

USING LOCAL ORDINANCES TO PROTECT WATER RESOURCES

by
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ABSTRACT This article describes five local land-use planning authorities—subdivision ordinances, planning ordinances, zoning ordinances and overlays zones, building ordinances, and financial and property related ordinances—to show how they can be employed to better protect natural wetland, riparian and coastal resources. Such ordinances are even more effective when nested within a supportive federal and state land-use planning framework and when the ordinances themselves are designed to be mutually reinforcing. Until this happens, water resource protections will remain piecemeal and fail to address the systemic nature of the resource and the multiple sources of impacts to the resource. Other states and localities have begun to adopt a more integrated land-use planning approach, providing examples for California and for local municipalities.

INTRODUCTION

In the United States, state and federal laws serve as the primary method to protect natural wetland, riparian and coastal resources. While specific aspects of these natural aquatic systems are heavily regulated, development and urban growth continue to impact them. Cities and counties may seek to balance growth with resource protection, but local governments are often pressed to develop their land to the maximum extent possible. Moreover, many perceive that state and federal regulators already perform that function. Therefore, local laws do not usually include specific measures for protecting natural resources.

Land is part of the ecosystem that the water environment depends upon. One of the most important reasons that regulations dealing with water systems seem inadequate is because they do not address local land use. It is well established in our legal system that local governments have authority over land use. Federal laws dealing with specific components of the ecosystem do constrain local decision makers. However, this top-down control sets up a system of intervention that forces cities to react to problems rather than preventing them. It also fosters an adversarial approach locally towards solving these problems, rather than one that motivates proactive approaches.

To develop sustainably, cities can adapt their laws to reduce the ecological impact of development, while still encouraging vigorous economies. Many people believe that the environment and urban growth are fundamentally at odds, that you can have only one or the other. However, some cities around the nation have decided to assert a greater role in protecting their natural environments. This article will describe how cities are beginning to use innovative local policy proactively to meet both goals. Through a more

multipurpose and holistic form of local planning, other levels of government have less need to tell cities what to do through regulation. Instead, a city can plan for their specific circumstances.

Proactive local policies are more common in communities that have undergone significant regional visioning, consensus building, and planning activities. In Seattle, for example, a common concern over the wild salmon populations led to broad-based regional planning process. In Pittsburgh, concern about blight, created by industrial decline, led to a regional vision to revitalize the city by restoring its urban rivers. Then local governments can revise codes to implement what the visioning process outlined. In Los Angeles, a promising regional consensus-building process for the region's expected future growth has commenced through the SCAG Compass 2020 growth visioning process and the Neighborhood Councils that have been sanctioned by City Hall.

Once a vision and set of goals are established by the community, five general categories of local ordinances that can be used as tools to create growth that works within the hydrologic parameters of a city's watershed: subdivision, planning, zoning, building, and financial/property related ordinances. This article will outline how each of these can be used to form and implement a cohesive and effective local plan for developing sustainably.

While command-and-control environmental state regulations can conflict with local goals for economic development, state policy that creates a coherent approach and a clear, user-friendly process can facilitate the adoption of locally determined smart growth policy. Ordinances that balance development and the environment are more common and more comprehensive in states that have enabling state-level legislation clearly leading the way. California has adopted a number of laws that deal with growth, sustainability and the environment. This has come out of wide spread support for better urban planning and has supported many new initiatives locally. However, these laws do not seem to be coherently interrelated and do not necessarily work together to achieve the multiple goals for our urban places. At the state level, the components of a comprehensive approach exist, but a unifying vision or plan does not seem to be well articulated. The prevalence of using local laws to preserve the aquatic environment will greatly increase as California streamlines its approach to how this should be done. However, cities can take control of their own circumstances by retooling their legal codes to guide how they grow. (See Appendix A for review criteria for local plans and ordinances.)

