apply a cumulative scope of review in permit decisions. The court rejected the hearing officer's conclusion that the DER was unauthorized to consider evidence concerning to secondary and growth-facilitating effects of a proposed bridge to an undeveloped island, and vacated an order granting a dredge and fill permit. The del Campo court based its decision, however, on the potential waste in the construction of the bridge should the island's development be subsequently disapproved by the DER or another agency; it did not have to examine the environmental consequences of the

full 'build-out' of the island's development. [FN197]

Through passage of the Henderson Act, the Florida Legislature intended, in part, to codify the DER's informal administrative rule, and thereby to establish a statutory principle of equitable distribution of wetland resources. [FN198] While the Florida Legislature was considering an earlier draft of the Henderson Act, it replaced the term 'cumulative impacts' with 'equitable distribution,' thus shifting the focus away from resource protection to the fair distribution of property rights. [FN199] The equitable distribution concept assures that ***371** property owners' rights in limited resources, such as shoreland property, will not be lost through the piecemeal granting of permits that over time leads to destruction of the resource, thereby precluding its future use. When the new law was codified, however, the concept of equitable distribution was replaced by a reference to 'considerations in granting or denying permit for activity that will effect waters,' a change which may have altered the thrust of the section. [FN200] It is unclear how the legislative intent behind the new provision will be interpreted because the DER, as a result of the complexities associated with case-by-case cumulative effects regulation, has postponed promulgation of administrative regulations to implement the equitable distribution/cumulative effects standard. [FN201]

Now that the Henderson Act expressly requires that the DER consider such impacts, the agency will be better able to use its cumulative effects standards as a decision criterion. The DER's implementation of the new provision should be watched closely by other coastal jurisdictions experiencing rapid growth for guidance on how to address these concerns. [FN202]

***372** B. California: Environmental Review and Coastal Development Regulation

Under its environmental impact review statute, the California Environmental Quality Act (CEQA), [FN203] California has had more success than Florida in addressing the problem of the cumulative effects of development. Through judicial interpretations of certain key terms in CEQA and the incorporation of these rulings in administrative standards, California has been able to develop one of the most comprehensive cumulative impacts standards of any United States jurisdiction. [FN204] California's comprehensive coastal planning and development control statute, the Coastal Act of 1976, [FN205] also embodies a cumulative impacts standard as well as a number of substantive policies and regulatory criteria specifically designed to mitigate or prevent the cumulative degradation of certain critical coastal resources. Thus, California provides a valuable source of guidance for any other jurisdiction seeking to manage incremental development in its coastal communities.

Enacted originally in 1970, CEQA's major purpose was to ensure full disclosure of significant environmental effects of projects with which the state government was associated, either as developer or as regulator, [FN206] and to reduce any adverse effects through the selection of alternative actions. [FN207] There was no express reference to cumulative effects in CEQA until 1972, when a provision was added requiring preparation of guidelines to assist agency determinations of when an environmental impact report (EIR) is necessary. [FN208] Under this provision a project would have a 'significant effect on the environment' and thus require an EIR when, inter alia, ' t he possible effects of a project are individually limited but cumulatively considerable.' [FN209] The first set of guidelines issued by the state, however, provided little additional detail on the meaning of the term 'cumulatively ***373** considerable.' [FN210]

The California Legislature amended CEQA in 1976 to add greater precision to the term, stating that 'the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.' [FN211] The 1976 amendment was followed by revisions of the guidelines, defining 'cumulative impacts' as 'two or more individual small effects which, when considered together, are considerable or which compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects.' [FN212] The 1976 definition of cumulative impacts called for an expanded review of environmental effects in two different circumstances: first, when a single project posed numerous small

effects that together caused concern, and second, when two or more projects posed impacts whose combined effects were of concern. The definition, however, made no reference to the timing of such projects or whether possible future projects should be considered.

In Whitman v. Board of Supervisors of Ventura County, [FN213] a California court for the first time considered directly the extent to which an agency must discuss possible cumulative effects under the CEQA guidelines. In doing so, the court looked to judicial interpretations of analogous provisions in the federal National Environmental Policy Act. [FN214] The Whitman court found it significant that federal courts had required federal agencies to consider not only the impacts of the project under review but "related Federal actions and projects in the area, and further actions contemplated." [FN215] Following federal case law, especially the federal district court decision ***374** in Akers v. Resor, [FN216] the Whitman court quoted three required elements of an adequate consideration of cumulative effects:
'(1) a list of projects producing related or cumulative impacts;
(2) a brief but understandable summary of the expected environmental impacts to be produced by those projects with specific reference to additional impact information where such information is available; and
(3) a reasonable analysis of the combined or cumulative impacts of all the projects.' [FN217]

The impact report in dispute in Whitman concerned the approval of an exploratory oil and gas well. The report's consideration of cumulative impacts was, in the court's view, wholly inadequate because it discussed in summary form only the small number of similar wells that had recently been approved or were pending approval, omitting any reference to the extensive oil production activities already existing or planned for the area. [FN218]

The Whitman decision had a major effect on the use of the cumulative effects standard under CEQA. In 1980, revisions to the guidelines incorporated those elements set forth by the Whitman court as part of a cumulative impacts review. [FN219] The state further refined these elements in 1983 when the guidelines took on their present form, presenting the most comprehensive cumulative effects standard in the United States:
(a) Cumulative impacts shall be discussed when they are significant.
(b) The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided of the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness. The following elements are necessary to an adequate discussion of cumulative ***375** impacts:
(1) Either:
(A) A list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those projects outside the control of the agency, or
(B) A summary of projections contained in an adopted general plan or related planning document which is designed to evaluate regional or areawide conditions. Any such planning document shall be referenced and made available to the public at a location specified by the lead agency;
(2) A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available, and
(3) A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable options for mitigating or avoiding any significant cumulative effects of a proposed project.
(c) With some projects, the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis. [FN220]

This provision is a significant advance on the earlier versions of the guidelines and makes several very important additions. First, it provides alternative methods for determining which other projects to consider in conjunction with the particular

project that is the subject of the EIR. Agencies have the option of developing their own lists of projects that they deem to be 'reasonably anticipated future projects,' or of relying on the development projections of regional land use plans. [FN221] The provision also requires a discussion of options for avoiding or mitigating any adverse cumulative effects. Agencies are told, in essence, how far they are required to go in describing and considering potential cumulative effects of other projects. The emphasis is clearly intended to be on the impacts of the immediate project, but with discussion of cumulative effects as is consistent with a standard of reasonableness and practicality. [FN222]

Since 1983, then, the State of California has had in place one of ***376** the most comprehensive and detailed statements regarding the role of cumulative impact analysis in environmental decisionmaking. [FN223] The CEQA guidelines make clear the scope of each agency's responsibility to collect and assess information on effects that could act together to cause undesirable conditions in the natural and human environment.

These comprehensive guidelines were judicially examined in 1984 by a California district court of appeals in San Franciscans for Reasonable Growth v. City of San Francisco. [FN224] The court was asked to rule on the adequacy of the city's compliance with the most recent cumulative impacts provisions of the CEQA guidelines. The issue before the court went to the crux of the cumulative effects analysis problem: how does an agency determine which additional projects it should consider in its review as likely, either now or in the future, to contribute to adverse environmental conditions? [FN225]

In San Franciscans for Reasonable Growth, the court examined the environmental report prepared by the city's planning commission and found that a proposed downtown office complex would violate the cumulative impact requirements of CEQA. The planning commission had interpreted the phrase 'reasonabl[y] foreseeable probable future projects' to mean either projects under construction, or projects approved, but not yet under construction. [FN226] The court rejected this narrow view, holding instead that the Act required a review of related projects (in this case, other downtown high-rise developments) that were currently under environmental review, including those projects under the administrative jurisdiction of other city, state, and federal agencies. [FN227] In the court's reasoning, these projects are 'sufficiently quantified so as to make an analysis of their future impacts far more accurate and useful than sheer speculation.' [FN228] Such projects, given the developers' investment in planning and preparation for governmental review, were not 'remote and contingent possibilities.' [FN229] The danger, the court ***377** noted, of not including other projects with such a likelihood of completion would be the further congestion of traffic corridors and the overburdening of public transportation facilities in downtown San Francisco. Moreover, by underestimating the amount of new downtown development and understating the severity of its impacts, the planning commission seriously undermined the basis for imposing potential mitigation measures. [FN230] This had the effect, in the court's view, of 'skew ing the Commission's perspective concerning the benefits of the particular projects.' [FN231]

Beyond these considerations, the court also found that subversion of the cumulative impact review process threatened the democratic foundations of administrative decisionmaking. The incomplete analyses contained in the EIR could not demonstrate to the public that the agency had considered the full environmental consequences of its actions, or
'enable the public to determine the environmental and economic values of their elected and appointed officials thus allowing for appropriate action come election day should a majority of the voters disagree.' . . . To the contrary, these EIRs never forced the Commission's true values into the public forum. Rather, they allowed the Commission to appear to have acted reasonably. [FN232]

The careful analysis and reasoning in San Franciscans for Reasonable Growth adds significantly to the understanding of the cumulative impact review process. The decision has been criticized, though, for requiring a form of analysis that would be both counter-productive to CEQA's objectives and, under certain circumstances, extremely difficult to implement. [FN233]

This criticism suggests that to use a developer's application for environmental review to indicate that a project is 'reasonably foreseeable' is to rely on the developer's subjective conclusion that a project is probable. According to this view, the developer's opinion is an irrelevant consideration and to rely upon it as an indication of a project's likelihood implies that a proposed development, once submitted for review, is a fait accompli. [FN234] A second criticism has been that requiring agencies to incorporate ***378** into their assessments of current projects those projects newly submitted for review would subject the review of the initially proposed projects to repeated 'halts' while new applications were factored into the EIR's cumulative impacts assessment. [FN235]

Obsiously, an agency could prevent the second problem by using a cut-off date for computing the effects of new proposals, for example, the date of issuance of the draft EIR. [FN236] The problem of relying on the developer's subjective views of a project's likelihood could be addressed through provisions allowing the agency to make case-by-case, preliminary determinations that projects under review have a reasonable likelihood of approval if an anticipated set of permit conditions are met. This approach would allow the agency to consider the project without committing itself to its approval. A better approach may be to take advantage of the alternative provided in the CEQA guidelines, which allows an agency to use, in lieu of a list of 'reasonably anticipated future projects,' a 'summary of projections contained in an adopted general plan or related planning document which is designed to evaluate regional or areawide considerations.' [FN237] The full development or 'build-out' projections in the general plan could be supplemented with the more specific information on projects provided by their applications for environmental review. By calculating the environmental effects of the level of development projected in the general plan, and adding to these effects the specific impacts of projects under environmental review, an agency can have available at all times sufficient information to conduct a cumulative impacts analysis. [FN238]

In addition to cumulative impacts assessment under its environmental review statute, California controls cumulative effects under its coastal planning law. The central feature of the California Coastal Act is mandatory local planning, guided by state policies ***379** that are designed to manage incremental development and prevent its adverse cumulative effects. [FN239] All development activities taking place in the coastal zone of California must obtain a coastal development permit [FN240] and meet the substantive policies of the Act, which address public access, recreation, protection of the marine environment, and conservation of land resources, and which embody general performance standards for development. [FN241] The Act requires each city and county in the state to prepare a local coastal program, which must be submitted for review and approval to the California Coastal Commission. [FN242] If the local coastal program's land use plan has been certified by the Commission as consistent with the development policies of the Coastal Act, then the local government has the responsibility for licensing development. If, on the other hand, a local government has not received certification for its coastal program, then all development within its coastal boundaries must be approved by the California Coastal Commission. [FN243]

The Coastal Act's basic standard for all new coastal development, whether residential, commercial, or industrial, reflects both an explicit and implicit concern for cumulative effects. Development is required to be 'located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or . . . in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources.' [FN244]

The Coastal Act defines the terms 'cumulatively' and 'cumulative effect' as follows: 'the incremental effects of an individual project shall be reviewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future ***380** projects.' [FN245] Despite this definition's similarity to that found in the CEQA guidelines, [FN246] the Coastal Act's cumulative effects standard was not given as expansive a reading by the California courts as was the CEQA standard. This difference in judicial interpretation and emphasis can perhaps be explained by the fundamental differences in the two laws. Unlike CEQA's environmental disclosure purpose, the Coastal Act has substantive policies designed to dampen the adverse effects of coastal development on particular resources such as public access and visual quality. [FN247] Because

these policies will be translated into specific constraints on the use of property the courts may have been inclined to require more explicit legislative direction on the scope of the Coastal Act's cumulative effects standard.

Ultimately, the California legislature incorporated the terms of the CEQA definition of cumulative impacts into the Coastal Act. [FN248] The judicial interpretations of the Coastal Act's cumulative impact standard before it was amended to conform to the more specific CEQA standard illustrates the ambiguities that can arise when a state legislature applies a vague statutory standard to the problem of cumulative impacts.

Before the enactment of the new Coastal Act in 1976 and its addition of language referring to cumulative effects, the California courts were split over whether the state's coastal law authorized the ***381** Coastal Commission to consider the cumulative effects of development when determining whether a proposed development would have an adverse effect on the environment. In Natural Resources Defense Council v. California Coastal Zone Conservation Commission, [FN249] the court upheld the issuance of fifteen residential dwelling permits in a phased subdivision, rejecting a claim that the Commission was required to consider the potential impacts of the final 'build-out' of the entire subdivision, even though upon completion it would be the largest coastal community in that region of northern California. The court held that the Act required the Commission only to determine whether the 'permit at issue' posed an unreasonable threat of adverse environmental effects. [FN250]

In Coastal Southwest Development Corp. v. California Coastal Zone Conservation Commission, [FN251] however, the court reached a different result. In Coastal Southwest the construction of a nine-story Holiday Inn on a bluff overlooking a small harbor in southern California was disapproved by the Coastal Commission on grounds of its adverse cumulative effects. The Commission found that the building would block the public's view of the harbor and would have growth-inducing effects that would threaten the area's ecological integrity. [FN252] The trial court rejected the Commission's findings as speculative but the court of appeals reversed, finding that the evidence supported the Commission's conclusions regarding the loss of an important ocean view and wildlife habitat. [FN253]

The Commission had required the applicant to prepare an environmental impact report, which indicated that the most significant environmental effects would be the secondary and cumulative effects, and that these could be 'enormous.' [FN254] The court of appeals ***382** found a close relationship between the purposes of CEQA and the 1972 Coastal Act, in that both gave priority to environmental considerations, including the cumulative effects of development as recognized in CEQA and its guidelines. [FN255] The court endorsed and found applicable the rationale underlying a broad scope of review--that of preventing the piecemeal consideration of individual development activities that can circumvent the environmental policies of both statutes. [FN256] The court found a broad standard of review to be appropriate 'not only to the separate phases of an overall project but to any single project in relation to the conditions then existing and to conditions that would inevitably or probably result from accelerating or setting in motion a trend productive of adverse impact upon environment and ecology.' [FN257] In the court's view, denial of a development permit could be justified on the basis of development trends in the general vicinity if it threatened to eliminate a 'diminishing coastal resource.' [FN258] Under the 1972 Coastal Act's environmental priorities, arguments concerning a predominant trend of development would auger in favor of preserving 'that last outpost that will make it possible to hold onto some of the values the preservation of which is the stated purpose of the Act.' [FN259]

The discrepancy between the holdings in Natural Resources Defense Council [FN260] and Coastal Southwest [FN261] is not as great if one examines the administrative law principle reflected in both decisions: each decision upheld the discretion of the Coastal Commission to define the scope of review under the Coastal Act. Nevertheless, the decisions are at odds with one another. The major difference was the application of CEQA. When CEQA was held not to apply in Natural Resources

Defense Council, the cumulative effects of the subdivision's full build-out were not properly before the Commission. In contrast, CEQA's application in Coastal Southwest led to a full explication of the cumulative effects, placing them properly before the Commission and impossible to ignore. [FN262]

***383** As described above, the 1976 Act directs the Coastal Commission or the local permit issuing agency [FN263] to approve coastal development only if it is located where it will cause no significant adverse effects, either individually or cumulatively. [FN264] The California court of appeals in Billings v. California Coastal Commission [FN265] found that the Coastal Act's cumulative impacts standard was narrower than that provided by CEQA. In Billings, the Coastal Commission had refused to permit the subdivision of 118 acres of rural land into three parcels, reasoning that to do so would stimulate similar subdivisions, thereby threatening the 'continued viability of the mainly low intensive agriculture economy of the area,' [FN266] and would subsequently result in significant adverse effects. [FN267] The Coastal Commission relied on the expansive definition under CEQA to deny the application on the basis of its future adverse effects in encouraging further subdivision of rural land. [FN268]

The issue before the Billings court was whether the Commission's use of the CEQA standard to interpret 'significant adverse effects, either individually or cumulatively' was appropriate. The court rejected the Commission's position that the CEQA definition of 'significant effect' was applicable to the Coastal Commission's authority:
As the Legislature did not repeat CEQA's elaborate definition of cumulatively in [the Coastal Act], and specifically used the narrower term 'significant adverse effect,' we do not think 'probable future projects' can or should be read into the term 'cumulatively,' . . . the term should be given its everyday common sense definition. We conclude that the Commission erred in considering ***384** the precedential effect of the owners' minor subdivision. [FN269]

The court not only required the Commission to apply a narrow standard of review, it also apparently rejected the basic rationale behind a cumulative effects criterion. By finding further subdivision in the same area too remote and speculative to serve as the basis for the Commission's action, the court ignored the very pattern of urbanization that the legislature had hoped to control. [FN270]

Perhaps in response to the Billings court's narrow construction of the Coastal Act's standard, the California legislature, after Billings, amended the Act to provide a broader definition of the term 'cumulative impacts,' one that follows the CEQA definition's reference to the cumulative effects of probable future projects. [FN271] This more explicit definition in the Coastal Act was then relied upon in Bel Mar Estates v. California Coastal Commission [FN272] to deny a large subdivision proposed for the Santa Monica Mountains because of its adverse cumulative effects.