THE LAND-USE PLANNING FRAMEWORK

State Law Framework for Local Actions

The International Council for Local Environmental Initiatives (ICLEI) serves local governments working towards sustainability. Statistics from the data ICLEI has compiled from local sustainability efforts around the world shows that the countries with the largest number of local environmental policies and programs were those that had similar supportive national and regional programs. In fact, cities with supportive higher

policy were 35 percent more likely to have sustainability programs and policies themselves.¹ With a higher level framework to fit into, it is simply much easier for local governments to convert to new practices. They are less isolated from public funding resources, they are less legally isolated when they adopt new policy, and they have a template to build from.

Within the United States, this trend is also very prevalent. States like Maryland, Virginia, Minnesota, Wisconsin and Oregon all have a strong sustainability and smart growth policies and programs that have led to significant improvements to their local ordinances. In Virginia the General Assembly enacted the Chesapeake Bay Preservation Act in 1988. The Act is a critical element of Virginia's multifaceted response to the Chesapeake Bay Agreement, which is a multi-state agreement to restore the Bay. The Bay Act, an extension of the public trust doctrine, established a cooperative relationship between the State and local governments aimed at reducing and preventing non-point source pollution.

The Chesapeake Bay Act is also one of the enforcing laws within Virginia's Coastal Resources Management Program, which was established under the federal Coastal Resources Management Act. This interlocking chain of policies shows that higher level national and state policy is very important for creating the impetus and authority to enact location-specific policy. The State's Coastal Resources Management Program created a local assistance department to help localities abide by the requirements of the Act. So not only was a legislative framework created, but an implementation framework and support structure were also created to help turn policy into practice. The services offered to local governments include:

- Training and assistance in making site-specific Resources Protection Area determinations.
- Training and assistance in proper buffer management and restoration.
- Training and assistance in Best Management Practices siting, design, and inspection/maintenance.
- Training and assistance in preparing and/or reviewing water quality calculations for meeting the stormwater quality requirements of the Bay Act Regulations.
- Assistance in reviewing site plan compliance with the requirements of the Bay Act and local implementing ordinance.
- Assistance in reviewing master-plans for stormwater management.²

As a result of all of this, Virginia has some of the most progressive local laws in the nation dealing with runoff management and preservation of the aquatic environment. Not only does this serve to preserve the environment, it prevents flooding, improves regulatory compliance capability, and saves money on infrastructure.

In California a good example of the impact of supportive state legislation exists with the Coastal Zone Management Act. This Act has spurred protection and planning capabilities within the coastal zone. Building from these kinds of authorities will be increasingly important for communities trying to implement their own smart growth legislation and

land use laws at the regional level. There are 88 cities within Los Angeles County alone. Cities in such an interrelated urban area need to work on establishing effective environmental ordinances in a systematic and consistent way across jurisdictional boundaries. Regional government organizations like the Southern California Association of Governments (SCAG) can, and do, play an important role in terms of providing consistent information and understanding across city boundaries. This kind of entity can be further utilized to help facilitate local implementation of state level policies through location-specific programs that provide guidance and advice to make transition easier for cities.

In practice, California's local public works and natural resources agencies and departments focus on the particular piece of the environment they have authority over like stream channels, dams and lakes (flood control) or parks (recreation), plants (weed abatement, fire suppression), animals (public safety). The cities focus on land use decisions on land that people own privately. This separation fails to incorporate natural resource functioning into development planning. California's state laws are increasingly addressing the components of watershed and water resource management; however, as a whole the actions required in these efforts still reflect traditional divisions. If state level legislation uses new catch phrases and ideas, yet perpetuates segmented, status quo public administration processes by creating policy solutions that are still segmented by sector, planning and land use practices will not fundamentally change.

In California voters have shown a great deal of public concern for the future of our natural resources at the State level. For example, Propositions 13, 40 and 50 were all recently approved in state-wide elections and they dedicate over \$10 billion to open space, water resources and habitat improvements. The bond language reflects intent to direct public funding towards projects emerging from comprehensive, collaborative watershed-based processes. These should consider and address all of the issues within a city that impact its environment, whether they are natural, economic, social, legal, political, etc. However, proposed projects deal mostly with just a few of these issues, and they aren't always part of a watershed strategy. Finding local projects that are truly multipurpose is extremely challenging. This approach is much broader than local agencies have ever had to deal with in the past.

The approach is also much broader than state agencies have had to deal with. To figure out how to implement this emerging watershed mission, and to help facilitate local projects applying to these funding sources, the California legislature passed AB 2117. This law is designed to take stock of existing successful watershed efforts and facilitates a joint watershed planning approach by requiring CalEPA and the California Resources Agency to evaluate and support the existing collaborative mechanisms between the public, private and non-profit sectors at all levels in various watershed partnerships and initiatives. One important limitation is that AB 2117 mainly addresses coordination among state entities that play a role in watershed management. This effort promotes public sector collaboration on natural resources projects, but is inherently limited if it does not also integrate the impact the private sector is having on the land uses around all

of these water resources. The collaboration mandated by AB 2117 cannot be relied on as the sole solution.

Constraints and Opportunities at the Local Level

Private interests and local governments are not always so easy to bring into the collaborative watershed planning process. As an example, Orange County has initiated a watershed restoration project and planning process in the San Diego Creek watershed. Some landowners are working proactively with the watershed committee, and some are not. Some cities have included the watershed's hydrologic concerns in their land use planning, but most have not because they do not know how, they don't have to, they don't have the public pushing them to do so, or because they have the perception that these concerns conflict with economic growth. This watershed effort is a very progressive one within the state, and a number of integrated ecological restoration projects will be built on available public property. However, the potential for management of the watershed is already very much limited by the lack of ability to get city governments involved by incorporating private land and land use at the planning level in the overall watershed plan.

Cities tend to do what voters and private interests will support. The public tend to react negatively to potential impediments to private property rights, which makes many municipalities hesitant to take on issues dealing with private property in any broad way. Many private landowners, investors and developers would be happy to do help protect the environment if it could be done easily and predictably. The reason property owners don't do what is environmentally preferable is because it is not streamlined into the development or land use process that cities create, and there are really very few financial incentives for people to go out of their way otherwise.

This landowner/local government interface is something that local governments can take control of and redesign to achieve a more mutually beneficial outcome. Financial deals have very specific parameters that can make and break projects. When the government asks or forces investors in the local economy to go out of their without making it easy or feasible to do so, the less likely a project is to be successful for the investor. When the deal is not feasible for the investor, the project does not happen in that city. Eventually if this happens often enough the city's economy begins to suffer. This problem is not the fault of the investor or property owner. It is a lack of thinking it through and providing a customer-focused process that directs and enables both businesses and local communities to work within the hydrologic parameters of the watershed. Ordinances can be designed to create an interface with those who use the land that is more user-friendly up front, rather than one that kicks in after the fact after plans have already been made. This way, rather than fighting against the local community and making taking care of the watershed difficult, a city government can organize itself better to make it easier for the community to help itself.

If a large development firm wants to build a shopping mall in a specific area of a city, the city should be able to tell the developer things like what role each of the sites they are

considering plays within the larger watershed ecosystem, what some of the features the site and building design must have to work within those concerns, and make recommendations for cost effective ways to do this. Local ordinances should be in place that are clearly communicated from the beginning and encourage and incentivize the developer to build a sustainable project in the appropriate site. The permitting process, project financing, the construction process, and project completion could all be much easier if the developer has been able to incorporate all of this information into their project plan from the start. The state government can play a much more proactive and supportive role to help cities partner with their private land owners to better manage watershed resources.

The good news is that the market will respond if city support is there. In fact, in cities all across the United States, developers and property owners are using environmentally progressive attributes as a marketing tool. There are entire movements within the development world trying to promote themselves as the most advanced in terms of ecology and sustainability. Terms like New Urbanism, Transit Oriented Development, Sustainable Development, Smart Growth, Green Building, and so on are all the catch phrases that developers are using as a way to competitively package their real estate products. Cities must become more proactive in helping private interests truly integrate more effectively with the reality of the environment for these terms to have meaning beyond marketing. For sustainable development to have meaning for water systems, aquatic resource issues must also explicitly be tied into this development processes in a way that works for both developers and the watershed ecosystem. Guidance and support from the State that helps cities develop the resources to adapt to this would do a lot to advance this goal.