In Bel Mar Estates, the Commission denied a permit to subdivide 531 acres into 174 single-family home lots. The development would have required the construction of a four-lane highway and extensive filling, destroying the scenic and natural quality of the environment. The court of appeals sustained the Commission's decision, noting that 'we cannot say that the commission, and the trial court, erred in regarding the cumulative effect of this large development as such as to fall without the permitted development that the statute envisages.' [FN273] While the various impacts individually were not significant enough to justify denial, the combined effect of all impacts was significant. Moreover, denial of this project did not constitute an unconstitutional taking, the court suggested, because the denial only applied to the project as proposed. Other development could be permitted if the standards of the Coastal Commission were met. [FN274]

Thus, with the inclusion of a detailed definition of cumulative effects ***385** now contained in its major statutes affecting coastal development and control, California is likely to continue to lead the way in implementing comprehensive coastal management based upon a sensitive consideration of a very difficult aspect of development--its incremental nature and the

associated, cumulative loss of important environmental resources.

V. RECOMMENDATIONS TO IMPROVE MAINE'S COASTAL MANAGEMENT LAWS

The experiences of Florida and California indicate some of the difficulties agencies will encounter if they attempt to control the cumulative effects of land development through regulatory programs without clear legislative guidance on how to proceed. Both the Florida and California experiences indicate the importance of an explicit legislative mandate to consider cumulative impacts, especially the effects of future projects, when making land use licensing decisions. The Florida record also illustrates the need for clear policy direction from the legislature as to whether the primary purpose of the cumulative impact assessment is to allocate resources equitably among landowners or to protect the integrity of natural resources. California's record shows that it is possible to prepare specific guidelines on the conduct of cumulative impact assessments, and California's guidelines offer a valuable model on how the impacts of future projects can be factored into the assessment.

Maine's Coastal Management Policies Act of 1986 requires state and local agencies to consider the potential adverse cumulative effects of development when they make land use decisions under Maine's coastal management laws. Before this task can be accomplished, the Maine Legislature will need to make a number of changes to these laws to give agencies the capacity to address effectively the difficult problems of incremental development and its adverse cumulative effects. [FN275] The major statutes used to control development ***386** in coastal areas, the Site Location of Development Act, the Alteration of Coastal Wetlands Act, and the Shoreland Zoning Act, must incorporate a broader scope of review so that the forms of development that are most likely to contribute to cumulative impacts are scrutinized by state and local agencies. Each statute should include a detailed definition of cumulative impacts and a description of the information that must be considered in a cumulative impacts assessment. The Legislature should direct the State Planning Office and the Department of Environmental Protection to promulgate guidelines for municipalities to follow in conducting cumulative impact assessments under local land use control laws. These guidelines should direct local governments to adopt new or to revise existing land use plans and then to use them as the basis for projecting future development. The plans can also serve as a source of information regarding resources within the municipality and in neighboring communities that are particularly vulnerable to cumulative degradation. Without this planning basis, local efforts to control cumulative effects will encounter the difficulties of trying to make case-by-case decisions about cumulative effects without some previously agreed upon policies regarding the level of development the resources in the area can withstand.

In addition to these general recommendations, the following specific changes are recommended for the principal coastal management laws of Maine.

A. Alteration of Coastal Wetlands Act

The Legislature should amend the Alteration of Coastal Wetlands Act to specify its legislative purposes. The central purpose should be to prevent the adverse cumulative effects of land development activities on coastal wetland and beach system resources and to preserve these areas for their functions as wildlife habitat and storm buffer zones and for their scenic qualities. In addition, the Legislature should incorporate the other substantive land use policies of the 1986 Coastal Management Policies Act into the Wetlands Act to give guidance to wetland permitting decisions. To include all development activities likely to affect coastal wetlands, either individually or cumulatively, within the scope of review, the Legislature ***387** should increase the jurisdictional coverage of the statute to include areas outside of the wetland vegetation zone but where land development activities can adversely affect the wildlife habitat, water quality, flood prevention, and recreational and scenic values of wetlands. The Legislature should also amend the Act to include a planning process under which the Department of Environmental Protection develops special area plans for watersheds and other areas important to the wetland ecosystem. These plans should contain projections of local growth patterns and land use activities and identify the potential effects of such growth on the watershed-wetland ecosystem. They would also set preservation or restoration

goals for particular kinds of land areas. These plans could then serve as the basis for individual regulatory decisions and provide the information necessary to support a cumulative effects assessment for each permit application. The Act should require land use licensing decisions by both local and state agencies to be consistent with these plans.

To incorporate a cumulative impacts assessment process into wetland permit reviews, the decision criteria for wetland alteration permits should include a requirement that the proposed activity meet the substantive standards of the Act 'when considered in conjunction with past, present, and future activities, including activities not subject to the control of the permit-granting authority.' The Act should specify that such consideration shall include 'a description of past, present, and reasonably anticipated future development activities producing related or cumulative impacts, a summary of the expected environmental effects produced by these activities, a description of any additional information necessary to assess the environmental effects, and a specification of options available to avoid any significant cumulative effects.'

B. Site Location of Development Act

Similarly, the site location law should be amended to include an express legislative purpose to prevent adverse cumulative effects on resources such as wildlife habitat, undeveloped shoreline, scenic quality, and public recreational areas. As recommended above for the Alteration of Coastal Wetlands Act, the decision criteria for site location permits should include a requirement that the proposed activity meet the substantive standards of the Act 'when considered in conjunction with past, present, and future activities, including activities not subject to the control of the permit-granting authority.' The site location law should specify that such consideration shall include 'a description of past, present, and reasonably anticipated future development activities producing related or cumulative impacts, a summary of the expected environmental effects produced by these activities, a description of any additional information necessary to assess the environmental effects, and a specification of options ***388** available to avoid any significant cumulative effects.' Special area planning should also be required for particularly sensitive or unique coastal areas, again, to provide a basis for assessing the cumulative effects of land development activities seeking site location permits.

The Legislature should amend the definition of 'development' under the site location law to include all land development activities that are likely to contribute to the cumulative loss of coastal resources. To meet this objective it may be necessary to require site location permits for all structures or land clearing activities above a minimum size but smaller than the present threshold sizes of twenty acres for subdivisions and 60,000 square feet for structures.

C. Local Land Use Laws

The Legislature should give particular attention to revising the local land use control laws because municipal governments are responsible for the vast majority of land use decisions affecting coastal areas. To improve these laws the Legislature should amend them to include four major elements: first, a statement of specific land management goals and legislative policies toward particular land uses and coastal resources; second, specific requirements to consider the cumulative effects of individual land developments; third, an explicit requirement to develop and periodically to update local land management plans that are designed to achieve the substantive land use goals of the state; and fourth, a stronger oversight and technical assistance role for the DEP.

To include within the scope of review the appropriate geographic area for planning and management, the landward boundary of the area subject to the requirements of the Mandatory Shoreland Zoning Act should be extended inland to the inland boundary of each coastal municipality. The policies of the Coastal Management Policies Act should be incorporated into the Shoreland Zoning Act, with additional legislative guidance on how priorities among potentially competing land uses are to be set. To strengthen the Act's requirement for comprehensive planning as the basis for shoreland zoning and land use control, the Legislature should direct the DEP to promulgate guidelines for local coastal area planning as well as model zoning and

site review ordinances. The Legislature should make it clear under the Act that the local coastal plan is to be the basis for land use regulatory decisions made by the municipality and by the DEP under the Alteration of Coastal Wetlands Act and Site Location of Development Act, in addition to any special area plans prepared by state agencies under these laws. The DEP should be directed to incorporate into these guidelines and model ordinances a cumulative impact assessment process as well as land use controls that are specifically designed to address the cumulative effects of ***389** development and the allocation of development rights. These measures could include facilities impact analysis requirements, open space preservation plans, and transfer of development rights programs. The cumulative impact assessment process should incorporate the steps outlined in the recommendations for the wetlands and site location laws. The local land management plans required under the Act should be subject to state approval to ensure consistency with the substantive land use policies of the Mandatory Shoreland Zoning Act.

If these recommendations are followed, the resulting legal framework for coastal land management decisions will provide policies and plans for resource use that can serve as the basis for individual resource allocation decisions by local and state agencies. Land use decisions will still be made on a case-by-case basis, in response to the initiatives of landowners and developers, but the decisionmakers will be capable of looking to the future and judging how the proposed land uses and the development trends they represent will affect important resources and community characteristics. Communities, and not outside forces, will again be able to control their destinies.

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[FN1]. SOUTHERN MAINE REGIONAL PLANNING COMM'N, THE CUMULATIVE IMPACTS OF DEVELOPMENT IN SOUTHERN MAINE: ASSESSMENT OF MUNICIPAL CAPABILITY TO MANAGE GROWTH (1986). The capacity of many communities in Maine to control growth and protect coastal resources and access to the water is limited, yet local governments are facing an explosion in development proposals. The year-round population of the Town of York, for example, increased by 83% from 1970 to 1980. In 1985 alone, the number of building permit applications increased 100%. In the first two months of 1986, the Town of Wells received applications for an additional 900 units of residential development. Id. For a report on the failure of regulations to control adequately the tremendous development pressure in York, see Turkel, York's Doomed Wetlands, Maine Sunday Telegram, June 14, 1987, at 1.

[FN2]. See generally Clark & Zinn, Cumulative Effects in Environmental Assessment, 4 COASTAL ZONE '78, at 2481 (1978) (environmental impact assessment systems should include secondary and cumulative effects); Dickert & Tuttle, Cumulative Impact Assessment in Environmental Planning: A Coastal Wetlands Watershed Example, 5 ENVTL. IMPACT ASSESSMENT REV. 37 (1985) (theoretical, analytical, and institutional difficulties have impeded assessments of cumulative environmental impacts).

[FN3]. Discussion of federal agency programs is beyond the scope of this Article. Consideration of cumulative effects is

required principally under the National Environmental Policy Act (NEPA). See infra note 4. See generally Hapke, Thomas v. Peterson: The Ninth Circuit Breathes New Life into CEQ's Cumulative and Connected Actions Regulations, 15 ENVT'L L. REP. 10289 (1985). See also Fritiofson v. Alexander, 772 F.2d 1225 (5th Cir. 1985) (Army Corps' cumulative impact study under NEPA was inadequate). An important federal regulatory program with a cumulative effects standard is in the Army Corps of Engineers' wetland regulations, 33 C.F.R. 320.4(b)(3) (1986), enacted pursuant to the Federal Clean Water Act, 33 U.S.C. § 1344 (1982).

[FN4]. The federal definition of 'cumulative impact' may be found in the regulations promulgated pursuant to the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321 (1982). The regulations define cumulative impact as the 'impact on the environment which result[s] from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions . . .. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.' 40 C.F.R. § 1508.7 (1986). Florida and California have also adopted definitions of cumulative impact. See infra notes 175-274 and accompanying text. California's definition is explicit and therefore particularly instructive. See infra text accompanying note 220.

The concept of cumulative effects embodies a number of related but different kinds of environmental impacts, each of which may be important to a regulatory decision. Ankersen, Cumulative Impacts in Florida Environmental Decisionmaking: Finding the Straw That Breaks the Camel's Back (And Equitably Distributing the Others), FLA. BAR J., Mar. 1986, at 21, 22-23 [hereinafter Ankersen]. See also NEW YORK DEP'T OF ENVIRONMENTAL CONSERVATION, CUMULATIVE IMPACTS AND SEQR (Working Draft, Oct. 4, 1982) [hereinafter SEQR]. In developing a workable definition of cumulative effects, one must distinguish among several kinds of effects: direct, indirect, secondary, additive, and synergistic. Direct effects are the most easily identified as they are the immediate physical consequences of an action. Indirect effects are the results of these direct alterations of the environment. The dredging of a harbor, for example, causes the direct effects of suspending sediment in the water column and removing and burying benthic organisms and vegetation. The indirect effect would be the temporary reduction in phytoplankton production caused by the increased turbidity.

Secondary effects are the effects of activities that are induced or made possible by the initial project. Dredging, for example, causes such secondary effects as increased commercial and recreational boat traffic in the harbor. This in turn can lead to longer-term reductions in water quality caused by oil, sewage, and solid wastes from the vessels. New sewer lines or highways are classic examples of projects with significant secondary effects. Id. at 4. For a causeway to an island, the direct effects of the filling and causeway construction are overshadowed by the secondary effects, which include the development of the island made possible by the causeway. See Sierra Club v. Marsh, 769 F.2d 868 (1st Cir. 1985) (failure to account for the 'growth-facilitating' effects of the Sears Island causeway construction rendered inadequate the government's conclusion that the environmental effects were not significant). The term 'indirect, secondary effect' is also used to refer to the environmental consequences of activities or development that is induced or facilitated by the first project. A permit to fill a portion of a wetland may have minimal direct effects in terms of lost wetland vegetation. If the fill is used to support a dwelling and a septic system, though, the reduction in water quality caused by an inadequate septic system is an indirect, secondary effect of considerable concern.

The concept of additive effects is also important to an understanding of cumulative impacts. Additive effects are the results of the immediate project in conjunction with past and likely future projects. Ankersen, supra, at 22. A sophisticated definition of cumulative effects would also include the synergistic effects of several projects. This term includes the multiplier effect on an ecosystem caused by the interaction of two or more individual impacts. SEQR, supra, at 5. For example, a reduction in the fresh-water supply to a wetland caused by the diversion or blockage of a stream may have only a modest effect on the system. If the wetland is also receiving an increased load of pollutants from development along its margins, the combined effect of the diversion and the waste discharge may result in a significant disruption of an important wetland function.

To be useful, any definition of cumulative effects should include all of these effects. Moreover, the assessment of cumulative

effects of a proposed project should consider the spatial, temporal, and ecological extension of these effects throughout and beyond the duration of the project; the incremental effects of other past and future projects within an ecological unit; and the manner in which these effects interact to balance, reinforce, or induce additional effects. DAMES & MOORE, INC., METHODOLOGY FOR THE ANALYSIS OF CUMULATIVE IMPACTS OF PERMIT ACTIVITIES REGULATED BY THE U.S. ARMY CORPS OF ENGINEERS 1-4 (1981). See infra text accompanying notes 210-12.

[FN5]. See infra text accompanying notes 24-127.

[FN6]. MAINE STATE PLANNING OFFICE, DRAFT PROPOSAL FOR STRENGTHENING LAND USE MANAGEMENT AND DECISION-MAKING IN MAINE (Nov. 20, 1986). Development pressure has already reached critical levels in several coastal communities, leading them to adopt development moratoria while they consider new planning and zoning techniques to prevent services from being overburdened and to preserve the town's character. Id.

[FN7]. P.L. 1985, ch. 794 (codified at ME. REV. STAT. ANN. tit. 38, §§ 1801-1803 (Supp. 1986-1987)).

[FN8]. The management of cumulative impacts raises several fundamental policy issues. First, there is the factual problem of forecasting future development that is likely to affect the same resource as the proposed project. To assume that all similarly situated landowners will eventually seek permission to alter their property may not be reasonable. Yet, once a precedent has been established through the approval of certain developments, future projects of the same sort may be difficult to deny. It may be possible to project future development demand on the basis of growth trends in a given area, but this requires data that will not be available for areas only recently subject to development pressure.

In addition, it is difficult to determine the threshold beyond which development should not be permitted to degrade or alter a particular resource. Because of the lack of data and analytical methods or models, scientists disagree on whether threshold levels or 'assimilative capacities' can be established for resource systems. In response to the threshold problem, planners have attempted to apply the 'carrying capacity' approach derived from engineering studies to environmental and social systems. See generally D. SCHNEIDER, D. GODSCHALK & N. AXLER, THE CARRYING CAPACITY CONCEPT AS A PLANNING TOOL (1978). Carrying capacity analysis focuses on the effect of growth on both the natural and built environments to identify critical thresholds in terms of density or population size. See, e.g., Hegenbarth, A Carrying Capacity Study of Hatteras Island, 2 COASTAL ZONE '85, at 1848 (1985).