Currently California's efforts at 'smart growth' are emerging, but they tend to be focused on anti-sprawl policy, such as in AB 857. This law supports things like compact 'transit oriented development' that helps fulfill real estate development demand without having to build on open green spaces out at the urban edges. It allows for more efficient growth because there are fewer increases in sprawl related growth pressures like spending on new roads, longer commute times, costs for new water & sewer infrastructure, loss of green space, and so on. This is good because it helps the environment by preventing the impacts of development from getting worse faster than necessary. However, it doesn't necessarily help to improve the aquatic environment in urbanized areas where it is already degraded. It also does not explicitly integrate a city's development pattern and urban design with the local hydrologic characteristics. Those concerned about water resources like streams, lakes, wetlands, aquifers, and coastal areas should be alarmed that the debate about growing smarter in California has not explicitly embraced the needs of these water systems where development exists. Tax payers will also not get nearly the return they are expecting from the billions of dollars in bonds waiting to be spent that they approved in the various Propositions to protect and restore those systems. Voters want to see the resources they live around improve. This means targeting highly urbanized and degraded resources like the LA River, not just healthy rivers out in the undeveloped mountain ranges of rural California.

LOCAL LAND-USE PLANNING

The Role of Local Ordinances

Natural resource policy in the United States has been designed to protect specific components of our ecosystem such as air, water, land, animals and forests. These laws have had a huge impact by forcing governance and protective action in a uniform manner. However, there are also many limitations to this system. The most significant issue is that by focusing on specific segments of the ecosystem, cumulative systemic impacts are not considered. Current policy and regulations present a false sense of stringency because these specific parts of the ecosystem become less resilient and functional when the rest of the ecosystem is also impacted by a variety of other development pressures. This is what it means to be a system.

In the United States water use is regulated to meet standards that protect the biological, physical and chemical integrity of the water environment.³ However, when the rest of the hydrologic ecosystem is degraded these standards do not deal with the entire scope of impacts to the water environment. For example, air pollution is captured by rain droplets that fall to the ground. Land is developed to the point that the normal natural processes do not occur as water passes over and through the soil. Even if forests are not entirely destroyed, in many areas they have been reduced to the extent that trees are no longer absorbing and cleaning the water that absorbs into the soil. Instead pollutants are picked up and carried into larger water bodies. These things impact all the chemical, physical and biological characteristics of a water body, but water regulations do not really have authority over these things.

One of the most significant contributors to these other systemic impacts is land use. The Federal government does not govern local land use. Land use authority is considered a very important state right, and states grant that authority to local municipalities. This leaves a gap in the application of environmental regulation & protections relating to land use impacts. The actions that cause land use impacts to the water habitat include building extensive impervious surfaces that prevent water from entering into the soil, removing vegetation that absorbs and cleans the water in the soil, and locating development in areas with significant ecological function such as recharge basins, wetlands or along stream banks.

In contrast, local ordinances largely focus on other social or financial issues such as housing, poverty, education, business, property rights and ownership, municipal service provision, transportation and so on. Every city or county in California is required to have a General Plan, which is considered to function like a constitution for municipal government. A General Plan must have an element that deals with the provision of open space. However, this space is generally designed to create recreational and social value, rather than ecological function. In the General Planning process ecological function is usually separated from the Open Space element and dealt with through the Conservation element. Although different elements of a General Plan cannot be explicitly inconsistent with each other; this segmentation often means that land that is conserved does not

necessarily also serve an open space, economic, transportation, or housing function. Conversely, none of these other functions are usually designed to serve an ecological or conservation function, leading to single purpose land use that excludes environmental issues. This assumes that land that has been used for some purpose does not serve any ecological value. For example, Housing elements do not make a habit of stating that pervious surfaces are to be minimized or located a certain distance from stream banks. The simple outcome is that in terms of local land use, the habitat value that is not within a conservation area is not protected by local policy or practice. Yet all of this land is still an inseparable part of a larger ecosystem and must be dealt with as such in local law in order to achieve environmental sustainability.

Cities around the United States are beginning to incorporate environmentally sustainable or smart growth policies into their legal code to deal with growing environmental problems directly. These ordinances vary greatly and are usually based on specific local issues. This can make it difficult for other cities to use them as models for their own needs. Therefore, the following sections of this article outline a kind of organizational framework that makes it easier for cities to understand what their options are, and what kinds of ordinances may be best in different situations.

Other public entities involved in local governance are Counties, Districts, and Agencies. These entities are involved in many important functions related to the water environment such as infrastructure, flood & stormwater management, public works, and parks. However, for the purposes of this analysis, traditional city ordinances will be considered. Local ordinances usually seem to be designed to achieve some specific outcome. The desired outcome may be anything from habitat preservation to freeway development. The primary legal tools cities have to achieve their goals for land uses can be thought of in terms of 5 broad categories: 1) subdivision ordinances, 2) planning ordinances, 3) land use zoning ordinances, 4) building ordinances, and 5) financial and property related ordinances.

Subdivision Ordinances

The laws governing the development and subdivision of land are based on the State's Subdivision Map Act. This act gives local governments the authority to pass a law setting conditions for the subdivision of land, and thus the impact of that subdivision and development on the municipality. However, local government has no authority to enforce any development standards for the subdivision development that are not specified in a local subdivision ordinance. Therefore, codifying a community's environmental concerns in a subdivision ordinance is an extremely useful legal method to solve environmental problems before one even develops.

Conditions that are put into law usually relate to things like incorporating infrastructure like roads or schools into a development plan. This is to help ensure that local governments can moderate the impact of large developments on existing infrastructure and resources. If stipulated in the local subdivision law, developments can be required to conform to the local general plan and zoning ordinance, prepare environmental impact

reports, build improvements, dedicate land or easements, and pay impact fees. They can also control things like the overall conservation of open space, site design or drainage grading of the land and require erosion abatement if the ordinance goes that far.

Developers will not usually design a project for aquatic ecosystem concerns unless the permitting process or financing process depends on it. Therefore this is one important way cities can prepare ahead of time to affect the use of land when it is in the development process. Iowa County, Wisconsin has a very good example of a model local subdivision ordinance geared towards incorporating conservation goals into a development plan.⁴ Among other things, it stipulates that no land shall be approved for subdivision if it is environmentally unsuitable or sensitive. Wisconsin State government offers another good example of a proposed conservation oriented subdivision ordinance.⁵

Planning Ordinances

Planning ordinances are often more of a policy statement that also carries the force of law. Zoning laws, discussed in greater detail below, are developed to implement the objectives of a planning law. Therefore, if watershed, wetland or water habitat integrity is a goal for a particular city, these goals must first be given legal standing in the policy statements of the planning laws. These ordinances are designed to guide the future growth and character of a community and codify plans such as the General Plan, Specific Plans, Community Plans, and even issue specific plans such as a Stormwater Management Plan or a Shoreline Preservation Plan. If environmental preservation goals are not in the planning ordinances, it can be difficult to find a legal basis for putting them into any other local ordinance. The different elements of a plan cannot be inconsistent. So if one goal is to preserve a freshwater marsh, another goal cannot be to build affordable housing on the same location. However, as mentioned earlier, the different elements do not usually incorporate environmental considerations into other areas such as housing, transportation or safety. This can limit the actual environmental protection capability of the Plan document as a whole because each aspect of the urban context has an impact on ecosystem value.

A successful example of a General Plan that does explicitly outline environmental goals throughout the planning document is the city of Berkeley, California.⁶ For example, the Land Use element of Berkeley's General Plan creates a policy objective to pursue "development that is architecturally and environmentally sensitive, embodies principles of sustainable planning and construction, and is compatible with neighboring land uses and architectural design and scale". This objective achieves an ecosystem conservation goal through the land use process, even though conservation is a separate element in the same plan.