If the alteration or consumption of a natural resource is going to be permitted, but only on a limited basis, the equitable distribution of the right to development becomes an important issue. For example, if one landowner is allowed to build a house on the edge of a salt marsh, can another owner with similar property be fairly denied the same opportunity? When decisions to permit development are made on a case-by-case basis in response to the initiatives of landowners and developers, equitable allocation becomes difficult because future development plans are not ordinarily represented in the permit decision process.

Managing cumulative impacts also raises a fundamental institutional question: what level of government should have primary responsibility for the problem of incremental development? Land use decisions are traditionally a local concern; yet protection of resources that extend beyond municipal boundaries necessitate the coordination of government actions, and no single local government has a broad enough geographic scope of review to bring under consideration the numerous development projects within the region that can affect conditions and resources within the community. See Cowart, Vermont's Act 250 after 15 Years: Can the Permit System Address Cumulative Impacts?, 6 ENVTL. IMPACT ASSESSMENT REV. 135, 140 (1986).

[FN9]. See infra text accompanying notes 24-25.

[FN10]. Act to Enhance the Sound Use and Management of Maine's Coastal Resources, P.L. 1985, ch. 794, § 11 (Coastal Management Policies Act) (codified at ME. REV. STAT. ANN. tit. 38, §§ 1801-1803 (Supp. 1986-1987)).

[FN11]. ME. REV. STAT. ANN. tit. 38, § 1801 (Supp. 1986-1987).

[FN12]. LAND USE CONSULTANTS, INC., CUMULATIVE IMPACT OF INCREMENTAL DEVELOPMENT ON THE MAINE COAST, at VI-1 to VI-15 (working paper prepared for the Maine Department of Environmental Protection and Committee on Coastal Development and Conservation, 1977).

[FN13]. Id. at VI-2 to VI-4.

[FN14]. GOVERNOR'S ADVISORY COMM. ON COASTAL DEV. AND CONSERVATION, ME. STATE PLANNING OFFICE, THE MAINE COAST: ISSUES CONSIDERED (1978) [hereinafter GOVERNOR'S COMM.].

[FN15]. ME. REV. STAT. ANN. tit. 30, § 4962 (1978 & Supp. 1986-1987).

[FN16]. ME. REV. STAT. ANN. tit. 38, §§ 481-490 (1978 & Supp. 1986- 1987).

[FN17]. Id. §§ 435-447.

[FN18]. GOVERNOR'S COMM., supra note 14, at 14.

[FN19]. In response to the Committee's recommendations, however, the DEP incorporated references to and a definition of cumulative impacts into regulations promulgated in 1979. Me. Dep't Envtl. Protection Regs. 342(3), 372(1) (Aug. 8, 1979), reprinted in CODE OF MAINE RULES 203021, 203261 (1986). 'Cumulative impacts' are defined as 'those impacts that are realized when the incremental effects of individual developments add up to the point where certain thresholds of tolerance are exceeded.' Id. at 372(1), reprinted in CODE OF MAINE RULES 203261. The DEP has not sytematically incorporated a cumulative impact review process into its permit decisions under the Site Location of Development Act and the Alteration of Coastal Wetlands Act. Failure to do so may have stemmed from uncertainties regarding the Department's legal authority to consider cumulative effects, absent an explicit statutory requirement to do so. It is more likely, however, that agency staff have been stymied by the inherent difficulties in managing the cumulative effects of development under regulatory laws of limited jurisdictional scope with no relationship to land use planning efforts.

[FN20]. P.L. 1985, ch. 794 (codified in scattered sections of ME. REV. STAT. ANN. tits. 5, 12, 30, 37-B, and 38).

[FN21]. ME. REV. STAT. ANN. tit. 38, § 1801 (Supp. 1986-1987).

[FN22]. In an effort to protect these interests the Maine Legislature amended the Subdivision Control Act, ME. REV. STAT. ANN. tit. 30, § 4956 (1978 & Supp. 1986-1987), the Comprehensive Planning Act, id. § 4961, and the Mandatory Shoreland Zoning Act, ME. REV. STAT. ANN. tit. 38, §§ 435-447 (1978 & Supp. 1986-1987), to authorize local adoption of land use controls promoting public access to the shoreline and giving preference to water-dependent uses. P.L. 1985, ch. 794 §§ 2-3, 6-10. At the same time, the Legislature enacted a new chapter of statutes known as the Coastal Management Policies Act. Id. § 11 (codified at ME. REV. STAT. ANN. tit. 38, §§ 1801-1803 (Supp. 1986-1987)).

[FN23]. ME. REV. STAT. ANN. tit. 38, § 1801(3) (Supp. 1986-1987). The statute defines 'coastal resources' as 'the coastal waters of the State and adjacent shorelands, their natural resources and related marine and wildlife habitat that together form an integrated terrestrial, estuarine and marine ecosystem.' Id. § 1802(3).

Under the Act, the Legislature 'directs that state and local agencies . . . shall conduct their activities affecting the coastal area consistent with the [stated] policies . . ..' Because the Act contains no explicit implementation mechanism, it is unclear whether the Legislature considered it necessary for agencies and municipalities to promulgate new regulations and standards to reflect these policies. To address this concern, Governor Brennan issued an executive order 'Providing for the Implementation of the State's Coastal Management Policies.' Me. Exec. Order No. 3 FY 86/87 , (Sept. 16, 1986). The order directs the Coastal Advisory Committee, a standing committee of the Maine Land and Water Resources Council, to prepare and oversee an implementation strategy. This charge includes preparing guidelines for state agencies and reviewing the implementation reports the agencies are required to prepare. The agencies affected by the order are the Departments of Conservation, Environmental Protection, Inland Fisheries and Wildlife, Marine Resources, and Transportation; the State Development Office; the State Planning Office; the Finance Authority of Maine; and the Maine State Housing Authority. Id.

[FN24]. Maine's coastal program has been approved by the Secretary of Commerce pursuant to the Coastal Zone Management Act of 1972, 16 U.S.C. §§ 1451-1464 (1982). DEP'T OF COMMERCE, DRAFT ENVIRONMENTAL IMPACT STATEMENT ON THE MAINE COASTAL PROGRAM (1978). The Act establishes a federal grant program for state coastal management efforts that meet approval standards of the Secretary of Commerce. The Act requires:
Prior to granting approval of the management program, the Secretary [of Commerce] shall find that the state, acting through its chosen agency or agencies, including local governments, areawide agencies . . ., regional agencies, or interstate agencies, has authority for the management of the coastal zone, in accordance with the management program. Such authority shall include power: (1) To administer land and water use regulations, control development in order to ensure compliance with the management program, and to resolve conflicts among competing uses . . ..
16 U.S.C. § 1455(d) (1982). The federal approval regulations require state coastal programs to address the cumulative effects of development:
In identifying [land and water] uses [that will be subject to the terms of the management program] and their appropriate management, States should analyze the quality, location, distribution and demand for the natural and man-made resources of their coastal zone. (2) States should consider potential individual and cumulative impacts of uses on coastal waters including . . . (i) [r]esidential and commercial developments such as subdivisions, highrise apartments or hotels, trailer parks and second-home developments, and shopping centers; (ii) [i]ndustrial developments . . . (iii) [r]ecreational facilities such as beaches, amusement parks, marinas and other boating facilities; (iv) [p]ublic facilities and public works . . . and (v) [t]ransportation facilities . . ..
Coastal Zone Management Program Development and Approval Regulations, 15 C.F.R. § 923.11(c) (1987) (emphasis added).

[FN25]. These statutes generally are applied responsively despite the legislative finding in Maine's principal land development law that 'many developments because of their size and nature are capable of causing irreparable damage to the people and the environment . . . [and] that the location of such developments is too important to be left only to the determination of the owners of such developments . . ..' ME. REV. STAT. ANN. tit. 38, § 481 (Supp. 1986-1987).
In fact, until the 1986 Act, the only state environmental law with explicit reference to and a legislative policy concerning cumulative effects was the Great Ponds Act. ME. REV. STAT. ANN. tit. 38, §§ 386-396 (1978). The Act states 'that the cumulative effect and impact of frequent minor alterations and occasional major alterations requires evaluation and scrutiny consistent with that potential impact.' Id. § 386. Policy guidelines accompanying regulations implementing the Great Ponds Act discuss the importance of relatively minor alterations to a lake system. Applicants are given the following warning:
Applicants should . . . be aware of the necessity for the Board to consider the cumulative effect of many alterations to a pond or its shoreline. One individual alteration may have little effect, but many small alterations could result in considerable total harm to the pond. Therefore, the Board may deny a relatively small application, which by itself would have little effect,

because of the cumulative effect on a pond.
ME. DEP'T ENVTL. PROTECTION, PROTECTING YOUR LAKE 15 (1983). Specific criteria for particular uses of lakes underscore this policy. For example, provisions concerning the placement of boat ramps state that 'it is not necessary or desirable for each boat owner to have an individual launching ramp.' Id. at 18. This guideline supported the decision of the Land Use Regulation Commission, which administers the Great Ponds Act in the unorganized townships, when it denied a request for a boat ramp on Moosehead Lake. Me. Land Use Regulation Comm'n, Denial of Great Ponds Permit GP 240 (Jan. 2, 1986).

[FN26]. ME. REV. STAT. ANN. tit. 38, §§ 435-447 (Supp. 1986-1987) (codified under the heading, Mandatory Zoning and Subdivision Control).

[FN27]. Id. §§ 481-490 (1978 & Supp. 1986-1987).

[FN28]. Id. §§ 471-478.

[FN29]. ME. REV. STAT. ANN. tit. 30, § 4962 (1978 & Supp. 1986-1987).

[FN30]. Id. § 4961.

[FN31]. Id. § 4956.

[FN32]. ME. REV. STAT. ANN. tit. 38, §§ 471-478 (1978 & Supp. 1986- 1987). The Alteration of Coastal Wetlands Act originated in an earlier statute requiring the issuance of permits by municipal officers and the State Wetlands Control Board for any development in a wetland area. P.L. 1967, ch. 348. See generally State v. Johnson, 265 A.2d 711, 712-13 (Me. 1970) (discussing original statute). Amendments in 1975 gave primary authority for issuing permits to the state Board of Environmental Protection (BEP). P.L. 1975, ch. 595, § 3 (codified at ME. REV. STAT. ANN. tit. 38, § 473 (1978)).

[FN33]. 33 U.S.C. § 1344 (1982).

[FN34]. Id. § 403.

[FN35]. A municipality may be delegated permit-issuing authority if, inter alia, it has a planning board and an approved zoning ordinance. ME. REV. STAT. ANN. tit. 38, § 473 (1978). The BEP has 30 days in which it may approve, deny, or modify a permit issued by a municipality. Id. § 474 (Supp. 1986-1987).

[FN36]. Id. § 471. The Act defines 'coastal wetlands' as
all tidal and subtidal lands including all areas below any identifiable debris line left by tidal action, all areas with vegetation present that is tolerant of salt water and occurs primarily in a salt water habitat, and any swamp, marsh, bog, beach, flat or other contiguous lowland which is subject to tidal action or normal storm flowage at any time excepting periods of maximum storm activity.
Id. § 472(2). The Act defines 'coastal sand dunes' as 'sand deposits within a marine beach system above high tide including, but not limited to, beach berms, frontal dune ridges, back dune areas and other sand areas deposited by wave or wind action.' Id. § 472(1). Minor repairs of existing structures and normal maintenance are exempted from review, and the BEP may exempt other activities by regulation. Id. § 478 (1978). Dredging, filling, and construction of permanent structures on intertidal lands owned by the state or on submerged lands (below the mean low water mark) must also have a lease or easement from the Bureau of Public Lands under the Submerged Lands Act. ME. REV. STAT. ANN. tit. 12, § 558-A (Supp.

1986-1987).

[FN37]. See generally ME. DEP'T ENVTL. PROTECTION, PROTECTING YOUR COASTAL WETLANDS 5 (1983).

[FN38]. ME. REV. STAT. ANN. tit. 38, § 474(1) (Supp. 1986-1987).

[FN39]. Id. § 474(2). If the proposed activity affects both wetlands and sand dunes, a single permit is granted. Id. § 474(3).

[FN40]. Me. Dep't Envtl. Protection Reg. 342(3) (Nov. 1, 1979), reprinted in CODE OF MAINE RULES 203021, 203022 (1986).

[FN41]. Id. at 372(1), reprinted in CODE OF MAINE RULES 203261.

[FN42]. Id. A preamble to the Site Location Regulations explains that the notes are to serve as examples, explanatory material, or suggested guidelines. 'These NOTEs have not been formally adopted by the Board. As a result, they are non-regulatory in nature and are not judicially enforceable. The NOTEs are intended to assist applicants and the Department staff and in interpreting and implementing these regulations.' ME. DEP'T ENVTL. PROTECTION, SITE LOCATION OF DEVELOPMENT 13 (1983).

[FN43]. See supra note 8. It could be argued, however, that a prediction that the threshold would be exceeded is sufficient to trigger denial of the project under this definition.

[FN44]. The sand dune regulations under the Alteration of Coastal Wetlands Act contain criteria potentially addressing the cumulative effects of development. Me. Dep't Envtl. Protection Reg. 355 (as amended on Oct. 23, 1984), reprinted in CODE OF MAINE RULES 203111, 203112-19 (1986). Designed to protect Maine's 36 miles of sand beaches, these provisions require that construction on dune areas receive a sand dune permit from the BEP. The sand dune regulations provide: 'In areas where substantial portions of the dune system remain unaltered, special attention will be paid to the cumulative impacts of activities on the dune system.' Id. at 355(2)(A)(1), reprinted in CODE OF MAINE RULES 203112. Nonetheless, cumulative effects are important considerations in both developed and undeveloped areas. In an undeveloped area, the precedent-setting nature of the first project is a critical consideration. In a developed area, damage to the beach system can still be kept to a minimum if new projects are considered in light of their additive effects upon, for example, the movement of sand or the hazard of flooding. The sand dune regulations also specify a long-term, temporal framework for impact assessment by stating that '[i]mpacts which may reasonably be expected to occur during the following 100 years will be considered.' Id. In this sense, the sand dune rules give explicit guidance for the consideration of future effects.

[FN45]. See supra note 36.

[FN46]. See Me. Dep't Envtl. Protection Reg. 340(1)(L) (Nov. 1, 1979), reprinted in CODE OF MAINE RULES 203001 to -02 (1986).

[FN47]. See ME. REV. STAT. ANN. tit. 38, § 471 (Supp. 1986-1987).

[FN48]. See MAINE STATE PLANNING OFFICE, THE CUMULATIVE IMPACTS OF DEVELOPMENT IN SOUTHERN MAINE: IMPORTANT WILDLIFE HABITATS (1986).

[FN49]. See OFFICE OF TECHNOLOGY ASSESSMENT, U.S. CONGRESS, WETLANDS: THEIR USE AND REGULATION 37 (1984); R. SMARDEN, THE FUTURE OF WETLANDS: ASSESSING VISUAL-CULTURAL

VALUES 5 (1983).

[FN50]. The Ville Sur Mer motel/condominium project in Wells, Maine, a 100- unit project built adjacent to the Rachel Carson National Wildlife Refuge, was virtually completed when state officials levied fines under the Coastal Wetlands Act in response to soil eroding into the marsh. The project seems to have evaded preconstruction review by the state because of the project's location outside the marsh and because, at least initially, it was too small for review under the Site Location of Development Act. Turkel, Building Boom Overwhelms Controls on Development, Maine Sunday Telegram, Aug. 24, 1986, at 16-A, col. 4. Four large residential subdivisions have been constructed adjacent to Scarborough Marsh and two more are in the planning stage. None of these projects has involved filling or dredging the wetland, but their combined effect has been to increase run-off into the marsh and to restrict the natural flow of water. Both effects have serious implications for the marsh's ecosystem. Interview with Dr. Joseph T. Kelley, Marine Geologist, Maine Geological Survey, by Josie Quintrell, Marine Law Institute, in Augusta, Me. (Jan. 8, 1986).

[FN51]. ME. REV. STAT. ANN. tit. 38, §§ 481-490 (1978 & Supp. 1986- 1987).

[FN52]. See F. BOSSELMAN & D. CALLIES, THE QUIET REVOLUTION IN LAND USE CONTROL 187-99 (1972). Some observers at the time the law was enacted viewed it more as a stopgap than a permanent solution to Maine's land development problems:
The major question for the future is whether the state can expand the Site Location Law into a more comprehensive land regulatory system that leaves the local issues to local governments but deals with major development proposals in the framework of a broader conception of state planning than the current law contains.
Id. at 199.

[FN53]. Id. at 187. During the early months of the 1970 special legislative session, four deepwater port and refinery proposals for Maine coastal areas were aired. See id. (citing MacDonald, Oil and the Environment: The View from Maine, FORTUNE, April 1971, at 84).

[FN54]. For a discussion of other legislation passed at the time, see Note, A Proposal to Protect Maine from the Oilbergs of the 70's, 22 MAINE L. REV. 481 (1970).
The original site location bill introduced in the 1970 legislative session included commercial, industrial, and residential development within the purview of the state review process. By the time the bill emerged from committee the term 'residential' had been deleted. See In re Spring Valley Dev. by Lakesites, Inc., 300 A.2d 736, 742-43 (Me. 1973) (Legislature intended to include large residential subdivisions under the site location law). Despite the exclusion of the term 'residential development' from the bill, the agency charged with its implementation, the Environmental Improvement Commission (EIC), defined 'commercial' development to include residential subdivisions of 20 acres or more or requiring a pollution discharge permit. See F. BOSSELMAN & D. CALLIES, supra note 52, at 189. The Law Court upheld this interpretation, noting that in the subsequent legislative session the Legislature, first, rejected attempts to exclude certain residential subdivisions from the Act and, then, added the specific word 'subdivisions.' In re Spring Valley Dev. by Lakesites, Inc., 300 A.2d 736, 745-46 (Me. 1973). See P.L. 1971, Spec. Sess. 1972, ch. 613, § 2. The Act now expressly includes 'subdivisions' within the definition of 'development which may substantially affect the environment.' ME. REV. STAT. ANN. tit. 38, § 482(2) (Supp. 1986-1987).

[FN55]. The Act defines 'subdivision' as 'the division of a parcel of land into five or more lots to be offered for sale or lease to the general public during any five-year period if such lots make up an aggregate land area of more than 20 acres . . ..' ME. REV. STAT. ANN. tit. 38, § 482(5) (Supp. 1986- 1987). The definition includes a number of exceptions such as gifts, sales to an abutting owner or relative of the developer, divisions in which the lots exceed 10 acres in size, or in which the lots are

of certain dimensions and the municipality has adopted subdivision review regulations under title 30, section 4956. Id. § 482(5)(A)-(D).

[FN56]. Id. § 482(2). The Act includes within the definition of 'structure' parking lots, roads, paved areas, wharves, or areas to be stripped or graded and not revegetated if they alone or in addition to any buildings occupy a ground area in excess of three acres. Id. § 482(6) (1978).

[FN57]. Id. § 484 (1978 & Supp. 1986-1987). The burden is on the developer to prove that each standard has been met and that 'the public's health, safety and general welfare will be adquately protected.' Id. § 484(5) (Supp. 1986- 1987). Minor non-compliance with the standards may, however, be accepted. See In re Belgrade Shores, Inc., 371 A.2d 413, 416 (Me. 1977) ('That the Board [of Environmental Protection] found non-compliance with two of the four criteria listed in § 484 does not . . . require disapproval. Such a result would be neither practical nor flexible where the non-compliance is minor, easily corrected, or both.').

[FN58]. ME. REV. STAT. ANN. tit. 38, § 484(3) (1978 & Supp. 1986-1987). The Act defines 'natural environment of a locality' as including 'the character, quality and uses of land, air and waters in the development site or the area likely to be affected by such development, and the degree to which such land, air and waters are free from nonnaturally occurring contamination.' Id. § 482(3) (Supp. 1986-1987). See also Valente v. Board of Envtl. Protection, 461 A.2d 716 (Me. 1983).

[FN59]. Me. Dep't Envtl. Protection Reg. 372(1) (Nov. 1, 1979), reprinted in CODE OF MAINE RULES 203261 (1986). See supra text accompanying notes 41-42.

[FN60]. Me. Dep't Envtl. Protection Reg. 375(1) (Nov. 1, 1979), reprinted in CODE OF MAINE RULES 203311 (1986). These factors are air quality, climate, natural drainage ways, stormwater runoff, erosion and sedimentation control, surface water quality, ground water quality, ground water quantity, natural buffer strips, noise, historic preservation, unusual natural areas, solar access, scenic character, and wildlife and fisheries. Id. at 375(2)-(15), reprinted in CODE OF MAINE RULES 203312-26.

[FN61]. For example, the regulations provide guidance on the use of buffer strips or architectural screens to help mitigate the visual impact of the proposed project or to provide wildlife with travel lanes between areas of available habitat: 'The Board . . . recognizes that buffer strips can serve as visual screens which can serve to lessen the visual impact of incompatible or undesirable land uses. The width and nature of buffer strips, if required, shall be determined by the Board on a case-by-case basis.' Id. at 375(9)(A), reprinted in CODE OF MAINE RULES 203319. 'A development which is not in keeping with the surrounding scenic character will be located, designed and landscaped to minimize its visual impact to the fullest extent possible.' Id. at 375(14)(B)(2), reprinted in CODE OF MAINE RULES 203324. The applicant must submit '[p]lans to mitigate adverse effects on wildlife and fisheries through design considerations, pollution-abatement practices, and the timing of construction activities.' Id. at 375(15)(C)(2), reprinted in CODE OF MAINE RULES 203326.

[FN62]. Id. at 375(1)(C)(2), reprinted in CODE OF MAINE RULES 203311.

[FN63]. Id. at 375(6)(B)(1), reprinted in CODE OF MAINE RULES 203316.

[FN64]. Id. at 375(8)(C)(2), reprinted in CODE OF MAINE RULES 203319.

[FN65]. Id. at 372(10), reprinted in CODE OF MAINE RULES 203263. In a note, the Department states that a proper analysis of the potential primary, secondary, and cumulative effects can be made only when all phases of a proposed

development are considered. Mitigation plans will have to be based upon the entire extent of the proposed development to ensure their effectiveness. Id.

[FN66]. The Legislature finds that the economic and social well-being of the citizens of the State of Maine depend upon the location of . . . commercial and industrial developments with respect to the natural environment of the State; that many developments because of their size and nature are capable of causing irreparable damage to the people and the environment on the development sites and in their surroundings; that the location of such developments is too important to be left only to the determination of the owners of such developments; and that discretion must be vested in state authority to regulate the location of developments which may substantially affect [the] environment.
ME. REV. STAT. ANN. tit. 38, § 481 (Supp. 1986-1987).

[FN67]. See supra text accompanying notes 55-56.

[FN68]. See, e.g., Builders Avoid State Review, Maine Sunday Telegram, Aug. 24, 1986, at 17-A, col. 6. The Department of Environmental Protection submitted proposed amendments to the site location law to the governor's office in 1985 that would have brought under review any development of greater than 15,000 square feet or greater than 40 feet in height proposed for construction or conversion in land within 250 feet of the mean high-water mark. See A Coastal Loophole, Maine Times, Dec. 13, 1985, at 13A, col. 3.

[FN69]. ME. REV. STAT. ANN. tit. 38, § 484 (1978 & Supp. 1986-1987). See supra note 57.

[FN70]. See supra notes 62-64.

[FN71]. The use of the qualifying term 'unreasonable' throughout the regulations compounds this limitation. This term is not found in the site location law but has been adopted by the DEP in its regulations under the Act. Compare, e.g., ME. REV. STAT. ANN. tit. 38, § 484(3) ('[T]he development will not adversely affect existing uses, scenic character, or natural resources . . ..') with Me. Dep't Envtl. Protection Reg. 375(14)(B) (Nov. 1, 1979), reprinted in CODE OF MAINE RULES 203323 (1986) ('In determining whether the proposed development will have an unreasonable adverse effect on the scenic character of the surrounding area . . ..') (emphasis added). The Law Court upheld the use of the 'unreasonable' standard in In re Spring Valley Dev. by Lakesites, Inc. 300 A.2d 736, 751-52 (Me. 1973). The court found:
The requirement that the Commission must be satisfied that there will be no adverse effect upon the natural environment is the very substance of the Legislature's efforts to reduce despoilation [sic] of the environment to a minimum. While most such developments may be expected to 'affect' the environment adversely to the extent that they add to the demands already made upon it, it is the unreasonable effect upon existing uses, scenic character and natural resources which the Legislature seeks to avoid by empowering the Commission to measure the nature and extent of the proposed use against the environment's capacity to tolerate the use.
. . ..
. . . The Legislature has declared the public interest in preserving the environment from anything more than minimal destruction . . . and has given the Commission adequate standards under which to carry out the legislative purpose.
Id. at 751. The DEP has failed, however, to incorporate the court's use of the term 'unreasonable' as meaning 'anything more than minimal destruction.' Instead, the regulations apply the 'unreasonable' standard so that the effects will not be found unreasonable as long as efforts are made to mitigate them. See, e.g., Me. Dep't Envtl. Protection Reg. 372(14)(B)(2) (Nov. 1, 1979), reprinted in CODE OF MAINE RULES 203261 (1986) ('A development which is not in keeping with the surrounding scenic character will be located, designed and landscaped to minimize its visual impact to the fullest extent possible.'). Under the regulations there is no basis for comparing the negative effects of a development against an objective set of land

management policies and goals. Consequently, there is no real standard for determining whether the effects are 'unreasonable.'

[FN72]. It is sometimes difficult to determine the critical factors that lead to the Board's decision to deny a permit application. The Department staff prepares a draft findings of fact and Board order which the Board decides to adopt or reject. The findings and order contain specific facts, such as the project's size, location, site description, and other relevant environmental information. It is upon these findings and upon the reviews of state agencies and interested parties that the Board will conclude whether the project will be 'unreasonable' in light of the statutory criteria. Unless the Board's order specifically mentions the issue of cumulative effects, one can only infer that they were addressed from the existence of comments in the record which refer to them.
A recent application, for example, proposed to place 1,200 cubic yards of fill in the Scarborough Marsh for construction of a single-family home. The application specifically mentioned the cumulative effects of shading 1/20 th of an acre of salt marsh. The portion that was to be shaded by the new dwelling had been maintained as a lawn for 30 years. The record included statements by two biologists that cuttings from the laws had been a source of nutrients to the marsh. The Board's findings of fact and order found 'substantial filling of other portions of this marsh has occurred over the past 40 or 50 years during the development of the Higgins Beach area' and quoted the reference to 'cumulative impacts' in the DEP regulations. The Board, however, apparently denied the permit on the grounds of its direct effects, because it found that the elimination of 2,000 square feet of salt-tolerant vegetation would 'unreasonably harm wildlife or . . . fisheries in that the proposed house will decrease the value of the wetland as a producer of food for marine organisms . . ..' Me. Dep't Envtl. Protection, Board Order No. L-010765-03- A-N (Sept. 13, 1985).
In another action, the Board voted to table an application for a two-phased, mixed residential and commercial development on Great Diamond Island in Casco Bay so that consideration could be given to only the first phase, stating that '[s]pecific attention is to be given to reducing the volume of treated sewage to be licensed, the handling of commercial waste, the cumulative impact of the project, parking and vehicle traffic on the mainland and the island and ferry service.' Me. Dep't Envtl. Protection, Board Meeting (Sept. 24, 1986). See also Cummings, Island Development Rejected, Portland Press Herald, Sept. 24, 1986, at 13.

[FN73]. The beach has been designated under the federal Coastal Barrier Resources Act, 16 U.S.C. §§ 3501-3510 (1983), for special protection because of its importance as a storm buffer for upland areas and because, as an unstable geological formation, it is not safe for construction of permanent structures.

[FN74]. Me. Dep't Envtl. Protection, Board Order No. 03-8718-31110 (Aug. 24, 1983) (Comments of Maine Audubon Society, app. B (Register of Maine Critical Areas) [hereinafter Audubon Comments]).

[FN75]. Id. (Audubon Comments at 2, 4).

[FN76]. Id. (citing Me. Dep't Envtl. Protection, Board Orders No. 03- 8047-31110 and 03-7970-31110 (Nov. 23, 1982)).

[FN77]. Id.

[FN78]. The Board did require that the houses be set back 300 feet from the high water mark. Id.

[FN79]. Me. Dep't Envtl. Protection, Board Order No. 03-8718-31110 (Aug. 24, 1983).

[FN80]. Audubon Comments, supra note 74, at 3. The Department of Inland Fisheries and Wildlife also commented on the cumulative effects stemming from the project in disturbance of the Least Tern and Piping Plover nesting colonies:

The proposal per se probably will not impact either species greatly. It is the associated human activity which accompanies any such development which concerns us. Obviously, the home is being built with the enjoyment of the beach environment in mind. Accessing the beach across the lot will place users directly into the colony during . . . nesting season. Birds will continually be alarmed and repeated disturbances will probably cause nesting failure or site abandonment.
Me. Dep't Envtl. Protection, Board Order No. 03-8718-31110 (Aug. 24, 1983) (Comments of Dep't Inland Fisheries & Wildlife).

[FN81]. Id. at 3.

[FN82]. Id.

[FN83]. The record in the 1982 sand dune permit applications contained a letter from an abutting owner indicating her intent to develop her property in the near future. Audubon Comments, supra note 74, at 3. There are a total of 15 lots that could still be developed. See Dilemma: Where To Draw the Line on Beach Homes, Maine Sunday Telegram, Aug. 24, 1986.

[FN84]. See ME. REV. STAT. ANN. tit. 38, § 474(1) (Supp. 1986-1987). A proposed condominium development in the Pine Point area of Scarborough, reviewed in 1985 under both the sand dune and wetlands provisions, exemplified the technical difficulties inherent in calculating potential cumulative effects. The project involved construction on a back dune area and the filling of a one-half acre channel that under seasonal and storm-induced high tides stores up to 18,000 cubic feet of water. See Me. Dep't Envtl. Protection, Proposed Board Order No. L-010921-04-A-N, at 1 (1985). During the permit review, the Board considered whether filling the channel would cause an unreasonable flood hazard to neighboring properties. Id. at 2. The applicant provided evidence that the direct effects--the resulting rise in water level from the 18,000 cubic feet of fill--would be minimal. Id. at 1. See also Letter from Thomas Milligan, Consulting Engineer, to William LaFlamme, Me. Dep't Envtl. Protection, at 3, 6 (Oct. 9, 1985) (applicant's evidence). Addressing the potential cumulative effect of such fill, the applicant's geological consultant calculated the rise in sea level that would result if five identical projects were also built on the Scarborough Marsh. He concluded that the rise would be less than 1/16 of an inch and therefore would not be 'unreasonable.' Id. at 5.
The consulting geologist assumed that only five similar projects would be constructed and used this assumption as the basis for his calculations. Id. The cumulative damage to a wetland ecosystem is caused by a variety of human activities which result in the gradual filling of the wetland. See generally OFFICE OF TECHNOLOGY ASSESSMENT, U.S. CONGRESS, WETLANDS: THEIR USE AND REGULATION (1984). Because the coastal wetlands regulations do not provide guidelines on how to project future development and estimate its additive or synergistic effects, see Me. Dep't Envtl. Protection Reg. 340-47 (Nov. 1, 1979), reprinted in CODE OF MAINE RULES 203001-71 (1986), the applicant was free to calculate the potential cumulative effects in a manner that minimized these concerns.
Without standardized procedures for assessing the potential cumulative effects, the permit-issuing body is left without guidance on how to resolve disputes between conflicting expert opinions. In this case, the applicant's consulting geologist claimed that minimal cumulative damage would occur. The state's marine geologist, on the other hand, concluded that the cumulative effects could be significant. Letter from Joseph Kelley, Me. Geological Survey, to William LaFlamme, Me. Dep't Envtl. Protection (Oct. 4, 1985).

[FN85]. ME. REV. STAT. ANN. tit. 30, §§ 1917, 2151 (1978). A town's exercise of the state's police power is not unlimited. A municipality has the right to use those powers only as authorized by Maine's home rule law. Tisei v. Town of Ogunquit, 491 A.2d 564, 570 (Me. 1985). Under the home rule power,
[a]ny municipality may, by the adoption, amendment or repeal of ordinances or bylaws, exercise any power or function which the Legislature has power to confer upon it, which is not denied expressly or by clear implication, and exercise any

power or function granted to the municipality by the Constitution, general law, or charter.
ME. REV. STAT. ANN. tit 30, § 1917 (1978).
Because of ambiguities in section 1917 and its differences from the language of the home rule amendment to the Maine Constitution, ME. CONST., art. VIII, pt. 2, § 1, some uncertainty exists regarding the permissible scope of home rule ordinances in instances in which the Legislature has expressly granted authority over the particular subject matter. See generally Note, Home Rule and the Pre-emption Doctrine: The Relationship Between State and Local Government in Maine, 37 MAINE L. REV. 313 (1985). The case law interpreting section 1917 provides only limited guidance for determining when the Legislature has by clear implication limited the power of local governments. Analysis in each case must focus on the legislation in the area that the municipality is undertaking to regulate. If the Legislature intended to create a comprehensive and exclusive regulatory scheme, then the municipal ordinance must fail as a violation of the home rule law. See, e.g., Tisei v. Town of Ogunquit, 491 A.2d at 570; Ullis v. Inhabitants of the Town of Boothbay Harbor, 459 A.2d 153 (Me. 1983); Schwanda v. Bonney, 418 A.2d 163 (Me. 1980). See also Crosby v. Inhabitants of the Town of Oqunquit, 468 A.2d 996 (Me. 1983). These and other cases are discussed in Note, supra, at 350-54.
With respect to local land use controls, however, it is argued that local power is not limited to the somewhat narrow language and criteria of the municipal enabling laws. See infra text accompanying notes 85-127. But see Inhabitants of the Town of North Berwick v. Maineland, Inc., 393 A.2d 1350 (Me. 1978) (trial court decision that town could not define 'subdivision' more broadly than the state statute reversed as improper decision on summary judgment). The Law Court has held that the subdivision review statute, coupled with the home rule authority of section 1917, 'is sufficient to permit municipalities to implement some slow-growth limitations' provided these measure are otherwise constitutional. Begin v. Inhabitants of the Town of Sabattus, 409 A.2d 1269, 1275 (Me. 1979) (repeal of subsection 3, para. H, of subdivision review statute, requiring consideration of subdivision's impact on municipal services and supplying apparent authority for enactment of slow-growth ordinances, meant only that its consideration was no longer mandatory).
To determine whether state statutes preclude the local adoption of measures designed to prevent the adverse cumulative effects of development, one would have to determine whether the set of laws empowering state agency environmental review was intended to be a comprehensive scheme, leaving no room for concurrent local authority. Because of the limited scope of these statutes, such a determination is unlikely. See supra text accompanying notes 25-71. There is no special need for uniformity of regulation in this area, and the historical relationship of state and local authorities has always favored full exercise of local power over matters of land use control. Moreover, a more restrictive local ordinance certainly furthers rather than hinders the policies of state land use legislation. See, e.g., State v. Lewis, 406 A.2d 886 (Me. 1979). When state law directs a town to perform certain functions of government, the town does not have home rule power not to perform the function. But when state law does not prohibit a particular local action and there are no grounds for inferring exclusive state authority, the power of municipalities should be broadly construed. Note, supra, at 365.