Zoning Ordinances and Overlay Zones

Zoning ordinances are created to implement the goals of the General Plan within each individual parcel of land within the community. Whereas planning laws set out concepts, visions and goals for how places should be, zoning laws are used to specify and

implement the place-specific actions necessary to achieve those goals. They can be used to target what actually happens at specific locations. Zoning primarily regulates the location, density and intensity of different types of land uses. Land uses are grouped together in zones to establish a consistency of uses in a given place. When a person wants to construct a building, or make a modification to an existing structure, they must show that the proposal conforms to the requirements for the land use zone it is in to get a permit from the zoning office. The issuance of this permit may be given outright, or a condition may be placed on the permit. For example, in an area that has a design review board, the board may allow the permit with the condition that certain aesthetic or functional design characteristics are met. This kind of permitting process could also be very useful for environmental and conservation purposes. All of the physical attributes of the built environment can be regulated through the land use zoning code. Site design standards for water infiltration, water conserving landscaping, open spaces, or setbacks from streams, are examples of what can be required through zoning.

Overlay Zones are used effectively in a larger area that has special significance for conservation. This means that in addition to the given use that is zoned in an area, the special requirements of the overlay zone will also have to be met in order to obtain a permit. Huntington Beach, California has a Coastal Overlay Zone Ordinance.⁷ This law requires density limits, setbacks from streams, landscaping requirements, beach access and public use areas through the entire coastal zone to preserve the ecological and cultural integrity of the coast.

When a developer is undertaking a massive development project, they will often have a mix of uses that are planned within the project. Because the scope of the project is larger than the zoning ordinances are intended to regulate, the entire development plan can be given its own zone, which becomes a planned unit development site. This kind of zone allows for a mix of uses, but must go through a discretionary review by the planning department to ensure that it meets the goals and policies of the existing planning ordinances. This discretionary process can be used to require the design components and characteristics of the development through a permit that is based on meeting specific conditions.

Once developers go through the involved process of getting both the subdivision permits and the planned development permits, they will want to be able to carry out their project without having to be subject to unexpected future requirements. In order for their development project permits to become vested, and thus immune from changing laws during the development process, a developer will sign what is called a Developer Agreement with a city. This is becoming more and more common in California, so it will be increasingly important to have the appropriate plans and requirements in place for the whole city before a development project begins, and not as an afterthought during the process of construction.

To help consider development projects formally, many local governments have specifically adopted site plan review criteria. A site plan review may be required in a separate local law that applies to the whole city or it may directly be part of a zoning

ordinance for that land use zone. It is critical to review and coordinate the language in any new zoning laws with the local site plan law. The sites reviewed by these ordinances may encompass large tracts of land. Therefore, issues such as location of roadways, walkways, design of parking lots, number of parking spaces, grading, access points, infrastructure location, landscaping, etc., may be fully addressed in the zoning ordinance, or the site plan review ordinance.

In addition to stipulating what is allowed, zoning can also identify what is not allowed. Uses or activities that are considered a general nuisance to a city can be identified as such in a zoning type ordinance that restricts the presence of the nuisance within a specified zone. In terms of environmental issues in Southern California's environment, *Arundo Donax* is an invasive species that damages water habitats. Therefore the cities that are impacted could declare the sale of this plant a nuisance and thus prevent retailers from selling it in that area or even homeowners from planting or maintaining it.

Zoning ordinances have a very far-reaching impact and are in many ways how the final decision for how land is used gets made. However, many cities have relied too much on zoning alone and have not combined it with comprehensive planning goals to give a long term comprehensive vision that future permitting or variance decisions can be based on. The lack of planning land use with a vision for sustainability has allowed development to sprawl into exurbia and ecologically sensitive areas of existing communities. Cities are required to have planning ordinances in California, but they are not required to have good ones that consider the future impacts of a combination of various land use decisions. Most zoning ordinances separate different types of land uses, establish minimum distances between houses, minimum setbacks from roads, minimum parking space requirements, minimum road widths, and so on, so that the only type of development that can occur is sprawl, whether that is the intention or not.

Building Ordinances

Building codes similarly fail to consider the environmental impacts of a building, or the cumulative impact of different building standards. The building codes for most cities are a set of standards adopted directly from state standards and codes. Cities don't have to build any better than the state standards if they don't want to, but they are required to at least require those standards as a minimum. Buildings codes may not be as significant of an issue for water quality as they are for energy consumption and air quality. But, they do play a role in determining structural attributes such as where the rainwater that falls on a roof is directed. Does it go to a funnel that goes into a drain, or is it incorporated into the landscape plan so that rainwater is directed to some infiltration areas? If enough buildings in Los Angeles incorporated this design feature alone, the peak stormwater flows of the LA River could be reduced enough to make it much easier to remove the concrete channel and return the river to its natural riverbed.

Finance and Property Related Ordinances

Finance and property related ordinances tend to deal with incentives for various actions, rather than the direct control of those actions. They are based on the assumption that those who have invested in property will generally do whatever increases the value of that investment. Some of the financial tools that cities can use to direct land uses are tax incentives or disincentives, economic development subsidy criteria, public financing criteria such as requirements to be able to receive bond money, and impact extractions or fees. All of these mechanisms do not directly require a private entity to protect the aquatic habitat. For example, preserving stream or wetland buffers can be a requirement to gain access to financial resources. Economic development is often thought to be in conflict with environmental goals. However, tools such as state enterprise zones are used to incentivize businesses to move back into the developed and run down areas of a city. This allows for a more efficient use of land and helps prevent development from moving out into greenfield areas.

At a city level, redevelopment zones accomplish the same goal. There are dozens of redevelopment zones within the City of Los Angeles, all of which were created by city ordinance. These ordinances can also include stipulations for environmentally sustainable design requirements for all new development projects in these blighted communities. The environment can even be used as a catalyst for redevelopment. This has not been done successfully in California yet, but other cities around the country have used environmental plans and design as a revitalization tool. Pittsburgh has based its entire urban revitalization plan around the restoration of the river systems that run through the city.⁸

The rights and privileges of private property are one main obstacle to implementing ecologically sensitive land uses. With certain exceptions such as eminent domain and utility easements, private landowners simply do not have to change or restrict the use of their land unless they want to. As watershed and wetland concerns have become a growing concern in many communities, different public agencies have begun to effectively partner with private landowners to achieve conservation goals while still maintaining private property rights. This is usually done through voluntary concessions that have been made by creating incentives for this kind of cooperation. The private controls over land use that can be negotiated are easements, covenants, conditional uses, and deed restrictions. These generally entail removing or restricting some aspect of a property owner's bundle of rights without affecting the primary use of the land for the owner.

An example of when a land owner would willingly give up one of the property rights is when the owner is allowed to develop one part of the property in turn for giving up the development rights for another part of the property. These property agreements are typically permanent and run with the land from one owner to the next. Cities can pass various ordinances that can give a public entity a legal reason or need to enter into this type of negotiation with a private landowner. Napa Valley has used these kinds of legal agreements with a good deal of success, allowing a land trust to take over conservation

easements for over 10,000 acres.⁹ A city can facilitate this process through supportive language for conservational uses in the general plan, and by zoning the land for these kinds of low intensity uses.

CONCLUSION

Local governments can build water resource realities and considerations into their land use policies without compromising the need for growth, or private property value. Cities simply need to include hydrologic characteristics as a base consideration for urban design and growth, and then chose mechanisms to implement the goal. In some places this will mean preserving or restoring wetlands in areas where they are particularly important. In other places this will mean using different site and building design techniques. And, in other places this will mean re-envisioning how we define land use and infrastructure to achieve more multipurpose outcomes. Where it is important, cities can chose to preserve valuable habitat in its natural state. In other cases they will want to find some kind of design or engineering fix to maintain the same level of ecological function in an area, while altering the natural state of the environment. In combination, the entirety of an aquatic system can be protected.