[FN86]. ME. REV. STAT. ANN. tit. 30, §§ 4956, 4961-4966 (1978 & Supp. 1986-1987); ME. REV. STAT. ANN. tit. 38, §§ 435-447 (Supp. 1986- 1987). See generally ME. REV. STAT. ANN. tit. 30, §§ 3221-3225 (1978) (plumbing codes); id. §§ 2451-2460 (1978) (location of junkyards); id. § 4966 (Supp. 1986-1987) (code enforcement officers); id. § 3223(3) (1978) (seasonal shoreland dwelling conversions); id. § 2153 (1978) (procedures for enactment of municipal ordinances). Municipalities may also receive a delegation of authority to administer the Site Location of Development Act and the Alteration of Coastal Wetlands Act under ME. REV. STAT. ANN. tit. 38, §§ 473, 489 (1978).

[FN87]. ME. REV. STAT. ANN. tit. 38, §§ 435-447 (Supp. 1986-1987).

[FN88]. For example, residential dwellings, subdivisions, and commercial facilities permitted by the Town of York amounted to nearly six times the acreage approved by the DEP under the site location law in York. Address by Evelyn Jephson, Member, Maine Board of Environmental Protection, to Maine Audubon Society, Maine 2000: The Changing Land (Mar. 23,

1986). Between 1970 and 1985, in a nine-town region of York County, 337, of 419 subdivision applications were reviewed only by local boards. SOUTHERN MAINE REGIONAL PLANNING COMMISSION, THE CUMULATIVE IMPACTS OF DEVELOPMENT IN SOUTHERN MAINE: ASSESSMENT OF MUNICIPAL CAPABILITY TO MANAGE GROWTH 3 (1986).

[FN89]. Maine law defines zoning as 'the division of a municipality into districts and the prescription and reasonable application of different regulations in each district.' ME. REV. STAT. ANN. tit. 30, § 4962(1)(H) (1978).

[FN90]. See 6 P. ROHAN, ZONING AND LAND USE CONTROLS § 44.01 (1986).

[FN91]. This limitation was recognized by the Law Court in In re Spring Valley Dev. by Lakesites, Inc., 300 A.2d 736, 743 (Me. 1973). In the court's discussion of the legislative intent behind the Site Location of Development Act it noted that the Legislature eliminated a provision from the bill that would have excluded developments complying with local zoning and subdivision ordinances. In deleting this provision, the Legislature 'reject[ed] the concept that local zoning is capable of protecting the public from ecological harm.' Id.

[FN92]. For example, the Town of Brunswick zoning ordinance authorizes the planning board, on a discretionary basis, to require an applicant for site plan approval to conduct a 'community facilities impact analysis,' describing the demographic market the project is intended to serve and its estimated impact on a number of municipal facilities and services. BRUNSWICK, ME., ZONING ORDINANCE ch. 5, § 506.15 (1986). The board is also authorized to assess 'development impact fees' if a decline in the level of municipal services is projected as a result of the analysis. Id. § 506.16.

[FN93]. ME. REV. STAT. ANN. tit. 30, § 4962(1)(I)(3) (Supp. 1986-1987).

[FN94]. Id. § 4961.

[FN95]. Id. § 4962(1)(A).

[FN96]. ME. REV. STAT. ANN. tit. 38, § 439 (Supp. 1986-1987).

[FN97]. For special environmental resources identified in a plan, such as ground water aquifers, wetlands, scenic resources, or shorelines, a town can choose to adopt special measures minimizing the effects of development. For example, the Town of Brunswick has adopted aquifer zoning and visual assessment requirements. BRUNSWICK, ME., ZONING ORDINANCE, ch. 4, §§ 404, 406 (1986).
Amendments in 1986 to the Comprehensive Planning Act added to the list of possible plan elements 'a shoreland management plan that considers functionally water-dependent uses and public access to and use of the shoreline.' See supra note 22.

[FN98]. ME. REV. STAT. ANN. tit. 30, § 4961(1)(A) (Supp. 1986-1987). 'Transfer of development rights' was added to the list of planning techniques by amendments in 1986, in recognition that a number of Maine communities was interested in using this method as a means of guiding development and controlling density while responding to the development interests of property owners. P.L. 1985, ch. 794, § 3. The towns of Cape Elizabeth and Brunswick, for example, have adopted a transfer of development rights (TDR) system. CAPE ELIZABETH, ME., ZONING ORDINANCE § 19-3-11 (1985); BRUNSWICK, ME., ZONING ORDINANCE, ch. 3, § 310.5 (1986). The TDR system has been used successfully in other states and has survived constitutional challenge. See, e.g., Penn Central Transp. Co. v. New York City, 438 U.S. 107 (1978); City of Hollywood v. Hollywood, Inc., 432 So. 2d 1332, 1337-38 (Fla. Dist. Ct. App. 1983). See also Malone, The Future of

Transferable Development Rights in the Supreme Court, 73 KY. L.J. 759 (1984-1985); Comment, The Transferability of Development Rights, 53 U. COLO. L. REV. 165 (1981).
Despite the absence of specific reference to growth management plans and ordinances, a number of Maine communities had already adopted such measures. See Baker, Growth Management in Southern Maine, MAINE TOWNSMAN, June 1985, at 16. For example, the Town of Kennebunkport limits the permissible annual number of new dwelling units to the number comparable with the average rate of housing growth in the community during the 1970-1975 period, subject to periodic revision by the planning board. KENNEBUNKPORT, ME., PLANNED GROWTH ORDINANCE § 2.2 (1985). The ordinance controls the location of growth by limiting the number of growth permits that may be issued to the various zoning districts. Id. § 2. The permits are available only to qualified developers who must obtain one growth permit for each dwelling unit he or she wishes to build. Id. Preference is given to dwellings which are to be served by municipal water and sewer lines. Slow-growth ordinances have been upheld by the Law Court. See Tisei v. Town of Ogunquit, 491 A.2d 564 (Me. 1985); Begin v. Inhabitants of the Town of Sabattus, 409 A.2d 1269 (Me. 1979). Cf. Berry v. Inhabitants of the Town of Kennebunk, No. CV-83-463 (Me. Super. Ct., York Cty. 1985) (town's annual cap on the number of building permits failed to meet the requirement that it bear a reasonable relationship to the public health, safety, and welfare).

[FN99]. ME. REV. STAT. ANN. tit. 30, § 4956 (1978 & Supp. 1986-1987).

[FN100]. Id. § 4956(2)(A).

[FN101]. Id. § 4956(3).

[FN102]. The only criterion that makes any reference to other projects is the ground water standard, which requires that the subdivision 'will not, alone or in conjunction with existing activities, adversely affect the quality or quantity of ground water.' Id. § 4956(3)(M). An example of a local site plan review standard that takes account of cumulative effects can be found in the Town of Kennebunkport's land use ordinance. The planning board must approve the plan unless it finds, inter alia, that 'existing off-site ways and traffic facilities cannot safely accommodate the increased traffic generated by the development as far away from the development as the effects of the development can be traced with reasonable accuracy.' KENNEBUNKPORT, ME., LAND USE ORDINANCE art. 10.5(A)(17) (amend. 1986). This provision is modeled after a similar standard in the DEP site location regulations. See supra note 41.

[FN103]. ME. REV. STAT. ANN. tit. 38, § 4956(1) (1978 & Supp. 1986-1987). This qualification of the terms 'tract or parcel' was extended to state-level reviews when the 112th Legislature passed L.D. 1229 amending the Site Location of Development Act to include similar language. P.L. 1985, ch. 654 (amending ME. REV. STAT. ANN. tit. 38, § 482(5)). The Site Location of Development Act applies, inter alia, the subdivisions, which are defined as 'the division of a parcel of land into 5 or more lots,' offered for sale or lease to the general public during any five-year period if the land area exceeds 20 acres. ME. REV. STAT. ANN. tit. 38, § 482(5) (Supp. 1986-1987). The 1985 amendments added a significant exception to the definition of a 'subdivision'; the Act now excepts divisions of parcels into lots of 40 or more acres. Id. § 482(5)(G).

[FN104]. Brennan, When Is a Condominium a Subdivision?, MAINE TRIAL PRACTICE Nov. 1985, at 1.

[FN105]. Town of Arundel v. Swain, 374 A.2d 317, 320 (Me. 1977) (individual seasonal campsites were not split off from the whole parcel). In a subsequent case, the Law Court found that a proposed campsite development was a subdivision because 'each purchaser receives an indefinite fee interest in a unique and identifiable parcel of land.' Planning Board v. Michaud, 444 A.2d 40, 43 (Me. 1982).

[FN106]. For example, the Old Orchard Beach zoning ordinance has defined condominiums as subdivisions. OLD

ORCHARD BEACH, ME., ZONING ORDINANCE § 3.2. In Grand Beach Ass'n v. Inhabitants of the Town of Old Orchard Beach, No. CV-84-610, at 2 (Me. Super. Ct., York Cty., May 21, 1985), the court ruled that because the town's definition of subdivision was substantially the same as the state statute, the decision in Town of Arundel v. Swain, 374 A.2d 317 (Me. 1977), was controlling and the condominium was not subject to subdivision review. As Justice Brennan pointed out, the statute's definition of subdivision, as interpreted by the Law Court, excludes from review land development projects that may pose significant demands on local services and on the surrounding environment. Maine's statute has not evolved to take account of recent innovations in land ownership and development formats. Brennan, When Is a Condominium a Subdivision?, MAINE TRIAL PRACTICE Nov. 1985, at 2.

[FN107]. To bring such projects under the review of local planning boards, municipalities need to adopt measures such as site plan review ordinances and define their scope to include all developments. See MAINE MUNICIPAL ASSOCIATION, HANDBOOK FOR LOCAL PLANNING BOARDS: A LEGAL PERSPECTIVE 13-14 (1982). The 'site plan review ordinance' is a commonly adopted home rule ordinance used by towns to regulate developments not meeting the legal definition of a 'subdivision,' for example, shopping malls and apartment buildings. See, e.g., BRUNSWICK, ME., ZONING ORDINANCE § 508 (1986) ('Site plan review applies to the development proposals for new or altered commercial, retail, industrial, and institutional structures, and multiple family dwellings consisting of three or more attached dwelling units . . . whether or not the development includes subdivision or resubdivision of the site.'). See also KENNEBUNKPORT, ME., LAND USE ORDINANCE art. 10 (1985) ('Planning Board Site Plan Review').
Municipalities may also go beyond the relatively narrow criteria of the subdivision statute by using their home rule power to adopt a land use ordinance with criteria requiring consideration of each project in light of past and future projects with effects that may be cumulative. The subdivision statute, in fact, seems to contemplate the adoption of land use ordinances that go beyond the subdivision criteria. The Act authorizes municipalities to approve a proposed subdivision upon conditions necessary to satisfy the enumerated criteria 'and to satisfy any other regulations adopted by the reviewing authority, and to protect and preserve the public's health, safety and general welfare.' ME. REV. STAT. ANN. tit. 30, § 4956(2) (1978 & Supp. 1986-1987). This language indicates that the Legislature anticipated that planning boards would be using criteria in addition to those provided by the subdivision statute.

[FN108]. ME. REV. STAT. ANN. tit. 30, § 4962 (1978 & Supp. 1986-1987).

[FN109]. ME. REV. STAT. ANN. tit. 38, § 435 (Supp. 1986-1987).

[FN110]. Id. Municipalities were required to prepare comprehensive plans and zoning and subdivision ordinances designed to achieve the purposes of the Act by July 1, 1974. Failure to comply led to the imposition of a shoreland zoning ordinance on the community by the state. Id. §§ 438, 442.

[FN111]. L.D. 1543, Statement of Fact (95th Legis. 1971).

[FN112]. ME. REV. STAT. ANN. tit. 38, § 435 (1978 & Supp. 1986-1987).

[FN113]. Compare the inland boundary of state shorelands as defined by the Shoreland Zoning Act, id. § 435, with the inland boundary of the federal coastal zone as defined in the federal Coastal Zone Management Act, 16 U.S.C. § 1453(1) (1986) (the inland boundary of the 'coastal zone' should include areas to the 'extent necessary to control sharelands, the uses of which have a direct and significant impact on the coastal waters').

[FN114]. ME. REV. STAT. ANN. tit. 38, § 472(2) (1978 & Supp. 1986-1987). See supra text at notes 37-38.

[FN115]. See MAINE STATE PLANNING OFFICE, THE CUMULATIVE IMPACTS OF DEVELOPMENT IN SOUTHERN MAINE: IMPORTANT WILDLIFE HABITATS 3 (1986).

[FN116]. The Act requires the State Planning Office and the Land Use Regulation Commission to adopt minimum guidelines reflecting considerations of preventing and controlling water pollution, protecting spawning grounds, fish, aquatic life, bird and other wildlife habitat, location and size of structures and signs and conserving shore cover. The incorporation of such guidelines into a municipal regulatory ordinance shall be deemed sufficient to meet the requirements of this section. ME. REV. STAT. ANN. tit. 38, § 442 (Supp. 1986-1987). Curiously, the Act directs the state agencies to prepare guidelines addressing only some of the shoreland protection considerations identified in the Act's purposes. Id. The guidelines are not required to include measures to conserve visual and actual points of access to the shoreline and natural beauty. Id. The guidelines adopted by the State Planning Office address these considerations only by including them as planning board permit criteria. MAINE STATE PLANNING OFFICE, MINIMUM SHORELAND ZONING ORDINANCE § 12(B)(6) (1979). These guidelines do not include specific land use standards to ensure that these assets will be protected, as they do for shore cover and water quality. Id. § 11(D), (O).

[FN117]. ME. REV. STAT. ANN. tit. 38, § 442 (Supp. 1986-1987).

[FN118]. See MAINE STATE PLANNING OFFICE, MINIMUM SHORELAND ZONING ORDINANCE § 11 (1979).

[FN119]. Id.

[FN120]. The Shoreland Zoning Act requires ordinances adopted under its authority to be pursuant to a comprehensive plan. ME. REV. STAT. ANN. tit. 38, §§ 438(2), 439 (Supp. 1986-1987).

[FN121]. See id. § 438(2)(A). Amendments in 1986 added a provision specifically authorizing zoning or subdivision controls to protect public rights for physical and visual access to the shoreline, pursuant to a comprehensive plan. P.L. 1985, ch. 794, § A-9 (codified at ME. REV. STAT. ANN. tit. 38, § 440-A (Supp. 1986-1987)).

[FN122]. ME. REV. STAT. ANN. tit. 38, § 442 (Supp. 1986-1987). For example, the Town of Old Orchard Beach had a state-imposed zoning ordinance until November 17, 1982. On that date the state oversight agencies approved the town's shoreland zoning ordinance, which incorporated the requirements of the state guidelines with the exception of the residential density limit. The state oversight agencies agreed to waive the one unit per 10,000 square feet requirement in exchange for a building height limit of 70 feet. See State of Maine, Motion for Leave to File Brief as Amicus Curiae, Attachments B and C, Grand Beach Ass'n v. Town of Old Orchard Beach, 576 A.2d 551 (Me. 1986).

[FN123]. ME. REV. STAT. ANN. tit. 38, §§ 442, 443 (Supp. 1986-1987). The enforcement of local land use laws, including shoreland zoning ordinances, was greatly facilitated by the passage of amendments recommended by a legislative study committee in 1983, P.L. 1983, ch. 796 (codified at ME. REV. STAT. ANN. tit. 30, § 4966 (Supp. 1986-1987)), and the adoption of a district court rule establishing a summary procedure for the prosecution of land use violations, M.R. Civ. P. 80K. See TRAFTON COMMITTEE, REPORT OF THE COMM'N ON LOCAL LAND USE VIOLATIONS (1983). A 1981 report had found that between 10 and 20% of all land development was in violation of the Shoreland Zoning Act and the minimum shoreland ordinance. ARTHUR LERMAN ASSOCIATES, EVALUATION OF THE ENFORCEMENT OF FOUR MAINE ENVIRONMENTAL STATUTES (1981). Under the 1983 amendments, municipalities may authorize their code enforcement officers to prosecute alleged violations of local land use laws in the district courts. See generally Seel, Prosecuting Land Use Violations, MAINE TOWNSMAN, Aug. 1986, at 14.

[FN124]. A report by the DEP concludes that local planning boards are granting many permits for developments that do not meet the requirements of the shoreland zoning ordinance or the variance standard of 'undue hardship.' ME. DEP'T ENVTL. PROTECTION, BIENNIAL SHORELAND ZONING REPORT TO 113TH LEGISLATURE (Draft, Feb. 1987).

[FN125]. MAINE STATE PLANNING OFFICE, MINIMUM SHORELAND ZONING ORDINANCE § 12 (1979).

[FN126]. ME. REV. STAT. ANN. tit. 38, § 443 (Supp. 1986-1987).

[FN127]. An appropriate control would make the variance legally valid only after approval by the state oversight agency. In addition, the state should be able to withhold community assistance grants until municipal compliance is forthcoming. Interview with Jeffrey Pidot, Assistant Attorney General, in Portland, Me. (Oct. 29, 1986).
In October 1986, the state oversight agencies acted to correct one municipality's shoreland zoning administration. The Shoreland Zoning Task Force of the BEP and the LURC notified the City of South Portland that recent amendments to its zoning ordinance were in violation of the Act and the minimum shoreland zoning ordinance. The amendment allowed shoreline property owners to use up to 25% of their land below the high water mark in determining the total land area available for development under the minimum lot size requirement, effectively increasing the allowable density of shoreline development. Letter from Richard P. Baker, Shoreland Zoning Coordinator, Department of Environmental Protection, to Jerry Bryant, City Manager, City of South Portland (Oct. 20, 1986). Upon the recommendation of the Task Force, the oversight agencies may impose a suitable ordinance which the city will have to observe and enforce. Letter from Jeffrey Pidot, Assistant Attorney General, to Steven Fletcher, Counsel for South Portland (Oct. 24, 1986). See supra notes 122-23. See also Campbell, S. P.'s Growing Pains: DEP Puts Pressure on City's Waterfront Zoning, Portland Evening Express, Oct. 23, 1986, at 1, col. 1. The effect of the amendment would have been to allow a proposed wharf condominium project to increase its number of dwelling units. Compare KENNEBUNKPORT, ME., LAND USE ORDINANCE art. 2.2 ('Lot Minimum Area: The lot area . . . excluding lands which are below the normal high water mark . . ..') and art. 6.1(D) (land in the intertidal zone cannot count toward lot size, setback, frontage, or density requirements) with Me. Dep't Envl. Protection Reg. 372(1)(L) (Nov. 1, 1979), reprinted in CODE OF MAINE RULES 203261 (1986) (defining 'subdivision' to include intertidal property in determining area of parcel of land). Early in 1987, the South Portland City Council amended its ordinance to conform with the state minimum guidelines. Campbell, Shoreland Zoning Changed, Portland Press Herald, Feb. 4, 1987, at 9, col. 2.
The limitations of the oversight provisions are compounded by the lack of an explicit linkage between state regulatory actions under the site location law and the Coastal Wetlands Act and municipal shoreland zoning decisions. This deficiency was demonstrated in the proposed Danton Towers condominium project in Old Orchard Beach. The town issued a conditional use permit and variance to the applicant in April 1985, doubling the allowable height to 140 feet despite warnings from the state shoreland zoning coordinator. Letter from R. Rothe, Senior Planner, State Planning Office, to C.J. Barstow, Ocean Park, Me. (Apr. 2, 1985). Meanwhile, the BEP approved the applicant's request for a sand dune permit for the proposed high-rise building. Because it found that the application met the criteria of the sand dune regulations, the Board approved the application, despite its noncompliance with the height restriction of the town's shoreland zoning ordinance. Me. Dep't Envtl. Protection, Board Order No. L-010977-04-A-N (Nov. 27, 1985). The Board's only recourse was to request the Attorney General to seek a court order requiring the town to administer properly its shoreland ordinance. ME. REV. STAT. ANN. tit. 38, § 443 (Supp. 1986-1987).

[FN128]. U.S. CONST. amend. XIV; ME. CONST. art. 1, § 6-A.

[FN129]. U.S. CONST. amend V; ME. CONST. art. 1, § 21.

[FN130]. See, e.g., In re Spring Valley Dev. by Lakesites, Inc., 300 A.2d 736, 751 (Me. 1973).

[FN131]. Another important standard of review is the 'substantial evidence' test. See ME. REV. STAT. ANN. tit. 5, § 1107 (1979 & Supp. 1986-1987).

[FN132]. Land use permit decisions may also be challenged on the grounds that the state and local agencies exceeded their statutory authority. ME. REV. STAT. ANN. tit. 5, §§ 11001, 11007 (1979 & Supp. 1986-1987). State and local decisions applying a cumulative impact standard would be likely to survive this challenge because Maine's Coastal Management Policies Act specifically requires agencies to exercise their authority in a manner that addresses the cumulative effects of development. ME. REV. STAT. ANN. tit. 38, § 1801 (Supp. 1986-1987). Because the Act directs both state and local agencies to employ this standard, the local ordinance would not be vulnerable on the ground that it was preempted by state law. Plaintiffs may also claim that the statute or ordinance, either facially or as applied, denies them equal protection of the law in violation of article 1, section 6-A of the Maine Constitution and the fourteenth amendment of the United States Constitution. See, e.g., Begin v. Inhabitants of Town of Sabattus, 409 A.2d 1269, 1276 (Me. 1979). They would argue that the law discriminates against developers who apply for permits later in time, after other permits have already been granted, and that there is no rational basis for this distinction. This claim would not likely prevail, though, if the information in the record established the likelihood that the later development would result in additive or synergistic effects upon the natural resources or municipal facilities in violation of the statutory standards. See infra note 4. The need to prevent these effects would provide a rational basis for the distinction among developers.

[FN133]. The analysis presented here is based upon Maine case law and statutory criteria. Since the particular facts of any case will significantly affect its ultimate disposition, this discussion should not be taken as definitive, but only as a guide to the types of arguments that could be expected and their possible judicial resolution.

[FN134]. Under Maine's Administrative Procedure Act (MAPA), persons believing they have been legally injured by an order or decision of an administrative agency have a right to appeal that decision to the superior court, unless this right is specifically excluded by statute. ME. REV. STAT. ANN. tit. 5, §§ 11001, 11007 (1979 & Supp. 1986-1987). The superior court may reverse or modify the decision if the challenging party can prove that the agency action: (1) violates constitutional or statutory provisions, (2) exceeds statutory authority, (3) involved an unlawful procedure, (4) was affected by bias or error of law, (5) was unsupported by substantial evidence on the whole record, or (6) was arbitrary or capricious or characterized by an abuse of discretion. Id. § 11007.

Land use decisions by municipal planning board may be appealed to the town's board of appeals if one has been established pursuant to ME. REV. STAT. ANN. tit. 30, § 2411. They may also be appealed directly to the superior court under the MAPA. If a local board is used for the initial appeal, any part may appeal its decision to the superior court. Id. § 2411(3)(F); M.R. CIV. P. 80B. To meet the requirements of standing the plaintiff must have appeared before the board of appeals and must allege sufficient facts to show that she will potentially suffer a particularized injury if the board's decision stands. Grand Beach Ass'n v. Town of Old Orchard Beach, 516 A.2d 551, 553 (Me. 1986). The municipal decision will be reversed or remanded if the court finds that it involved either an abuse of discretion or an error of law, or if its findings were not supported by substantial evidence. See, e.g., Driscoll v. Gheewalla, 441 A.2d 1023, 1026 (Me. 1982). The reviewing court may not substitute its judgment for that of the agency on questions of fact but may only review the record to determine if the evidence supports the decision. ME. REV. STAT. ANN. tit. 5, § 11007(3) (1979). See Mack v. Municipal Officers, 463 A.2d 717, 719-20 (Me. 1983).

The project's developers would face several hurdles if they wished to reverse these decisions. In proving that the decisions had one of the above deficiencies, the developers would face a presumption in favor of the decisionmaking body. The courts will assume that the administrative decision was 'taken with full knowledge of material facts and in justification thereof.'

Driscoll v. Gheewalla, 441 A.2d at 1030. Also, the courts will give great weight to the agencies' interpretation of their own regulations and will set aside an interpretation only if it is clearly erroneous. Central Me. Power Co. v. Public Util. Comm'n, 455 A.2d 34, 44 (Me. 1983).

[FN135]. State v. Rush, 324 A.2d 748, 752 (Me. 1974).

[FN136]. Id.

[FN137]. Id. at 752-53 (emphasis in original).

[FN138]. Id. at 753 (citing Donahue v. City of Portland, 137 Me. 83, 85, 15 A.2d 287, 288 (1940) (ordinances presumed to be reasonable)).

[FN139]. The party challenging the ordinance must prove that there are no facts of any kind that would support the need for the ordinance. Tisei v. Town of Ogunquit, 491 A.2d 564, 569 (Me. 1985); State v. Rush, 324 A.2d 748, 753 (Me. 1974).

[FN140]. The application of a less restrictive means to achieve the same purpose is only required when the governmental action impinges on a fundamental constitutional right. State v. Rush, 324 A.2d at 753-54 (quoting San Antonio Ind. School Dist. v. Rodriguez, 411 U.S. 1, 51 (1973)).

[FN141]. See Hall v. Board of Envtl. Protection, 498 A.2d 260, 266 (Me. 1985) (court's limited scope of review does not allow it to examine other permit applications).

[FN142]. Id. The Halls' claims included the denial of due process, taking of property without compensation, and violation of the requirement for substantial evidence on the record.

[FN143]. Brief for Appellants at 28-31, Hall v. Board of Envtl. Protection, 498 A.2d 260 (Me. 1985).

[FN144]. Hall v. Board of Envtl. Protection, 498 A.2d at 266.

[FN145]. Hall v. Board of Envtl. Protection, No. CV-83-85, at 2-3 (Me. Super. Ct., Sag. Cty., Aug. 16, 1984).

[FN146]. Hall v. Board of Envtl. Protection, 498 A.2d at 265.

[FN147]. Id. The case was remanded to the superior court, however, for a trial on the unconstitutional taking claim. See infra note 161.

[FN148]. U.S. CONST. amend. V ('nor shall private property be taken for public use, without just compensation'), amend. IX; ME. CONST. art. 1 § 21 ('Private property shall not be taken for public uses without just compensation; nor unless the public exigencies require it.'). See generally F. BOSSELMAN, D. CALLIES & J. BANTA, THE TAKING ISSUE (1973).

[FN149]. '[W]hether a particular restriction will be rendered invalid by the government's failure to pay for any losses proximately caused by it depends largely 'upon the particular circumstances [in that] case'.' Seven Islands Land Co. v. Maine Land Use Reg. Comm'n, 450 A.2d 475, 482 (Me. 1982) (quoting Penn Cent. Transp. Co. v. New York City, 438 U.S. 104, 124 (1978)).

[FN150]. Penn Cent. Transp. Co. v. New York City, 438 U.S. at 124.

[FN151]. 260 U.S. 393 (1922).

[FN152]. 450 A.2d 475 (Me. 1982). In this case, the plaintiff's property was zoned as a protection district for deer wintering habitat. LURC granted a restricted timber harvesting permit, allowing only one portion of the property to be cut and, on another portion, only dead and dying fir trees to be harvested. LURC made what was in essence a cumulative impact decision, finding that the owner had already harvested 1000 acres of the 2700-acre Burpee Brook deer yard, and that further harvesting would threaten essential wildlife habitat. Id. at 479 n.3. LURC found that '[p]ast harvesting activities within the bounds of the deer wintering area have significantly reduced the size of the currently suitable winter habitat.' Id.
The Law Court examined the LURC statute and found a clear legislative plan to set aside protection districts where harvesting activities would be regulated or prohibited. Id. at 481 (citing ME. REV. STAT. ANN. tit. 12, § 685- A(1)(A) (1981)). The statute defines protection districts as areas 'where development would jeopardize significant natural, recreational and historic resources, including, but not limited to, flood plains, precipitous slopes, wildlife habitat and other areas critical to the ecology of the region or State.' ME. REV. STAT. ANN. tit. 12, § 685-A(1)(A) (1981).

[FN153]. Seven Islands Land Co. v. Maine Land Use Reg. Comm'n, 450 A.2d at 482 (quoting Agins v. City of Tiburon, 447 U.S. 255, 262 (1980)).

[FN154]. 'The 'loss of future profits . . . provides a slender reed upon which to rest a taking claim. Prediction of profitability is essentially a matter of reasoned speculation that courts are not especially competent to perform." Id. at 482 n.10 (quoting Andrus v. Allard, 444 U.S. 51, 66 (1980)). See also Ace Ambulance Serv. v. City of Augusta, 337 A.2d 661, 666- 67 (Me. 1975)).

[FN155]. Seven Islands Land Co. v. Maine Land Use Reg. Comm'n, 450 A.2d at 482.

[FN156]. Id. (citing Penn. Cent. Transp. Co. v. New York City, 438 U.S. 104, 130-31 (1978)).

[FN157]. 447 U.S. 255 (1980).

[FN158]. Id. at 260-61 (citations omitted).

[FN159]. Id. at 261 (quoting CAL. GOV'T CODE § 65561(b) (West 1983)). The City of Tiburon prohibited new single-family construction 'until the builder submits a plan compatable with 'adjoining patterns of development and open space." Id. at 262 (quoting TIBURON, CAL. ORDINANCE NO. 123 N.S. § 2(F)). The California statute and the Tiburon zoning ordinance represent one of the most effective approaches to managing the cumulative effects of land development. This approach requires a plan that identifies natural and scenic resources worthy of protection but which are susceptible to incremental loss through small-scale development, and a set of ordinances to achieve the plan's goals.

[FN160]. Id. at 261.

[FN161]. Id. at 262. In contrast, the Supreme Court has recently held that a California regulatory decision requiring landowners to grant a public right of way across their beach, so as to minimize the development's impact upon public shoreline access, amounted to the taking of an easement across the property, and thereby required just compensation. See Nollan v. Cal. Coastal Comm'n, 55 U.S.L.W. 5145 (U.S. June 26, 1986) (No. 86-133). See infra note 247 for additional discussion of this decision.
The contrasting decisions of two Maine superior courts in Hall v. Board of Environmental Protection, on the unconstitutional taking claim put forward by landowners who were denied a permit to build on sand dunes, illustrate the unpredictability of

judicial determinations under the general principles outlined in U.S. Supreme Court cases. The first superior court decision, Hall v. Board of Envtl. Protection, No. CV-83-85 (Me. Super. Ct., Sag. City., Aug. 16, 1984), dismissed the taking claim because the plaintiff had failed to allege the facts sufficient to establish it. The court concluded that the two lots of oceanfront property in popular beach recreation areas 'cannot be considered essentially useless, even in an unimproved state.' Id. at 3. It found the Board's denial of a single proposed use to be a limited restriction and a valid exercise of the police power benefitting the neighboring property owners and the public at large. According to the superior court, the Halls had failed to allege that their property had any significantly greater value before the BEP decision than it had afterward, 'except an expectation that its value could be enhanced by construction of the proposed dwelling. Such an expectation is unprotected by the taking clause of the constitution.' Id.

On appeal, the Law Court ruled that the superior court erred in dismissing the taking challenge. The court found that it was sufficient that the Halls alleged that their property was rendered substantially useless without the sand dune permit. Hall v. Board of Envtl. Protection, 498 A.2d 260, 267 (Me. 1985). The court remanded the case to the superior court to give the Halls an opportunity to prove that their property was in fact rendered substantially useless by the Board's decision.

On remand, the superior court considered the uses permitted under the local zoning ordinance and the testimony of real estate appraisers, and concluded that the 'highest and best use' of the property was for a single-family, year-round residence. Hall v. Board of Envtl. Protection, No. CV-83-85 (Me. Super. Ct., Sag. Cty., Dec. 4, 1986). The court found the difference in the property's fair market value as a single-family residence before the Board's action and its value after the action to be one hundred times less and thus 'so great that it deprives the plaintiffs of the essential attribute of the property, namely the use of the property as a single-family residence on a year-round basis.' Id. at 5.