The hydrologic characteristics of a place can be included in a growth plan that achieves any number of urban goals. It could create a more grounded sense of place and community identity by making the original characteristics of that place visible. It could act as a catalyst to stimulate investment in development or revitalization projects by creating a new natural amenity. It could stabilize property against the potential risk flood damage by reducing the amount of water that runs off into storm drains all at once during heavy rains. It could be used to design spaces that serve multiple purposes reducing the spread of single purpose developments on the periphery of cities in green field areas. It encourages growth that is adapted to the local environment, which saves money on infrastructure. It would help a region to compete with other regions economically using the money that could be saved on infrastructure, preventing the cost of losing local resources, or by having more amenities to offer. A city could become more sustainable by being adaptable to future demands for growth without having to compromise local natural amenities. The list of potential benefits could go on and on. Ultimately, any city or county can achieve these benefits by incorporating the hydrologic ecosystem into land use and economic development planning, which should then be implemented through their local ordinance structure.

END NOTES

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- 8 Mazmanian, Daniel A. and Michael E. Kraft. Towards Sustainable Communities: Transition and Transformations in Environmental Policy. Cambridge: The MIT Press, 2001.
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APPENDIX A

CRITERIA FOR REVIEWING LOCAL AQUATIC HABITAT PROTECTION MEASURES*

1. Ensures that development will avoid inappropriate areas such as wetlands, unstable slopes or areas of high habitat value or other environmental constraints.
2. Adequately avoids stormwater discharge impacts to water quality and quantity or to the hydrograph of the watershed, including peak and base flows of perennial streams.
3. Adequately protects riparian areas with management requirements to attain or maintain buffers around all rivers, estuaries, streams, lakes, deepwater habitats, and intermittent streams. Compensatory mitigation is provided where necessary to offset unavoidable damage.
4. Avoids stream crossings by roads, utilities, and other linear development wherever possible and where crossing are needed, minimize impacts through choice of mode, sizing, and placement.
5. Adequately protects historical stream meander patterns and channel migration zones and avoids hardening of stream banks and shorelines.
6. Adequately protects wetlands and wetland functions, including isolated wetlands.
7. Adequately preserves the hydrologic capacity of permanent and intermittent streams to pass peak flows.
8. Includes adequate provisions for landscaping with native vegetation to reduce need for watering and application of herbicides, pesticides, and fertilizer.
9. Includes adequate provisions to prevent erosion and sediment run-off during construction.
10. Ensures that water supply demands can be met without impacting flows needed for instream habitat either directly or through groundwater withdrawals and that any new water diversions are positioned and screened to minimize or prevent injury to native fish.
11. Provides necessary enforcement, funding, reporting, and implementation and formal plan evaluations at intervals that do not exceed 5 years.

12. Complies with all other state and federal environmental and natural resource laws and permits.

APPENDIX A

OTHER RESOURCES

SAVE THE BAY, PROTECTING LOCAL WETLANDS: A TOOLBOX FOR YOUR COMMUNITY, (no date)

Chapter 4, Approaches to Local Wetland Regulation,

Chapter 5, Elements of a Local Wetland Protection Regulation, and

Appendices:

Santa Cruz County Code, Riparian Corridor and Wetland Protection Ordinance

Santa Cruz County Code, Sensitive habitat Protection Ordinance

Santa Clara General plan, Resource Conservation Element

San Rafael Municipal Code, Wetland Overlay District Ordinance

County of Santa Clara Riparian Corridor Study: A Background Document for the Development of a Riparian Protection Ordinance for the County of Santa Clara, prepared by Planning Office, Environmental Resources Agency, County of Santa Clara (June 5, 2003)

Memorandum: Stream Setback Technical Memo from James D. Robins, Jones and Stokes to Charles Wilson, Director, Napa County Conservation Development & Planning department (Oct. 18, 2002).