The Law Court has recently reversed this decision by the superior court as clearly erroneous, and ruled that property owners need not be compensated for land use decisions by state or local agencies as long as the private owner remains able to make 'beneficial and valuable' use of the land. Hall v. Board of Envtl. Protection, No. 4485, slip op. at 5 (Me. July 14, 1987). The Hall court noted that the couple could still make significant use of their property by hooking up a camper to utilities on the site and that similar properties with similarly limited uses had recently 'sold for significant sums.' Id.

[FN162]. 'The question is whether the right in question constitutes 'a fundamental attribute of ownership' such that its extinguishment would render the property substantially useless.' Seven Islands Land Co. v. Maine Land Use Reg. Comm'n, 450 A.2d 475, 482 (Me. 1982) (quoting Agins v. City of Tiburon, 447 U.S. 255, 262 (1980)).

[FN163]. Agins v. City of Tiburon, 447 U.S. 255 (1980).

[FN164]. A discussion of the taking issue under Maine law would be incomplete without some reference to the troubling decision in State v. Johnson, 265 A.2d 711 (Me. 1970). In this early case under Maine's original wetlands control act (previously codified at ME. REV. STAT. ANN. tit. 12, §§ 4701-4709), the Law Court held that the denial of a permit to fill a portion of the salt marsh in Wells was an unconstitutional taking. It is an important case in one sense because wetland fill prohibitions are some of the most stringent regulatory efforts to prevent the incremental despoliation of an important natural resource. The Johnson case, however, can be distinguished on several grounds, making it of historic interest only.

First, the language of the wetland statute has changed. The court in Johnson took specific notice of the language of section 4704, which provided that '[a]ppeals may be taken . . . for the purpose of determining whether the action appealed from so restricts the use of the property as to deprive the owner of the reasonable use thereof, and is therefore an unreasoanble exercise of the police power, or which constitutes the equivalent of a taking without compensation.' Id. at 713. In the court's view, section 4704 by its terms equated a deprivation of the 'reasonable use' of an owner's property with an 'unreasoanble exercise of police power.' Id. at 714. An amendment in 1971 struck the equivalency clause, P.L. 1971, ch. 336, and the current statute allows reviewing courts to apply the modern standards for a taking analysis. See generally Halperin, Conservation Policy and the Role of Counsel, 23 MAINE L. REV. 119 (1971) (state failed to distinguish wetland restriction

justified on ecological grounds from ordinary zoning control).
As illustrated by the discussion of the Agins decision of the United States Supreme Court, the test is no longer whether the plaintiff's property has been diminished in value. It is now whether the loss of property value far outweighs the benefits the owner receives from the regulation as a property owner and as a member of the public. See supra text accompanying notes 157-61. Moreover, decisions by the Law Court effectively overrule Johnson by requiring that the plaintiff show that his property is stripped of all practical value and rendered substantially useless. See, e.g., Sibley v. Town of Wells, 462 A.2d 27, 31 (Me. 1983) (denial of setback and minimum lot size variance did not constitute a taking because land still had substantial use and value in conjunction with plaintiff's adjacent lot); Seven Islands Land Co. v. Maine Land Use Reg. Comm'n, 450 A.2d 475, 482-83 (Me. 1982) (timber cutting restrictions did not deprive owner of all practical value). Cf. Curtis v. Main, 482 A.2d 1253, 1258 (Me. 1984) (even though some uses remain, a zoning restriction can amount to a taking). The court is now free to look at the value of all of the plaintiff's property, not just the parcel affected by the regulation, and can consider the benefits the owner receives from the restriction.

[FN165]. See, e.g., Lewis v. Maine Dep't of Human Servs., 433 A.2d 743 (Me. 1981).

[FN166]. Cope v. Town of Brunswick, 464 A.2d 223, 225 (Me. 1983).

[FN167]. Id.

[FN168]. It is a well-established, constitutionally mandated, principle that in 'delegating power to an administrative agency, the legislative body must spell out its policies in sufficient detail to furnish a guide which will enable those to whom the law is to be applied to reasonably determine their rights thereunder, and so that the determination of those rights will not be left to the purely arbitrary discretion of the administrator.'
Fitanides v. Crowley, 467 A.2d 168, 172 (Me. 1983) (quoting Stucki v. Plavin, 291 A.2d 508, 510 (Me. 1972)).

[FN169]. Lewis v. Maine Dep't of Human Servs., 433 A.2d at 748.

[FN170]. See id. at 748-49. In In re Spring Valley Dev. by Lakesites, Inc., 300 A.2d 736 (Me. 1973), the Law Court stated that 'the standards which a statute sets out to guide the determinations of administrative bodies must be sufficiently distinct so that the public may know what conduct is barred and so that the law will be administered according to the legislative will.' Id. at 751. The court held that the criteria of the Site Location of Development Act were 'clear, explicit, rationally related to the purposes of the Act and are adequate guides for the conduct of both the [Board] and the applicants.' Id. at 752.
A related issue is the sufficiency of evidence supporting the agency decision. The Maine Administrative Procedure Act, ME. REV. STAT. ANN. tit. 5, § 11007 (1978), requires substantial evidence or "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." In re Maine Clean Fuels, Inc., 310 A.2d 736, 741 (Me. 1973) (quoting Edison Co. v. Labor Board, 305 U.S. 197, 229 (1938)). A reviewing court will examine the entire record, but will limit its inquiry to whether there was substantial evidence to support the agency's decision. See, e.g., Mutton Hill Estates v. Town of Oakland, 488 A.2d 151, 153 (Me. 1985). See also Bruk v. Town of Georgetown, 436 A.2d 894 (Me. 1981) (planning board order based partially on cumulative effects criterion upheld on finding of substantial evidence of other criteria that were alone sufficient to support the order).

[FN171]. Chandler v. Town of Pittsfield, 496 A.2d 1058 (Me. 1985); Fitanides v. Crowley, 467 A.2d 168 (Me. 1983); Cope v. Town of Brunswick, 464 A.2d 223 (Me. 1983). See generally Seel, Standards of Review: Chandler Case, MAINE TOWNSMAN, March 1986.

[FN172]. 464 A.2d 223, 224 (Me. 1983).

[FN173]. Id. at 224-25 (quoting BRUNSWICK, ME., ZONING ORDINANCE § 1107 (1982)).

[FN174]. Id. at 227. The Law Court relied upon its prior decisions in Town of Windham v. LaPointe, 308 A.2d 286 (Me. 1973); Stucki v. Plavin, 291 A.2d 508 (Me. 1972); and Waterville Hotel Corp. v. Board of Zoning Appeals, 241 A.2d 50 (Me. 1968).

[FN175]. Florida has also addressed cumulative effects indirectly through land development review provisions of Florida law. See, e.g., FLA. STAT. ANN. § 163.3178(j) (West Supp. 1987).

[FN176]. Id. § 403.91. See generally Smallwood, Alderman & Dix, The Warren S. Henderson Wetlands Protection Act of 1984: A Primer, 1 J. LAND USE & ENVTL. L. 211 (1985).

[FN177]. ME. REV. STAT. ANN. tit. 38, §§ 471-478 (1978 & Supp. 1986- 1987).

[FN178]. FLA. STAT. ANN. § 403.919 (West 1986). The principal substantive criteria for permit decisions are set forth in section 403.918 and reflect a broad public interest standard. Id. § 403.918(2). See also Ankersen, Cumulative Impacts in Florida Environmental Decisionmaking, FLA. B.J., Mar. 1986, at 25. Ankersen points out that prior to 1984 the Department relied on FLA. STAT. ANN. § 403.088(1) (West 1986), which had required a permit for wastewater discharge 'which by itself or in combination with the wastes of other sources, reduces the quality of the receiving waters.'

[FN179]. FLA. STAT. ANN. § 258.35-.46 (West Supp. 1987). The Department of Natural Resources is authorized by administrative regulations to examine:
(1) the number and extent of similar human actions within the preserve that have previously affected or are likely to affect a preserve, whether considered by the Department under its current authority or existed prior to or since the enactment of the [Aquatic Preserve] Act;
(2) the similar activities within the preserve that are currently under consideration by the Department;
(3) direct and indirect effects upon the preserve and adjacent preserves, if applicable, that reasoanbly may be expected to result from an activity; or
(4) the extent to which mitigation measures may compensate for adverse impacts (among others).
FLA. ADMIN. CODE Ch. XVI-Q-20, as cited in Estevez, Assessment and Policy Approaches to Managing Cumulative Impacts in Wetlands, 1986 PROC. OF THE NAT. WETLANDS ASSESS. SYMP. 209.
Estevez suggests, as an approach to cumulative effects management in wetlands, the development of prescriptive policies or goal statements, such as limiting wetland loss to preset limits. This approach uses levels of acceptable wetlands loss that are selected on the basis of policy judgments, in recognition that science cannot yet set thresholds. This management approach has the advantage of allowing for change with experience and of being available while more analytical assessment methods are developed and tested. Id. at 212.

[FN180]. Ankersen, supra note 178, at 26.

[FN181]. Smallwood, Alderman & Dix, supra note 176, at 257. The authors note that, '[i]t is in direct contrast to the first come, first served approach to permitting under which the first applicant for a permit in a certain area could conceivably use up all the available resources.' Id.

[FN182]. See Rossetter v. Florida Dep't of Envtl. Reg., 5 Fla. Admin. L. Rep. 1196-A (July 25, 1983).

[FN183]. Id. In these instances, alternatives were generally available to the permit applicants that were less environmentally

damaging and that would allow a larger number of homeowners to make a particular use of their coastal property. Smallwood, Alderman & Dix, supra note 176, at 257-58.

[FN184]. Florida D.O.A.H. Case No. 76-607 (Jan. 20, 1977), cited in B. Canter, The Consideration of Cumulative Impacts in Dep't of Envtl. Reg. Dredge and Fill Permits (1984) (unpublished) [hereinafter Florida DER Practice].

[FN185]. Florida DER Practice, supra note 184, at 3.

[FN186]. Id. Referred to as the full 'build-out' method, this approach estimates future environmental effects by predicting the outcome of all potential development in an area that is permissible under existing land use codes. See Estevez, supra note 179, at 212.

[FN187]. FLA. ADMIN. CODE ANN. r. 17-1.63 (1985) (Uniformity in Approval and Denial of Applications for Department Permits and Certifications). See infra note 197.

[FN188]. For example, in an early administrative case, Johnstone v. Florida Dep't of Envtl. Reg., 35 D.O.A.H. 62 (Apr. 19, 1972) (Recommended Order), aff'd in final order, 35 D.O.A.H. 70, the DER denied a permit for the removal of lakeside vegetation and the creation of a sand beach. See Ankersen, supra note 178, at 24. Even though the direct impact from the project itself was minimal, the hearing officer upheld the Department's action on the ground that 'if the Petitioner's project were granted, other similar projects would also be justified.' Id. (quoting Johnstone v. Florida Dep't of Envtl. Reg., 35 D.O.A.H. at 66).

[FN189]. 5 Fla. Admin. L. Rep. 1195-A (July 25, 1983).

[FN190]. The hearing officer stated, 'No rule regarding cumulative impact currently exists. Issuance of the permit requested here would not establish a precedent requiring issuance of other permits, since permits are issued on a case-by-case basis . . ..' Id. at 1198-A.

[FN191]. The Secretary attributed the authority for such practice to the standard of judicial review requiring courts to consider the consistency of the agency's practices. Id. at 1195-A (citing FLA. STAT. ANN. § 120.68(12) (West 1982)).

[FN192]. The Secretary described the public interest standard as follows:
When the surrounding circumstances establish a reasonable likelihood of similar project applications, the Department must predict what the resulting impact will be to the area's natural resources and productivity in order to fully protect the public interests at stake.
Id.
In an earlier administrative case cited by the Secretary, the hearing officer found that the consideration of cumulative effects was necessary under the public interest criterion for permit decisions. Id. at 1196-A (citing Hodges v. Florida Dep't of Envtl. Reg., Florida D.O.A.H. Case No. 79-2326 (Apr. 17, 1980)). The public interest standard in the Florida statute, now section 403.918, resembles language in Maine's wetlands regulatory statute. See ME. REV. STAT. ANN. tit. 38, § 435 (Supp. 1986-1987).

[FN193]. Rossetter v. Florida Dep't of Envtl. Reg., 5 Fla. Admin. L. Rep. at 1196-A.

[FN194]. Id.

[FN195]. In 1984, in Goldring v. Florida Dep't of Envtl. Reg., 452 So. 2d 968 (Fla. Dist. Ct. App. 1984), the hearing officer

had concluded that no agency policy statements existed to support use of a cumulative impact doctrine. Florida's Administrative Procedure Act, FLA. STAT. ANN. § 120.54 (West 1983), allows an agency to promulgate a rule by 'crystalliz[ing] an 'incipient policy' through case-by-case adjudication based on broad statutory delegation.' Ankersen, supra note 178, at 25 (citing McDonald v. Florida Dep't of Banking and Financing, 346 So. 2d 569, 577 (Fla. Dist. Ct. App. 1983)). The DER rejected the hearing officer's conclusion that the policy had not crystallized into a rule, but again denied the permit on the basis of its direct effects. The court nevertheless considered the application of the doctrine and found that 'the record does not contain the requisite factual foundation and explication of public policy to support the use of the cumulative impact doctrine.' Goldring v. Florida Dep't of Envtl. Reg., 452 So. 2d at 971. This holding seemed to recognize the validity of the cumulative impact doctrine but determined that the agency had not sufficiently developed a cumulative effects policy that could serve as the primary basis for a permit denial. See Ankersen, supra 178, at 25.

[FN196]. 452 So. 2d 1004 (Fla. Dist. Ct. App. 1984).

[FN197]. The hearing officer had concluded that '[t]he bridge application must be granted or denied on its own merits . . .. Consideration of the island development is a matter to be examined on another occasion.' Id. at 1005.
In Caloosa Property Owners' Ass'n, Inc. v. Florida Dep't of Envtl. Reg., 462 So. 2d 523 (Fla. Dist. Ct. App. 1985), the court, as it had in del Campo, recognized the existence of the cumulative effects principle. The court found that '[t]his doctrine requires DER to consider the precedential value of granting a permit under the assumption that similar future permits will be granted in the same locale, Rule 17-1.63, Florida Administrative Code.' Id. at 526. The rule states that '[f]inal Department actions . . . shall be consistent with prior Department actions, unless deviation therefrom is explained by the Department . . ..' FLA. ADMIN. CODE ANN. r. 17-1.63 (1985). The court narrowly construed the applicability of the doctrine, however, in finding that a cumulative impact analysis is required only when 'there is a 'reasonable likelihood' of similar project application in the same geographic location in the future.' Caloosa Property Owners' Ass'n, Inc. v. Florida Dep't of Envtl. Reg., 462 So. 2d at 526. The court found that there was no evidence that such future development applications were likely to be filed and affirmed the permit order.

[FN198]. Ankersen, supra note 178, at 21; Smallowood, Alderman & Dix, supra note 176, at 257.

[FN199]. Ankersen, supra note 178, at 26. An environmental lobbyist who participated in the legislative negotiations leading to passage of the Henderson Act suggests that the 'equitable distribution' label allowed the provision to be adopted. The new label helped convince developers that it would prevent early developers from exhausting an area's capacity to withstand the loss of wetland to the detriment of developers who were waiting to develop their land or who acquired their property later in time. Gluckman, The History Behind the Legislative History of the Cumulative Effects of Wetland Destruction, in MANAGING CUMULATIVE EFFECTS IN FLORIDA WETLANDS 229 (1986).

[FN200]. For a detailed discussion of the legislative history of the cumulative impact provision of the Henderson Act, see Ankersen, supra note 178, at 26.

[FN201]. See Ankersen, supra note 178, at 27 nn.12, 13.

[FN202]. The Henderson Act, however, does not address or give guidance to the DER on the substantive problems of implementing a cumulative effects standard, such as the geographic extent of the area to be considered. Nor does it explain what is meant by projects that 'may reasonably be expected to be located within the jurisdictional extent of waters, based upon land use restrictions and regulations.' FLA. STAT. ANN. § 403.919(3) (West 1986). This language does not help the agency resolve what it had found to be a very troubling aspect of the cumulative impact doctrine, that is, when is a future development too remote or speculative to be considered? See Smallwood, Alderman & Dix, supra note 176, at 259 (citing

Florida Mining & Materials Corp. v. Florida Dep't Envtl. Reg., 4 Fla. Admin. L. Rep. 2230-A (Aug. 5, 1982)). Recently, Florida expanded its concern for the impact of incremental development to land-based resources. In 1985, the Florida Legislature enacted the Local Government Comprehensive Planning and Land Development Regulation Act, FLA. STAT. ANN. § 163.3177(6)(a) (West 1986), a growth-management law requiring municipalities and counties to adopt comprehensive land use plans to help control rapid growth. Projected population trends, characteristics of the land, availability of public services, and need for development help determine future land use plans. Id. § 163.3178. The statute outlines several mandatory elements--coordination of plans with adjacent municipalities, capital improvement, conservation, housing, and others--to be addressed by the comprehensive plan. Further, the statute requires the adoption of regulatory and management techniques that protect the 'coastal environment and give consideration to cumulative impacts.' Id. § 163.3178(j). Florida's implementation of this standard should also be carefully observed by other coastal jurisdictions, as it may constitute a planning approach to cumulative effects management that avoids the difficulties of case-by-case regulation.

[FN203]. CAL. PUB. RES. CODE §§ 21000-21080 (West 1986).

[FN204]. Ankersen, supra note 178, at 23.

[FN205]. CAL. PUB. RES. CODE §§ 30000-30900 (West 1986).

[FN206]. Friends of Mammoth v. Board of Supervisors, 8 Cal. 3d 247, 257- 58, 502 P.2d 1049, 1055, 104 Cal. Rptr. 761 (1972) (CEQA applies to private activities regulated by public agencies as well as public projects carried out by agencies).

[FN207]. The Act requires the preparation of an environmental impact report (EIR) to inform the public and the agency of the likely effects of a project, of ways to minimize significant effects, and of available alternatives. CAL. PUB. RES. CODE § 21061 (West 1986).

[FN208]. Note, The Cumulative Impact Assessment in CEQA: Is the Standard in San Franciscans for Reasonable Growth Attainable?, 12 W. ST. L. REV. 801, 803 & n.12 (1985). See generally Seneker, The Legislative Response to Friends of Mammoth, 48 CAL. ST. B.J. 127 (1973).

[FN209]. CAL. PUB. RES. CODE § 21083(b) (West 1986) (emphasis added).

[FN210]. See Note, supra note 208, at 804 (citing CAL. ADMIN. CODE tit. 14, §§ 15000-15387) (originally printed Feb. 10, 1973)). See Bozung v. Local Agency Formation Committee, 13 Cal. 3d 263, 529 P.2d 1017, 118 Cal. Rptr. 249 (1975).

[FN211]. CAL. PUB. RES. CODE § 21083(b) (West 1986). See also Whitman v. Board of Supervisors, 88 Cal. App. 3d 397, 406-407, 151 Cal. Rptr. 866, 871 (1979). In Whitman, the court said this amendment could be viewed as 'simply clarifying a concept that was already existent in the statute rather than as adding to it.' Id. at 407 n.4, 151 Cal. Rptr. at 871 n.4.

[FN212]. CAL. ADMIN. CODE tit. 14, § 15023.5 (1977), cited in Whitman v. Board of Supervisors, 88 Cal. App. 3d at 407 n.4, 151 Cal. Rptr. at 871 n.4. Compliance with this section of the guidelines was not required until January 1, 1977. Id.

[FN213]. 88 Cal. App. 3d 397, 406, 151 Cal. Rptr. 866, 870-71 (1979).

[FN214]. 42 U.S.C. §§ 4321-4370 (1986). Regulations prepared by the Council on Environmental Quality (CEQ) on the implementation of NEPA require federal agencies to consider cumulative effects of their proposed activities. See supra note 4 for the federal definition of 'cumulative impact.' 40 C.F.R. § 1508.7 (1986).

[FN215]. Whitman v. Board of Supervisors, 88 Cal. App. 3d at 408, 151 Cal. Rptr. at 872 (quoting Natural Resources Defense Council v. Callaway, 524 F.2d 79, 88 (2d Cir. 1975) (emphasis in the original)).

[FN216]. 443 F. Supp. 1355 (W.D. Tenn. 1978).

[FN217]. Whitman v. Board of Supervisors, 88 Cal. App. 3d at 409, 151 Cal. Rptr. at 872 (quoting Akers v. Resor, 443 F. Supp. at 1360). The court also repeated the Akers court's statement that the related projects to be considered should include even those that are not within the control of the agency. Id.

[FN218]. Id. at 409-11, 151 Cal. Rptr. at 873-74. The court found the EIR's conclusion regarding minor increases in traffic and air emissions to lack 'even a minimal degree of specificity or detail,' but was rather a 'conclusion utterly devoid of any reasoned analysis.' Id. The agency had failed to make a good faith effort to obtain information from the oil companies on their plans for further activity. Id.

[FN219]. See Note, supra note 208, at 804-805. The 1980 guidelines required, first, '[a] list of projects producing related or cumulative impacts, including those projects outside the control of the agency'; second, '[a] summary of the expected environmental effects to be produced by those projects with specific reference(s) to additional information where that information is available'; and third, '[a] reasonable analysis of the cumulative impacts of the relevant projects.' 1980 State EIR Guidelines, cited in Note, supra note 208, at 806.

[FN220]. CAL. ADMIN. CODE tit. 14, § 15130 (1986). See Note, supra note 208, at 804-805. Article 20 contains the definitions of terms, with section 15355 providing the meaning of 'cumulative impacts.' The definition is essentially the same as that contained in the 1976 revision, supra note 212, with the additional clarification that
the cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time.
CAL. ADMIN. CODE tit. 14, § 15130 (1986).

[FN221]. Id.

[FN222]. Id. Also, in section 15144, the guidelines recognize the need for some forecasting by agencies, and direct them to use their 'best efforts' to find out and disclose all that they reasonably can. CAL. ADMIN. CODE tit. 14, § 15144 (1986).

[FN223]. See Ankersen, supra note 178, at 23.

[FN224]. 151 Cal. App. 3d 61, 198 Cal. Rptr. 634 (1984).

[FN225]. Id. at 73-75, 198 Cal. Rptr. at 639-41.

[FN226]. Id.

[FN227]. Id. at 74 & n.13, 198 Cal. Rptr. at 640 & n.13. The court said the agency had a duty to use diligence in discovering, describing, and discussing these other projects. Id.

[FN228]. Id. at 76, 198 Cal. Rptr. at 642.

[FN229]. Id. This analysis was particularly important for projects that were not part of a larger, integrated plan but were

individual and unconnected:
This independence and individualized potential approval makes it all the more important that they be cumulatively considered because, unlike the development of geothermal resources . . . the development of downtown San Francisco generally occurs bit by bit. No one project may appear to cause a significant amount of adverse effects. However, without a mechanism for addressing the cumulative effects of individual projects, there could never be any awareness of or control over the speed and manner of downtown development. Without such control, piecemeal development would inevitably cause havoc in virtually every aspect of the urban environment.
Id. at 76-77, 198 Cal. Rptr. at 642.

[FN230]. Id. at 78-79, 198 Cal. Rptr. at 642-43.

[FN231]. Id. at 80, 198 Cal. Rptr. at 644. By the court's estimate, the planning commission had left out of its computation almost 60% of other related development. Id. at 81 n.18, 198 Cal. Rptr. at 644 n.18.

[FN232]. Id. at 80, 198 Cal. Rptr. at 644, (quoting CAL. ADMIN. CODE tit. 14, § 15003(e) (1986)).

[FN233]. Note, supra note 208, at 809.

[FN234]. Id.

[FN235]. Id. at 811.

[FN236]. Id. at 812. The notator, while endorsing this approach, suggests, however, that under the court's reasoning, no cut-off date could be justified since a responsible cumulative impact assessment must consider 'the merits of each project in light of all projects.' Id.

[FN237]. CAL. ADMIN. CODE tit. 14, § 15130(b)(1)(B) (1986). See Note, supra note 208, at 815 (endorsing this approach, finding a community's own projections of its development potential a more reliable and defensible basis for cumulative impact assessment than a developer's wishful thinking). All cities and counties in California are required to prepare general plans to guide growth and development. CAL. GOV'T CODE § 65300 (West 1983). They are also required to prepare certain special purpose plans, such as the open space plan required under the Open Space Lands Act of 1970, CAL. GOV'T CODE §§ 65560-65570 (West 1983). See generally Agins v. City of Tiburon, 447 U.S. 255 (1980).

[FN238]. If local general plans are going to be routinely used as the basis for cumulative impact assessments, then specific guidelines should be established to ensure that they contain projections with sufficient detail. Requirements for the preparation and revision of local plans should be designed with this use in mind.

[FN239]. CAL. PUB. RES. CODE §§ 30000-30900 (West 1986). Originally enacted by referendum, the California Coastal Zone Conservation Act of 1972 was replaced by a comprehensive legislative scheme in 1976 and renamed the California Coastal Act. See generally Fischer, California's Coastal Program: Larger-than-Local Interests Built into Local Plans, 51 AMER. PLANN. ASSOC. J. 312 (1985). The 1972 Act gave interim permitting authority for all coastal development to the California Coastal Zone Commission. See Billings v. California Coastal Commission, 103 Cal. App. 3d 729, 738 (1980), for the legislative history of the Coastal Act.

[FN240]. CAL. PUB. RES. CODE § 30600 (West 1986).

[FN241]. Id. §§ 30200-30265.

[FN242]. Id. §§ 30500, 30512. The local coastal program includes a local government's land use plans, zoning ordinances and maps, and any special implementing actions necessary to protect sensitive coastal resources areas. Id. § 30108.6.

[FN243]. Id. The CEQA guidelines makes CEQA applicable to the California Coastal Commission's certification of local coastal programs, but not to their preparation and adoption by the local government. CAL. ADMIN. CODE tit. 14, § 15265 (1983).

[FN244]. CAL. PUB. RES. CODE § 30250(a) (West 1986). New subdivisions for areas outside of developed areas may only be approved if at least 50% of the usable parcels have already been developed, and the new parcels are to be no smaller than the average size of the surrounding parcels. Id.

[FN245]. Id. § 30105.5.

[FN246]. CAL. ADMIN. CODE tit. 14 § 15023.5 (1983). See supra note 239.

[FN247]. CAL. PUB. RES. CODE §§ 30200-30265 (West 1986). Implementation of the Coastal Act's public access provision, id. § 30212, suffered a setback when the United States Supreme Court invalidated its application to the renovation and expansion of a single-family house on the California coast. In Nollan v. Cal. Coastal Commission, 55 U.S.L.W. 5145 (U.S. June 26, 1987) (No. 86-133), the Court held that, without evidence that the individual landowner's rebuilding project directly burdened public access to the state-owned tidelands, the state's requirement that the owner dedicate a public easement along the private beach was an unconstitutional taking of private property without just compensation. Id. at 5148. The Coastal Commission had found that the Nollans' expansion of their house, in conjunction with other development in the area, would have adverse cumulative impacts on public access to the ocean. The California court of appeals had upheld the public access condition on the Nollans' development permit since under California law only an indirect relationship must exist between a development exaction and the public need to which the project contributes. Nollan v. Cal. Coastal Comm'n, 177 Cal. App. 3d 719, 723, 223 Cal. Rptr. 28, 30 (1986). The Supreme Court decision seems limited, however, to those instances where the regulatory standard imposes an affirmative requirement to accommodate the physical intrusion of others on private property. Restrictions on the owner's size or density of development may still be justified on the grounds of cumulative adverse effects. In his dissent, Justice Brennan criticized the majority's insensitivity to the necessity of considering the cumulative impact of development. Nollan v. Cal. Coastal Comm'n, 55 U.S.L.W. 5145, 5155 (U.S. June 26, 1987) (No. 86-133) (Brennan, J., dissenting).

[FN248]. Id. § 30105.5.

[FN249]. 57 Cal. App. 3d 76, 129 Cal. Rptr. 57 (1976).

[FN250]. Id. at 87, 129 Cal. Rptr. at 64. The court also upheld the Commission's conclusion that an impact report under the California Environmental Quality Act was not required, finding that its conclusion under the Coastal Act that the proposed development would not have adverse environmental effects also satisfied the CEQA standard of no 'significant effect on the environment.' The court implied that the two statutory provisions have virtually identical meaning, despite the explicit CEQA policy to consider cumulative effects.

[FN251]. 55 Cal. App. 3d 525, 127 Cal. Rptr. 775 (1976).

[FN252]. Id. at 540-43, 127 Cal. Rptr. at 783-86 (appendix containing Commission's findings regarding the cumulative effects).

[FN253]. Id. at 536, 127 Cal. Rptr. at 781. The court stated:
The loss of that best remaining viewing site would constitute an irreversible and irretrievable commitment of a valuable, diminishing coastal resource--vista points for viewing the harbor and ocean front area; they pointed out also the probable consequences to bird and other wildlife on the lagoon of an increasing density of human population resulting from continuing development toward the . . . north and south.
Id.

[FN254]. Id. at 533-34, 127 Cal. Rptr. at 779. The applicant's apparent willingness to cite such considerable cumulative effects in the report may have been based on its misunderstanding that the Commission was authorized only to consider primary, direct effects.

[FN255]. Id. at 537, 127 Cal. Rptr. at 781.

[FN256]. Id.

[FN257]. Id.

[FN258]. Id. at 538, 127 Cal. Rptr. at 782.

[FN259]. Id.

[FN260]. See supra note 249.

[FN261]. See supra note 251.

[FN262]. In Stanson v. San Diego Coast Regional Commission, 101 Cal. App. 3d 38, 161 Cal. Rptr. 392 (1980), the court that decided Coastal Southwest had a chance to respond to the holding in Natural Resources Defense Council. It found that while the Natural Resources Defense Council court did not require consideration of cumulative impacts, it did not prohibit it. It cited Coastal Southwest and the CEQA case, Whitman v. Board of Supervisors of Ventura County, 88 Cal. App. 3d 397, 151 Cal. Rptr. 866 (1979), as precedent that the 1976 Coastal Act requires consideration of these effects. To follow the petitioner's construction of the Act, with its reliance on Natural Resources Defense Council, 'would reduce the Regional Commission's planning function to a shambles resulting in a piecemeal approach which would guarantee the destruction of coastal resources.' Stanson v. San Diego Coast Regional Comm'n, 101 Cal. App. 3d at 47, 161 Cal. Rptr. at 398.

[FN263]. See supra note 243.

[FN264]. CAL. PUB. RES. CODE § 30250(a) (West 1986). A legislative finding of the 1976 Act declares that one of the Act's basic goals is to 'assure orderly, balanced utilization and conservation of coastal zone resources taking into account the social and economic needs of the people of the state.' Id. § 30001.5(b). According to a prominent member of the California legislature, the 1976 Act '[a]dded language to balance social and economic needs of the people with the need to protect coastal resources.' Letter from the Speaker of the California Assembly to the California Assembly (Aug. 6, 1976) (letter sent prior to Assembly's final vote on the Senate version of the 1976 Act), quoted in Billings v. California Coastal Comm'n, 103 Cal. App. 3d 729, 739 (1980).

[FN265]. 103 Cal. App. 3d 729, 740 (1980).

[FN266]. Id. at 740.

[FN267]. The 1976 Coastal Act specifically provides for the preservation of agricultural land and open space by preventing its incremental conversion to urban uses. See CAL. PUB. RES. CODE § 30250(a) (West 1986).

[FN268]. Billings v. California Coastal Comm'n, 103 Cal. App. 3d at 741.

[FN269]. Id. A concurring opinion was written by Justice Rouse who subsequently went on to write the 1984 opinion in San Franciscans for Reasonable Growth, which stressed the importance of the cumulative impact assessment process. See supra text accompanying notes 224-32.

[FN270]. The Billings court stated, '[T]he Commission could not base its refusal of the permit on such a speculative future contingency. The Commission clearly has the authority to prohibit any future development whose cumulative effect is both significant and adverse.' Billings v. California Coastal Comm'n, 103 Cal. App. 3d at 741. Compare this finding with the administrative consistency rationale used by Florida's Department of Environmental Regulation as the basis of its pre-1984 cumulative effects doctrine, supra notes 187-88 and accompanying text.

[FN271]. CAL. PUB. RES. CODE § 30105.5 (West 1986). See supra text accompanying note 245.

[FN272]. 115 Cal. App. 3d 936, 171 Cal. Rptr. 773 (1981).

[FN273]. Id. at 942, 171 Cal. Rptr. at 776.

[FN274]. Id. at 942, 171 Cal. Rptr. at 776-77.

[FN275]. In its first regular session, the 113th Maine Legislature adopted 'An Act to Enhance Local Control of Community Growth and Strengthen Maine's Land Use Laws.' P.L. 1987, ch. 514 (effective June 29, 1987). The law creates a legislative study committee, the Maine Commission on Land Conservation and Economic Development, consisting of nine members of the Energy and Natural Resources and the Taxation Committees. The Commission is charged with studying the relationship between growth and economic development, holding public hearings, and reviewing recent recommendations on state and local growth management problems. It must report to the Legislature at the beginning of the second regular session, in 1988. This law was adopted in lieu of several more specific legislative proposals, including L.D. 1284, which, inter alia, would have mandated local land use planning and amended the existing land use and resource protection statutes to require consideration of the cumulative adverse effects of development. L.D. 1284 (113th Legis. 1987) §§ 3, 17, 18, 30 (presented by Rep. Simpson). Section 18 of these provisions included the following comprehensive definition of 'cumulative effects':
'cumulative effect' means 2 or more individual effects, which, when considered together, are substantial or which compound or increase other environmental effects.
A. The individual effects may be changes resulting from a single project or a number of separate projects.
B. The cumulative effect from several projects is the change in the environment which results from the incremental effects of past, present and reasonably foreseeable future projects. Cumulative effects can result from individually minor but collectively significant projects taking place over a period of time.

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